



SANTÉ MONDIALE 2030

THINK TANK

The healthcare professions of tomorrow

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Table of contents

Table of contents	1
List of acronyms and abbreviations	4
List of illustrations, figures and boxes	6
Foreword and acknowledgements	8
Executive summary	9
Introduction	14
1. Background	15
1.1 Background: a brief history of international initiatives related to the healthcare professions	15
1.2 Context of the study: shortage and unequal distribution of health human resources to meet tomorrow's health challenges	17
2. Study objectives and research questions	20
2.1 Study objectives	20
2.2 Research questions	21
3. Methodology	21
Part 1. Dynamics and recent developments in healthcare professions worldwide	22
1. A global shortage, on a planetary scale	23
1.1 Global shortages, national shortages: statistical estimates and regional dynamics	25
1.2 Uneven distribution: global estimates conceal major disparities	27
1.3 Healthcare, a fast-growing sector: the example of France	28
1.4 The "Great Resignation" and the healthcare sector	32
2. Recognizing the importance of working conditions for healthcare professionals	34
2.1 Caring for caregivers: a necessity	34
2.2 The attractiveness of the healthcare professions	35
3. Recognition of the diversity of healthcare professions	39
3.1 Better representation of the diversity of healthcare professions: a trend that has gained strength since the end of 2010	39
3.2 The example of public health professions during and following the Covid-19 epidemic	40
4. Creating new healthcare professions: concrete examples, solutions and challenges	42
4.1 Some examples of new healthcare professions	42
4.2 The creation of a new profession: challenges and difficulties	43
Conclusion	45
Part 2. Focus on Sub-Saharan Africa	46
1. Tomorrow's healthcare professions in Sub-Saharan Africa: first and foremost a question of numbers	47
1.1 Far too low a density	47
1.2 A major gap to achieve Universal Health Coverage of 70% by 2030	48
1.3 Representing the ideal <i>skill-mix</i> : an illustration of the diversity of healthcare professions required for the proper functioning of healthcare systems in Africa	49
2. Community health workers: an essential component in many sub-Saharan African countries	51

2.1. Relying on community health workers, a strategy adopted by many countries	52
2.2. Community health workers: health professionals like any others? Issues of professionalization and conditions for integration into the healthcare system	55
3. Investing more in the recruitment and training of healthcare professionals: a strategic direction for the future	57
3.1 Creating the tax base needed to recruit young graduates: a matter of urgency	58
3.2 Increasing training capacity for tomorrow: a worthwhile investment	59
3.3 Guaranteeing the quality of training to improve the quality of care	61
4. The challenge of retaining healthcare professionals in rural and remote areas	64
4.1 Financial incentives: salary as a prerequisite	64
4.2 Non-financial incentives: the growing importance of working conditions for healthcare professionals	65
4.3 Decentralizing training to decentralize care	65
5. Private sector development in healthcare: a rapidly expanding trend in sub-Saharan Africa.	66
5.1 The role of the private sector in the training and employment of human resources for health in Sub-Saharan Africa	67
5.2 Managing the development of the private sector in Sub-Saharan Africa: a challenge for achieving universal health coverage	68
6. Governance and management challenges	70
6.1 Understand the consequences of a lack of governance in order to identify priority interventions	71
6.2 Improving technical and professional leadership at the highest levels of government	73
Conclusion	75
Part 3. Future trends and challenges	76
1. The impact of healthcare system transformation on the healthcare professions	77
1.1 A challenge to the hospital-centric public health model	77
1.2 The emergence of new "intermediary" professions, task delegation and changing fields of practice	78
1.3 The emergence of a more global vision of health	78
1.4 The importance of social dialogue and a cross-sectoral approach.	79
2. Mobilizing civil society and communities	80
2.1 Bringing health and <i>care</i> activities closer together	81
2.2 Health mediators and community health workers: access to care, health information and prevention for people in precarious situations and in medical deserts	81
3. Gender inequalities and the growing recognition of women's role in the healthcare professions	83
3.1 Gender inequalities among healthcare professionals	83
3.2 Gender inequality, an object for analysis and reflection	85
4. Combating discrimination within healthcare systems	86
4.1 The impact of discrimination based on ethnic origin on the health of people and groups of people who are victims of discrimination	87
4.2 Global power imbalances	88

5.	Advances in science, technology and digital health	89
5.1	The impact of digital health on healthcare practices and professions	89
5.2	The emergence of new skills and structural changes	91
6.	Changes in training for the healthcare professions	92
6.1	Develop training programs to upgrade skills and formalize new professions	94
6.2	Breaking down barriers between existing professions	96
6.3	Using new technologies for learning	97
7.	Mobility, migration and new opportunities	98
7.1	The scale of healthcare professional mobility and its impact on healthcare systems	99
7.2	The WHO Global Code of Practice for the International Recruitment of Health Personnel	100
7.3	Policies implemented by countries	101
8.	Health and the environment: professional opportunities and a growing sense of urgency, but what new professions?	103
8.1	Health and climate change: an emerging theme, but what specific professions?	103
8.2	Environmental health	104
8.3	The One Health approach	104
	Conclusion Part 3	105
	General conclusion	106
	Bibliography	108
	Appendices	120
	Appendix 1: Glossary	120
	Appendix 2 - Detailed methodology	122
	Appendix 3: Indicators used to measure the minimum density of healthcare professionals required by 2030	127
	Appendix 4 - Density of community health workers per 100,000 people in 2018 in countries in the WHO Africa region.	128

List of acronyms and abbreviations

ADS	Army for Health Development
WHA	World Health Assembly
CHW	Community health worker
AVS	Health extension agents
ILO	International Labour Office
ARO	WHO Africa Regional Office
<i>Competency-Based Education (CBEFormation fondée sur les compétences)</i>	
ECOWAS	Economic Community of West African States
CCNE	Comité Consultatif National d'Ethique pour les sciences de la vie et de la santé
CHU	University Hospital Center
CRFPS	Regional Council for the Training of Health Professionals ICRC International Committee of the Red Cross
ISCO	International Standard Classification of Occupations
CME	<i>Continuing medical education</i> CPDDéveloppement professionnel continue (<i>Continuing professional development</i>)
CSU	Universal Health Coverage
DARES	Direction de l'animation de la recherche, des études et des statistiques (French Ministry of Labor, Full Employment and Integration)
EOHSP	<i>European Observatory on Health Systems and Policies</i>
EPHF	<i>Essential public health functions</i> EPI Personal protective equipment
EPR	<i>Emergency preparedness and response</i> GHW <i>Global health workforce</i>
GHWA	<i>Global Health Workforce Alliance</i> GHWN <i>Global Health Workforce</i>
Network HCWF	health and care workforce
HEW	<i>Health extension workers.</i> HWF Health Workforce
IANPHI	<i>International Association of National Public Health Institutes</i>
IDE	State Registered Nurse
IPA	Advanced Practice Nurse
LMD	Licence Master Doctorat
MES	Ministry of Higher Education
MSF	Doctors Without Borders
MdM	Médecins du Monde
NHWA	<i>National Health Workforce Accounts</i> NPHIs <i>National Public Health Institutes.</i>
OECD	Organisation for Economic Co-operation and Development ODD Sustainable Development Goals
IO	International Organizations

ILO	International Labour Organization
WHO	World Health Organization WHO
AFRO	WHO Africa Regional Office NGO Non-governmental organization
ONGi	International non-governmental organization PRFI Low- and middle-income countries
PRE	High-income countries
HHR	Health human resources
RSS	Strengthening health systems
SADC	<i>Southern African Development Community</i> (Communauté de développement de l'Afrique australe)
SIS	Health Information Systems
SWEDD	<i>Sahel Women Empowerment and Demographic Dividend</i>
UNFPA	Agence des Nations-Unies pour la santé sexuelle et reproductive (<i>United nations population Fund</i>)
HIV	Human Immunodeficiency Virus WFME <i>World Federation for Medical Education</i>
W4H	<i>Working for Health</i> Programme

Abbreviations

Global Code of Practice	→	WHO Global Code of Practice for the International Recruitment of Health Personnel
High-Level Commission	→	High-Level Commission on Health Employment and the economic growth
Global strategy	→	Global strategy on human resources for health in Looking ahead to 2030

List of illustrations, figures and boxes

List of illustrations and figures

Figure 2: Density of healthcare personnel (dentists, nurses, doctors, pharmacists, midwives) per 10,000 inhabitants in 2020.....	24
Figure 3: Density of healthcare workers (dentists, nurses, doctors, pharmacists, midwives) per 10,000 people in 2020 by income group	27
Figure 4: The most dynamic sectors in France between 2019 and 2030 (reference scenario) according to DARES.	29
Figure 5: The fastest-growing occupations in France between 2019 and 2030, according to DARES	
Figure 6: Occupations with the greatest potential imbalances between vacancies and new arrivals in France (between 2019 and 2030, baseline scenario), according to DARES.....	30
Figure 7: Links between work environment and quality of care	37
Figure 10: Comparison between the density of healthcare professionals in the WHO African Region in 2018 per 10,000 people) and the theoretical density needed to achieve over 70% Universal Health Coverage.....	48
Figure 11: Ideal representation of professionals to achieve 70% UHC in the WHO African Region	50
Figure 15: Table of institutional and scientific events used in the study.....	126

List of boxes (to be completed)

Box 1. Minimum thresholds of healthcare professionals used in global health	26
Box 2. Existing classifications and lists of healthcare professions worldwide.....	41
Box 3. The creation of a new profession: the example of healthcare logisticians.....	48
Box 4. The origin of community health workers.....	56
Box 5: Integrating community health workers into the health system	57
Box 6. Setting up a public-private partnership in health education	68
Box 7: WHO guidelines for producing, attracting, recruiting and retaining health workers in rural and remote areas.....	69
Box 8. Oxfam's Survey Report on Financing Public-Private Partnerships in Healthcare	80
Box 9: TAPIC: a governance framework to strengthen decision-making and implementation	82
Box 10: An example of evidence-based cross-sector governance	86
Box 11: The role of civil society in direct care provision	94
Box 12: "Nothing for us, without us". The legacy of the fight against AIDS in community healthcare.....	97
Box 13. An example of family-friendly policy - paternity leave.....	101

Box 14. Mobile telephony for diabetes patients...	106
Box 15: How the Covid pandemic accelerated the use of digital healthcare tools	107
Box 16: Reforms proposed by the Lancet Commission	110
Box 17: An example of interprofessional education. Ghent University, Belgium.....	113
Box 18: Harnessing new technologies for medical training.....	115
Box 19: An example of an international agreement to facilitate the international mobility of healthcare professionals: the German "Triple Win" project	119

Foreword and thanks

Synthesizing knowledge about tomorrow's healthcare professions, highlighting major global trends and identifying concrete avenues for innovation is an ambitious goal. Not only is the field of study extremely vast (and even more so when we adopt a global perspective, as was the case for this study), but above all, the prospective approach requires us to distinguish between what is possible (due to the current or past dynamics we have been able to analyze) and what is desirable. The aim of this study is to take an analytical look at what already exists and at the major trends on the horizon, without making any explicit recommendations, which are the responsibility of the members of the think tank Global Health 2030. The aim here is not to take a prescriptive stance on the paths to be taken, or, on the contrary, to be avoided, but to document the current situation and provide a framework to better support stakeholders' thinking: how can we adapt or transform the organization and training of healthcare professionals to cope with the shortage of caregivers and the other challenges of tomorrow? It is therefore important to distinguish between this study, which was carried out in close collaboration with the members of the think tank Santé mondiale 2030, and the concrete recommendations put forward in another document by the think tank Santé mondiale 2030.

The study was carried out between February 2022 and October 2023, by Maelle de Seze, in collaboration with Stéphanie Tchiombiano and Héloïse Mahé, as part of a COPAR agreement between the think tank Santé mondiale 2030 and AFD. It was conducted from the Paris region, with remote interviews (via zoom) but also in person, in Paris and Geneva. After discussion with the AFD team, it was decided to focus on a specific geographical area (Africa), in order to build a coherent grid for understanding the local issues more specific to this zone, given the importance of the needs and the partnership links that exist in this region with players in France's official development assistance. Some of the results of this study were presented at an internal retreat for Agence Française de Développement and Expertise France teams on June 23, 2023.

A number of issues arose throughout the study: 1) the difficulty of finding data on healthcare professions beyond those of care professionals (doctors, nurses, midwives) in a healthcare system that is still all too often hospital-centric; 2) the challenges of translating different concepts from English to French (lifelong learning versus continuing education / field of practice versus task delegation, etc.); 3) the difficulty of obtaining data "in the field" and linked to operational aspects (security situation in Mali and Niger, poorly documented associative or government initiatives, professional anecdotes that are difficult to triangulate, etc.), 3) the difficulty of obtaining "field" data linked to operational aspects (security situation in Mali and Niger, poorly documented associative or governmental initiatives, professional anecdotes difficult to triangulate, etc.). The present study is far from exhaustive, and many questions could be the subject of future research to deepen the analysis.

We would like to thank the members of the think tank for their critical and constructive outlook, their support throughout the study and the richness of our exchanges. This study was largely fuelled by our collective discussions.

Thanks to everyone who took the time to participate in this study, including Jim Campbell and members of his department at WHO. Thanks to Perrine Bonvalet, who was our contact within the AFD team. Thanks to Zeinabou Niamé Daffé and Margaux Chavardès, to whom we owe all the original computer graphics for this study.

Executive summary

A focus on health professions allows us to examine the organization, training, careers and career paths of healthcare professionals within healthcare systems. The establishment of international initiatives dedicated to human resources for health over the past 20 years reflects a gradual, albeit insufficient, awareness of the centrality of healthcare professionals to the smooth operation of healthcare systems: *Global Health Workforce Alliance*, Kampala Declaration, Global Code of Practice, High Level Commission on Health Employment and Economic Growth, Global Strategy on Human Resources, etc.

Our ways of "doing healthcare" are set to change radically in the coming years, inevitably impacting the content, training and current organization of healthcare professions. This study, based on qualitative methods (interviews and literature synthesis), explores these issues and highlights the major current and future trends: how can we adapt or transform the organization and training of healthcare professionals to cope with the shortage of caregivers and the other challenges of tomorrow? What developments and innovations are possible (in particular to reorganize our healthcare systems and decompartmentalize the professions as they exist today)? How can we rethink training models for the healthcare professions to make these developments and innovations possible?

While the shortage and unequal distribution of healthcare professionals have regularly been put on the international agenda and remain key issues, the question of how healthcare professions are evolving is also crucial, given the emergence of new challenges:

- Demographic challenges (the need to respond to different needs, particularly those related to ageing populations);
- Technical challenges (development of new skills linked to new technologies: molecular biology, genetics, artificial intelligence, e-health, etc.);
- Health challenges (rise of certain diseases such as cancers, emerging infectious diseases, mental health problems, etc., which will require a new distribution of healthcare competencies)
- Environmental challenges (modifying healthcare systems so that they are better able to respond to natural disasters, the growing effects of climate change on health, monitoring zoonoses, etc.),
- Social challenges (aspirations for safer working conditions for healthcare professionals and less discriminatory healthcare systems)
- Geopolitical challenges (need to take into account the ever-increasing international mobility of healthcare professionals, against a backdrop of global shortages and highly uneven distribution)

The question of the insufficient number of healthcare professionals, extensively documented in the first part of the study, dedicated to recent dynamics and developments, is central. While WHO estimates point to an overall increase of 29% in the global number of healthcare workers between 2013 and 2020 - around three times greater than the increase in the world's population, which is 9.7% over the same period - we can still speak of a global shortage (in the sense that virtually every country is affected): there will be a shortfall of 10 million healthcare workers by 2030. Above all, the distribution of healthcare professionals is profoundly unequal. In 2020, high-income countries had a density of healthcare professionals 6.5 times higher than low-income countries, with less than five healthcare professionals per 10,000 inhabitants in Niger, Chad and the Central African Republic (when the minimum threshold set by the WHO is 50 healthcare professionals per 10,000 inhabitants).

In addition to the numbers involved, a number of recent trends and developments have emerged:

- The universal dimension of the issues at stake: the disinvestment of public hospitals, increased resignation movements and the growing number of medical deserts affect almost every country in the world.
- The structural under-funding of training and jobs for healthcare professionals is all the more astonishing given that the Covid crisis has demonstrated their central role in the smooth running of societies. Investment in health is seen as a cost, not an investment, despite health's potential multiplier effect on economic growth, social cohesion and health security. ILO estimates suggest that every healthcare professional job created generates 2.3 jobs in non-health professions (with

- variations between regions). Healthcare will account for around 10% of global GDP in 2023, and despite the scale of unmet needs, should be the fastest-growing economic sector between now and 2030 (+13% in France, for example).
- In recent years, there has been a growing awareness of the importance of working conditions, of the need to "take care of caregivers", and of the need to make healthcare professions more attractive (security, higher salaries, better work-life balance), even if this awareness is not sufficiently translated into concrete action.
 - The increasing visibility of all healthcare professions, too often summed up in terms of care professions (and among these, the triptych "doctor/nurse/midwife"), with a gradual recognition of :
 - public health professions (prevention, health promotion, epidemiology, etc.),
 - specific professions in the humanitarian sector (emergencies, health and environmental crisis management, refugees, conflicts),
 - evolving professions, such as advanced practice nurses, digital health specialists, health logisticians, laboratory technicians, community health workers and health mediators, who are struggling to be effectively recognized as members of healthcare systems.

While these trends are valid on a global scale, African countries are bearing the brunt of the crisis in healthcare professionals. A number of particularities emerge, highlighted in the second part of the study.

- The gaps are widening: the WHO's Africa region, which accounted for a quarter of the global shortage of healthcare workers in 2013, is expected to account for **52% of the global shortage in 2030**.
- The number of healthcare professionals currently in post is well below all the minimum thresholds calculated for proper health coverage of populations and satisfactory access to care. The **density of healthcare personnel** in the countries of the WHO African region is **exceptionally low**, estimated at 2.9 per 1,000 inhabitants in 2021, whereas the minimum threshold for achieving 70% universal health coverage (UHC) is estimated at 13.4 per 1,000 inhabitants. At the very least, the number of healthcare professionals working in the region would have to be quadrupled. What's more, this average masks major differences between countries: in 2018, a quarter of the region's healthcare professionals were working in Nigeria, 13% in South Africa and 9% in Algeria, while five of the 47 countries surveyed (Benin, Madagascar, Niger, Central African Republic and Chad) had fewer than 0.5 healthcare professionals per 1,000 inhabitants.
- **Community health workers** are the subject of much debate, particularly with regard to their professionalization and integration into healthcare systems. Given the diversity of their status and the lack of formal recognition of this function in a large number of countries, it is difficult to obtain reliable data. However, a large part of the scientific literature considers them to be a response to the shortage, with great potential for improving the health of populations in Sub-Saharan Africa, while stressing the importance of the selection process and the need to provide them with appropriate training and decent working conditions.
- A central issue is **the lack of fiscal space** available to African governments to create jobs. In African countries, the healthcare sector is generally considered to be labor-intensive and therefore unproductive, and not a priority over other sectors when it comes to financial trade-offs. The very low number of positions leads to a **"paradoxical surplus" phenomenon**: trained health professionals are not integrated into health systems, while needs are far from being met, due to the financial inability of governments to "absorb" them into the health system. As a result, almost a quarter of the healthcare professionals trained by 2030 are likely to be unemployed and, paradoxically, constitute a surplus within this striking shortage.
- The question of **training quality, which is** very uneven across the continent, is also a key issue, not least because of the absence of quality regulation mechanisms in some countries (the proliferation of private schools with no control over the quality of the knowledge and skills acquired can be a problem). Significant progress has been made, with over 80% of countries

- have set up an accreditation system (aiming for 100% by 2030), even if the presence of an accreditation system is not sufficient to certify its operationality and reliability.
- Despite the implementation of **retention strategies to attract and retain healthcare professionals in rural and remote areas**, the situation remains highly problematic: over 80% of the inhabitants in these areas still have no access to essential healthcare services. While financial incentives (salary increases, bonuses, tax or tuition fee exemptions, etc.) remain the most common strategy, many interventions are aimed at improving the living and working conditions of healthcare professionals in rural areas (setting up professional networks to break isolation, creating housing, improving access to electricity and water, drawing up career plans, rehabilitating health infrastructures and medical equipment, etc.). Studies clearly show that it is necessary to implement combinations of joint interventions (financial and non-financial) to have a real impact in the medium term. Implementing training establishments in rural areas is also a strategy that pays off, provided they are sufficiently endowed with funding, equipment and quality teachers.
 - **The development of the private sector, which is constantly on the increase** in African countries, is proving to be **both a major opportunity and, if not properly managed, a risk** for healthcare systems. It accounts for some 45% of the region's training establishments. Country case studies suggest that the rapid and uncontrolled expansion of private-sector education of healthcare professionals could lead to a perceived decline in the quality of training, without filling labor shortages.
 - One of today's major challenges is to strengthen governance and management mechanisms for healthcare professionals. Out of 47 African countries surveyed in 2022, only 32 had national strategic plans dedicated to Human Resources for Health in 2022. This report highlights several concrete operational challenges:
 - At a local level, the low density of healthcare managers often leads to a feeling of loneliness and isolation among healthcare professionals, particularly in rural and remote areas. Teamwork and the ability to refer a patient to a colleague in the event of difficulty are essential to the smooth running of healthcare systems.
 - Regular documentation of the workforce, which remains haphazard, despite the clear progress made in recent years. Some countries still do not have digital information systems on these issues, and continue to manage information on paper registers.
 - The relative weakness of technical and political leadership related to these issues: although many units have been created over the last 15 years in ministries of health, the teams are not always well equipped technically to understand the dynamics in detail and implement the most appropriate strategies.

What are the major areas of change in the healthcare professions over the coming years? Eight major trends or highlights emerge from the third part of the study.

1- Dynamics at work within healthcare systems, transforming healthcare professions

:

- a. Decompartmentalization and despecialization, questioning, for example, the boundary between healthcare and social professions, which is becoming progressively blurred.
- b. Challenging the hospital-centric model, towards a much more holistic, preventive and person-centric vision of healthcare.
- c. Evolving fields of practice and the emergence of new "intermediary" professions to coordinate the work of different healthcare professionals, or new hybrid professions (advanced practice nurses, healthcare logisticians, caregiver-technicians, etc.).

Cross-disciplinary professions dedicated to public health, health promotion, the organization of healthcare systems and the occupational health of healthcare professionals (public health and environmental professionals, executives and managers, for example) should play an increasingly important role.

- We will need to find the right balance between the various healthcare professions (*skill-mix*).
- 2- **The increasingly recognized role of civil society and community players**, particularly in reaching the most precarious and marginalized populations: the central role of caregivers, health mediators and community health workers, with all the challenges of training, professionalization and institutional recognition that this poses. An important point to emerge from the study is the gradual empowerment of patients themselves in their own health (self-diagnosis, self-administration of treatment, etc.), which implies a corollary change in the role of healthcare professionals.
 - 3- **The persistence of gender inequalities and the need for greater recognition of the key role played by women in the healthcare professions:**
 - a. Under-valued contribution: women devote between 2 and 10 times more time to unpaid care of the elderly, sick or disabled than men, depending on the country. Studies show that almost half of their contribution is in fact unpaid and unrecognized.
 - b. Gender-based occupational segregation, which confines women to jobs that are less well-paid and less valued by society, with increased risks of sexual harassment and verbal and physical abuse.
 - c. Pay inequalities: a study carried out in 2022 in high- and middle-income countries shows an overall pay gap of more than 25% between men and women, which is greater in the healthcare sector than in other economic sectors .
 - d. Less participation in decision-making bodies: women account for 70% of healthcare professionals worldwide, but occupy on average only 25% of managerial posts, 25% of ministerial posts and 30% of managerial posts in international organizations dedicated to health, according to Global Health 50/50.
 - 4- **Recognition of the extent of discrimination and its impact on the health of those who suffer it.** This discrimination is often unconscious, especially as healthcare professionals have often chosen their professions out of concern for others and their fragility. Nevertheless, they do exist, and a number of studies show that care is differentiated according to ethno-racial categories or sexual preferences, in all geographical areas and at all stages of life. Numerous strategies exist (integration of dedicated modules into training curricula, promotion of diversity among healthcare professionals, etc.), but their implementation is slow and far from systematic.
 - 5- The idea of professions that will, in the years to come, be in constant evolution, **due to scientific and technological advances** (digital health, biotechnological advances, artificial intelligence, *Machine Learning*, genomic medicine, *Big Data*, etc.), with all the ethical and organizational questions that this poses for the healthcare professions: impact on patient relations, repercussions on diagnoses, treatment choices and methods, modification of care coordination due to the centralization of medical data, etc. The integration of digital tools and new technologies in the healthcare sector is therefore not simply a question of technical change. It requires complex changes in human attitudes and skills, as well as in the organization of work and the legal and financial frameworks that structure it. The study highlights a number of points for attention: the conditions for transferring new technologies to poorer countries, the need to inform professionals and patients so that they have confidence in these advances, and the importance of ongoing, regular training for healthcare professionals throughout their careers, so that they can gradually integrate these technological advances into their professional practices (or accept that these new tasks be delegated to new, ad hoc professions).
 - 6- The **need to adapt training** to new challenges, with four main dimensions emerging from our study: 1) the adoption of curricula based on a skills rationale, rather than a "trades" rationale, with greater flexibility in careers and easier resumption of study and reorientation, 2) the promotion of inter- and trans-professional education that breaks down professional silos and fights against the "silos" of the professions, and 3) the development of a "skills-based" approach to training.

- 3) harnessing the power of information technology for learning (distance learning platforms, computer-assisted learning, digital assistants, simulations, etc.). In particular, these new technologies will enable the expansion of online and distance learning opportunities in both high-income and low-income countries, reaching more students while combating medical deserts. Hybrid" or "co-modal" modalities will be needed to organize practical internships (including in rural and remote areas) as a complement to distance acquisition of theoretical knowledge. And 4) the importance of "despecialization" and the reintroduction of primary health care into training curricula to meet the needs and expectations of populations, in a logic of Accountability and health democracy.
- 7- The **growing international mobility of healthcare professionals**. According to the OECD, one in six doctors practicing in OECD countries studied abroad, and the number of foreign-born doctors and nurses rose by 20% in the 2010s, compared to the previous decade. These mobilities must be taken into account in national forecasts in terms of training and job creation (with the possibility of introducing compensatory mechanisms if certain states massively train professionals employed by other states). They must also be considered at the level of health structures and individuals, to ensure that there is equivalence in working and employment conditions for all health professionals. While measures have been taken at international level to regulate this mobility and prevent it from having too negative an impact on certain countries (global code of practice, list of countries considered particularly vulnerable, etc.), this fundamental trend is bound to have repercussions on the scope and training of tomorrow's professions.
- 8- Finally, the **growing recognition of the links between human health, animal health and the environment, which** should lead to: 1) the creation of new training courses in environmental health, 2) more collaborative and interdisciplinary practices, 3) an upsurge in certain existing professions (epidemiology, toxicology, biology, demography, health economics, health geography, health sociology in particular) and 4) the emergence of new skills linked to the "decarbonization of healthcare systems".

Introduction

Looking ahead to the healthcare professions of tomorrow requires a number of definitions. While it is generally accepted that the definition of health goes beyond the absence of ^{disease1}, it is also very common to see a semantic shift from healthcare professions to care professions. In this report, we use the term "**healthcare professionals**" to refer to those professions required for the proper functioning of the healthcare system as a whole. We use the term "care professionals" to refer specifically to those professions involved in the delivery of care. The notion of "healthcare personnel", used by the WHO to translate the expression "*health workforce*", may refer to caregivers only, or to all healthcare ^{professionals2}.

A few examples of healthcare professions

In this study, healthcare professions refer to all the professions required for the proper functioning of a healthcare system, including its care system. We'll be looking at caregivers, whether they work in hospitals, outpatient clinics, at home or remotely (with the development of telemedicine), as well as jobs in the drugs and healthcare products industry (including, for example, biomedical engineers and machine maintenance technicians), hospital management or the management of healthcare professionals.

Other professions not specific to the healthcare sector are also needed, such as logistics or transport in the drug supply chain, organizational services for healthcare facilities (cleaning, catering, security, patient transport, etc.), waste treatment channels, and all the digital professions linked to the maintenance and development of Healthcare Information Systems (HIS) or the development of digital healthcare.

As for the healthcare professions, which play a role beyond the healthcare ^{system3}, we can mention, for example, social professions designed to improve people's health (in particular *care* professions), community health workers, health mediators, professions in health promotion, prevention and public health, but also health researchers and professions in health governance, the design and evaluation of healthcare policies.

The aim here is not to be exhaustive on all these aspects, but rather to state as a preamble that meeting tomorrow's healthcare challenges will require taking the global definition of healthcare seriously, and adopting a more inclusive approach to defining healthcare professions.

Tomorrow: the importance of looking beyond 2030

At a time when the international community is taking mid-term stock of the Sustainable Development Goals (SDGs), it's not easy to project beyond 2030. Indeed, most recent scientific or institutional estimates in global health and the bulk of modeling and projection efforts on healthcare professionals have a "2030 horizon". However, in a report on the healthcare professions of tomorrow, it is important to look beyond this 2030 horizon, as training a medical specialist can take more than a decade. Thinking differently about the organization of healthcare professionals and the healthcare system, or about training for the healthcare professions, in order to better meet the challenges of the years ahead, implies a long-term vision. There are many changes and innovations to be implemented today, some of which will have an impact in the years to come, others in more than a decade. We have therefore opted for a "2040 perspective" for the purposes of this report.

¹ The preamble to the WHO Constitution defines health as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity". See: <https://www.who.int/fr/about/governance/constitution>, consulted on 02/02/2023.

² The health workforce is defined by the WHO in its "World Health Report 2006: Working together for health" as "all people engaged in activities whose primary purpose is to improve health" (1). Human resources for health are defined as "the various types of clinical and non-clinical personnel responsible for carrying out public and individual health interventions" (WHO, World Health Report, 2000). Human resources are also "an organizational function that deals with personnel and related issues such as remuneration, recruitment, performance management and training" (2).

³ Some of the professions mentioned here can be both perfectly integrated into the care system and, at the same time, go beyond it. Thus, for example, community health workers can accompany users to care, encourage anchoring, support therapeutic education, and so on.

We can't say with any certainty which new healthcare professions will exist in ten or twenty years' time, or which will have become obsolete on a global ^{scale}⁴. The ambition of this report is to highlight the major transformations in tomorrow's healthcare professions: the main trends and developments in healthcare systems that can be expected in the coming years, and which will have an impact on these professions. What new professions are needed to meet current and future challenges? What are the implications for the creation of a new healthcare profession (training, regulation, creation of new jobs, etc.)? What changes are needed in terms of training for tomorrow's healthcare professions? How can we rethink the organization of healthcare professions to meet the challenges of tomorrow? Using concrete examples, we'll illustrate what we mean by tomorrow's healthcare professions: new professions, changes in the scope of practice of existing professions, changes in demand for certain professions, current or future shortages in other professions, etc.

This study of tomorrow's healthcare professions is part of a broader context of international research, recommendations, planning and public policy on human resources for health (HRH). In this introduction, we will very briefly review the history of the main global initiatives concerning HHR, in order to better understand the current issues (section 1 of the introduction: General context). We will then present the main challenges facing tomorrow's healthcare professions (section 2: Study context), as well as the research objectives and questions (section 3) and the chosen methodology (section 4).

The results will then be presented in three parts: recent dynamics and developments in the healthcare professions worldwide (Part 1); the specific challenges facing African countries, a continent particularly marked by a shortage of healthcare ^{professionals}⁵ (Part 2); and the main trends for the future, with suggestions on how to tackle them (Part 3).

1. Context

1.1 Background: a brief history of international initiatives related to the healthcare professions

Historically, the question of healthcare professions has been approached from the angle of human resources for health (HRH)⁶, with one central issue: the minimum threshold of healthcare professionals per inhabitant. The WHO's annual global report published in 2006, entitled "**Working together for health**" (1), estimated that 2.28 healthcare professionals were needed for every 1,000 ^{people}⁷. This figure, which became the benchmark until 2016, took into account three healthcare professions: ^{nurses}⁸, midwives and doctors. In 2006, the WHO estimated that there was a shortfall of 4.3 million healthcare professionals in these three professions worldwide.

The 2006 WHO World Report also laid the foundations for the major challenges facing the health workforce: 1) the need for public decision-makers to have reliable information about current health workers; 2) the importance of investing in education, training and lifelong learning; 3) the need to take into account the match between a professional's knowledge and skills and the tasks required of him or her; 5) policies for managing migratory flows of health professionals; 6) the importance of creating gateways for health workers;

⁴All the more so as certain emerging trades in certain regional or national contexts may prove unsuitable in others, just as other trades that are obsolete in some contexts may still be relevant elsewhere.

⁵In this study, reference will be made to the 47 countries of the WHO Africa Office, which can be consulted here: <https://www.afro.who.int/fr/about-us>.

⁶The term is a direct translation of "*human resources for health*" (HRH), and is often preferred in French to "*professionnels de santé*".

⁷The estimate of 2.28 skilled healthcare professionals per 1,000 inhabitants was calculated to achieve 80% coverage of births attended by healthcare personnel in a given population ("*skilled birth attendance*").

⁸All trade names in the document are in the masculine plural by convention. The aim is not to make women invisible, whether they are in the minority or the majority in these professions, but to avoid clichés that would designate certain professions as feminine and others as masculine. All healthcare professions can and do involve both men and women.

7)the need to increase financial investment in HHR (in order to provide more training and better remuneration for healthcare workers) (3). Nearly twenty years on, these issues remain relevant.

In the years that followed, several initiatives were set up specifically for healthcare professionals worldwide.

BOX 1 - LIST OF MAJOR INTERNATIONAL EVENTS RELATED TO HEALTHCARE PROFESSIONALS

- 2006: Foundation of **the Global Health Workforce Alliance** (GHWA) within the WHO, to seek solutions to the shortage of health professionals in the **world**. (particularly in the 57 countries where these shortages were greatest - including 36 countries in sub-Saharan Africa).
- 2008: Organization of the 1st Global Forum on Human Resources for Health⁹ to bring together stakeholders, raise the profile of the issue and take action. commitments for member and participating countries. This first global forum was marked by the **Kampala Declaration** (4).
- 2010: Adoption by the 63rd World Health Assembly (WHA) of the **Global Code of Practice** for the international recruitment of healthcare personnel (8).
- 2013: Publication of the report "*A Universal Truth: No Health Without A Workforce*" by the health workforce department of WHO and GHWA (5): highlighting common issues that go beyond specific regional or national contexts, as well as potential solutions that can be transferred and adapted to different contexts.
- 2016: **High-level commission** on healthcare employment and economic growth (7). In particular, the commission's work highlighted the economic importance of the sector of health, and to convey a strong message: investing in the health workforce - in training and job creation - is not a net expense but, on the contrary, a factor of economic growth¹⁰. The High Level Commission's recommendations have focused the international community's efforts on the health workforce to date. Following the presentation of the High Level Commission's findings, health employment was considered a global public good, and health was placed on the G20 agenda, on the theme of Universal Health Coverage (UHC), which gave rise to the Berlin Declaration, adopted by the health ministers of the member countries.
- 2016 : Adoption by the 69th World Health Assembly of the **Global Strategy on Human Resources for Health to 2030** (11,12)
- 2016 : The *Global Health Workforce Alliance* becomes the **Global Health Workforce Network**. The aim is to support the new global dynamic in favor of healthcare professions by 2030, in the wake of the High-Level Commission, drawing on its recommendations and the Global Strategy.

⁹To date, there have been five Global Forums on Human Resources for Health: in 2008 in Kampala, Uganda, resulting in the Kampala Declaration (4); in 2011 in Bangkok, Thailand; in 2013 in Recife, Brazil, resulting in the Recife Political Declaration on Human Resources for Health and the publication by WHO and GHWA of the report: "*A Universal Truth: No Health Without A Workforce*" (5); in 2017 in Dublin, Ireland, the opportunity to present the Global Strategy on Human Resources for Health to 2030 (6) and the results of the High-Level Commission on Health Employment and Economic Growth (7); and in 2023 in Geneva and online.

¹⁰The belief - often referred to as the "Bowmol effect" - that doctors are "prescribers of public expenditure", and that funding the training and employment of healthcare personnel would be a gross loss for governments, has long undermined the efforts of Ministries of Health to obtain greater investment in healthcare professions from Ministries of Economy and Finance. The work of the High Level Commission on Health Employment and Economic Growth has shown unequivocally that there is no Bowmol effect, and that investment in health professionals improves the health of populations, while having positive knock-on effects on countries' economies (9): "*The health sector is an important source of employment; in most regions, employment growth rates in the health sector are higher than in other sectors. The healthcare and social sectors together accounted for more than 105 million jobs worldwide in 2013, 130 million in 2018 and, according to estimates, this figure will reach 136 million in 2020*" (10).

- 2017 : WHO adopts the joint program with the ILO and OECD "**Working for Health**" (W4H)¹¹ and creates several platforms on specific topics: the platform for gender equity (*Gender Equity Hub*), the *Education Hub* (*Education Hub*), the Community Health Worker (CHW) platform, etc.
- 2020 : Publication of the report "**Digital education for building health workforce capacity**" (15)
- 2021: Inauguration of the **WHO Academy** in Lyon
- 2021: *International Year of Health and Care Workers* and publication of the WHO/ILO report "**Caring for Caregivers**" (16) and the WHO report: "WHO Guidelines for the Health and Care of Workers" (17).
the development, attraction, recruitment and retention of healthcare personnel in rural and remote areas" (17,18).
- 2022 : Adoption of the "**Working for Health 2022-2030 Action Plan**" (19) at the 75th World Health Assembly¹²
- 2023: 5th **Global Forum on Human Resources for Health** (Geneva, Switzerland)¹³

1.2 Context of the study: shortage and unequal distribution of health human resources to meet tomorrow's healthcare challenges

Tomorrow's healthcare professions: what recent dynamics for what future developments? Healthcare professions, healthcare personnel and Human Resources for Health (HRH) are **three interrelated themes**, equally linked to the major developments in healthcare systems and global healthcare institutions. Nevertheless, the scope of knowledge, research and studies on healthcare personnel and HRH extends beyond the issue of healthcare professions. We have therefore selected the aspects that we felt were essential to consider for tomorrow, keeping the specific issue of healthcare professions as our angle of approach: types of professions, the organization of professions among themselves, the working conditions of healthcare professionals who practice - or will practice - these professions, the number of healthcare professionals to be trained for tomorrow, and the types of training in healthcare professions to be developed or implemented¹⁴. Each section of Parts 1, 2 and 3 of the report refers to an aspect with a direct impact on tomorrow's healthcare professions, and we have taken care to make this link explicit.

The **prospective dimension** of this report is implemented in two ways. On the one hand, projection into the years ahead (to around 2040) played an important role in the conduct of the interviews. By cross-checking the information gathered during these interviews with data collected by attending numerous institutional and scientific events throughout the study period, we were able to identify the dynamics underway for tomorrow's healthcare professions, which are set to continue in the years to come. On the other hand, most of the sources used in writing the report are recent (2015-2023)¹⁵. The choice of using mainly institutional reports and scientific articles published in recent years can be explained in three ways. It allows us to describe recent developments and knowledge that will have an impact on tomorrow's healthcare professions. It also adds new knowledge to that already analyzed by the High Level Commission and taken into account in the writing of the 2016 Global Strategy. Lastly, the Covid- 19 epidemic has triggered major recent developments in the healthcare professions (in terms of the visibility of healthcare professionals, the need to improve their working conditions and safety at work, or health training and remote consultations, for example), and we are

¹¹ See: "*Working for Health. Five-year action plan for health employment and inclusive economic growth (2017-2021)*". Geneva: World Health Organization; 2018 (13) See also: "*Working for health: a review of the relevance and effectiveness of the five-year action plan for health employment and inclusive economic growth (2017-2021) and ILO-OECD-WHO Working for Health programme*", 2021. (14)

¹² "*Global Strategy on Human Resources for Health: Workforce 2030: Reporting at Seventy-fifth World Health Assembly*". Available at the following link: <https://www.who.int/news/item/02-06-2022-global-strategy-on-human-resources-for-health--workforce-2030>, accessed 05/10/2022.

¹³ See: <https://www.who.int/news-room/events/detail/2023/04/03/default-calendar/fifth-global-forum-on-human-resources-for-health>, consulted on 02/12/2022.

See also: <https://www.who.int/teams/health-workforce/about/5thglobalforum-hrh>, consulted on 02/12/2022.

¹⁴ The "training" aspect is essential if we are to plan ahead, as we are training tomorrow's healthcare professionals today, and is therefore one of the levers for action that can be taken immediately. Developing or transforming healthcare training today will have a definite impact on tomorrow's practices.

¹⁵ If we sometimes mention older works, it's mainly to show the historical dimension of certain themes that are still relevant today, to give the reader the elements needed to follow developments and know the main references linked to each theme.

seemed essential to give pride of place in this report to the most recent works that take these developments into account.

As the **geographical scope of the study** is not limited (all countries, with a focus on sub-Saharan African countries for Part 2), we have used concrete and specific examples from all regions. In this way, we hope to decompartmentalize possible solutions and allow for greater exchange and horizontality in the way we approach the challenges linked to healthcare professions, whether they arise in Low and Middle Income Countries (LMICs) or High Income Countries (HICs)¹⁶. We have also taken care to give an important place to the field of research on healthcare policies and systems (in relation to healthcare professions) and to that on the working and living conditions of healthcare professionals, as these aspects have a major impact on healthcare professions but are often ignored when we are interested in the quality of a healthcare system¹⁷ (20).

The main challenges facing healthcare professionals

Tomorrow's healthcare professionals will have to deal with a number of **health problems**, some of them emerging (such as the recent example of Covid-19), others older but gaining in importance in certain regions (such as the number of cancer cases to come in sub-Saharan Africa, for example), or still on the increase on a global scale (mental health, trauma linked to natural disasters or forced migration, etc.). We need to consider the healthcare professions, and the workforce to be trained for each profession, in relation to the main diseases to be managed in the years to come (around 2040). The *skill-mix* (mix of skills required and balance between the number of healthcare professionals to be trained for each profession) must vary according to the issues facing each region or country.

Changes in practices, knowledge, know-how and interpersonal skills in the various healthcare professions will also need to adapt to a number of **societal challenges**. Here, we refer to "societal challenges" as either problems that have an impact on the health of populations, but which go beyond health issues (such as the effects of climate change or aging populations, for example), or societal aspirations that will also affect healthcare professionals (such as the reduction of gender inequalities or structural racism).

While there is a great deal of uncertainty surrounding tomorrow's challenges (new diseases may emerge, for example, or new health problems may be caused locally or regionally by climatic disasters), we already need to adapt our healthcare professions to respond as effectively as possible to the challenges we already face. For the purposes of this report, we have considered the following aspects:

- Key health challenges that will become more acute in the coming years:
 - Endemic and emerging infectious diseases
 - Non-communicable¹⁸ diseases (cancer, diabetes, mental health, morbidity and mortality due to accidents or violence, etc.).

¹⁶ This is not to say that these solutions should not be adapted to national or local contexts, but rather that solutions that have worked in PRFIs can inspire PREs, and vice-versa. In particular, when it comes to healthcare professionals, the situations and difficulties encountered are very similar in very different contexts. The solutions in response can therefore also be similar, even if it is always necessary to adapt and negotiate them on a national or local scale.

¹⁷ "Health workers' identities and motivation, daily routines and negotiations, and training and working environments are at the center of successes and failures of health interventions, health system functioning and broader social development. Further, in an increasingly complex globalised economy, the expansion of the health sector as an arena for employment and the liberalisation of labour markets has contributed to the unprecedented movement of health workers, many or most of whom are women, not only between public and private health sectors, but also across borders. Yet, these political, human development and labour market realities are often set aside or elided altogether. Health workers' lives and livelihoods, their contributions and commitments, and their individual and collective agency are ignored." (20)

¹⁸ A significant proportion (estimated at 20% or 25%) of cancer cases in PRFIs (and particularly in sub-Saharan Africa) are due to infectious diseases (e.g. liver cancers, cervical cancers, stomach cancers, "AIDS-classifying" cancers, etc.). The "non-communicable" category was created in opposition to the "infectious diseases" category, as prevention and management techniques are often very different between infectious and chronic diseases. These categories are still used in global health, but are called into question in practice (HIV, for example, is an infectious and chronic disease, as is the hepatitis B virus, while several cancers, including cervical cancer, are not transmissible but are caused by a virus (human papilloma virus) which is).

- Double burden for low-income countries, whose populations are affected by both Group 1 diseases (infectious diseases, malnutrition, high maternal-infant mortality) and Group 2 diseases (non-communicable diseases, cancer, etc.).
- Care for crisis victims (natural disasters or conflicts) and refugees

- The main challenges and aspirations of society that will have an impact on the healthcare professions :
 - Aging populations and changing healthcare needs
 - Growing inequalities: aspirations towards greater gender equity, diversity, inclusion, etc.
 - Scientific and technological innovations (molecular biology, genetics, e-health, telemedicine, artificial intelligence, etc.)
 - Migration of healthcare professionals (opportunities and challenges)
 - One Health¹⁹ approach (environmental health, zoonoses, antibiotic resistance) and climate change

¹⁹ Aspects linked to environmental health, zoonoses or antibiotic resistance can also be considered as health challenges, but this report considers the One Health approach as such to be a social aspiration: the desire to take into account human health, animal health and the environment in a combined way.

2. Study objectives and research questions

2.1 Study objectives

Objective 1: Synthesize knowledge about tomorrow's healthcare professions and highlight major global trends

The first objective of this study is to synthesize knowledge about tomorrow's healthcare professions, with a specific focus on recent publications: those following the High-Level Commission on Health Employment and Economic Growth, the Global Strategy on Human Resources for Health to 2030, and those produced in the wake of the Covid-19 epidemic.

The aim is to take stock of the scientific and grey literature on tomorrow's healthcare professions, i.e. prospective studies on human resources in healthcare, and estimates of the need and demand for healthcare professionals in the coming years, analyses of healthcare labor markets, in order to estimate current training needs for healthcare professionals, as well as any new initiatives and attempts at innovation that have been documented, with their advantages and limitations, and which could help to meet the current and future shortage of healthcare professionals, particularly in PRFIs.

Several major works by the WHO, ILO and OECD published in 2016-2017 have already taken stock of knowledge on the subject up to the mid-2010s, in particular the work of the High Level Commission and the preparatory work for the Global Strategy to 2030 published in 2016 and 2017. The aim here is not to redo work that has already been done, but rather to highlight the major advances and publications of recent years and the major trends emerging for the healthcare professions in the years ahead.

The Covid-19 epidemic, for example, has highlighted (often in tragic situations) the crucial role of healthcare professionals, and the difficult and increasingly unattractive working conditions of caregivers in many countries (including ERP). In recent years, the WHO, the World Health Assembly and the international global health community have stressed the importance of We need to "take care of the caregivers" (a recurring expression²⁰ referring, among other things, to the difficult working conditions that worsened during the pandemic) to ensure the quality of care, but also to prevent caregivers from resigning and moving into other sectors, thereby exacerbating the current shortage of healthcare professionals.

This summary of the literature will identify the major recent trends at global level, useful for projecting into the years to come, and provide food for thought on the many topics covered (medical deserts and retention in rural and remote areas, attractiveness of professions, digital health, migration of healthcare professionals, etc.).

Objective 2: Analyze case studies, pilot projects and attempts at innovation in French-speaking Africa

The second objective of the study is to look at innovations tested in the field to cope with a shortage of human resources in health care, or to adapt to a particular health problem or epidemiological change, with the opening up of new care programs involving new health care professions.

This may involve specific cases of task delegation or cooperation protocols, specialization processes (such as advanced practice nurses - APRNs - in France) or the acquisition of new prerogatives (such as midwives empowered to monitor pregnancies). They may also involve new training courses and new professions²¹.

²⁰This expression can be found, for example, in a 2021 WHO publication on the occupational health of caregivers (16), in the title of recommendation WHA74.14 adopted by the World Health Assembly in 2021: "*Protecting, safeguarding, and investing in the health and care workforce*" and in the theme of the 5th Global Forum on HRH to be held in April 2023 (see: <https://www.who.int/news/item/12-04-2022-save-the-date--fifth-global-forum-on-human-resources-for-health>).

²¹Such as health extension workers in Ethiopia, surgical technicians in Mozambique, medical assistants in the USA, etc.

We will use literature where available, as well as interviews with experts on these subjects (a mission to Geneva was organized for this purpose), to understand what works and could be replicated, but also the limits of these initiatives.

2.2 Research questions

Main research question: What changes and innovations are possible in the organization of healthcare professions to meet tomorrow's healthcare challenges?

The aim is to explore ways of decompartmentalizing the roles of caregivers and non-clinical healthcare professionals, in order to bring healthcare systems closer to communities, create more bridges between healthcare professions (e.g., by creating **new professions** or more opportunities for career development, more bridges between careers and statuses) and better deal with the shortage of caregivers and the unequal distribution of healthcare professionals (delegation of tasks, links with social professions, etc.), with a particular focus on the role of the private sector.

Secondary research question: How can we rethink healthcare training models to make these changes and innovations possible?

The question of training for tomorrow's healthcare professions is crucial, whether it's **initial training** (to create new healthcare professions, it's necessary to create appropriate courses of study and training, for example), **continuing education or "lifelong" training** (an essential field in the healthcare sector, as knowledge and techniques are evolving very rapidly), or **distance learning** (an increasingly widespread possibility for training healthcare professionals in rural or remote areas at low cost, but which requires special supervision as access to knowledge does not guarantee the acquisition of skills and the appropriation of knowledge). For example, what role will the **WHO Academy** play in training for tomorrow's healthcare professions? This new organization (still under construction) seems to be mainly dedicated to "lifelong learning".

The two research questions presented above are complementary: it seems difficult to envisage transformations or organizational developments in tomorrow's healthcare professions without also developing training systems. Nonetheless, we felt it appropriate to distinguish between these two lines of research: the first focuses on possible changes in the organization of healthcare professions, with a view to decompartmentalizing the care professions and enabling more bridges between healthcare professions and the status of healthcare professionals; the second focuses on issues linked to training for healthcare professions (initial training, lifelong learning and distance learning).

3. Methodology

In order to answer the research questions and achieve our objectives, we used three methods typical of qualitative social science studies: documentary analysis (scientific literature, grey literature, newspaper articles and any other relevant document or medium such as videos - institutional or retransmission of scientific or institutional events -, websites, etc.); semi-structured interviews with key players (26 semi-structured interviews were organized); and observations at political or scientific events related to the theme of the study. Details of the methodology are provided in the appendix.

Part 1. Dynamics and recent developments in healthcare professions worldwide

From a global health institutional point of view, the issue of the shortage of healthcare professionals has been regularly placed on the political agenda since ²⁰⁰⁶²². Thus, as early as 2013, the report of the WHO *Global Health Workforce Alliance (GHWA)* was entitled:

"A Universal Truth: No Health Without A Workforce" (5,21). This report, published on the occasion of the third Global Forum on Human Resources for ^{Health}²³, sought to call attention to the **importance of health professionals for the proper functioning of all health systems**. The aim was also to launch a drive to train more health professionals and create jobs in WHO member countries, in order to respond at national level to the shortage issues that were already becoming widespread.

A decade later, the Covid-19 epidemic highlighted the worldwide importance of certain professions to the smooth running of our societies. The health professions were immediately recognized as **essential**. The first months of the epidemic, in particular, placed severe constraints on several healthcare systems. Beds had to be found, decisions had to be made to de-prioritize certain operations deemed less urgent, staff had to be recruited urgently, working hours had to be extended, retirees and students at the end of their training had to be called in, and so ^{on}²⁴.

As a result of these constraints, many caregivers, whether in hospitals or outpatient clinics, have had to cope with a major deterioration in their working conditions, and a lack of equipment, particularly suitable personal protective equipment (PPE). Finally, the mental health of caregivers under acute stress and their increased exposure to health risks were often overlooked. While some of these constraints were specific to the circumstances of the epidemic, this period was also an opportunity for caregivers to express to the media or political representatives the problems they encountered on a daily basis. In the French media, for example, in the months and years following the start of the Covid-19 epidemic, there were numerous articles on the lack of resources for healthcare workers, and the shortage of healthcare ^{workers}²⁵.

The first section of this part echoes this impression of shortage. **Putting the scale of the global shortage into perspective with the different regional situations** leads to a better understanding of the way in which the various estimates of the number of healthcare professionals in post in the different countries are calculated, but also of the minimum thresholds that make it possible to measure the efforts to be made in the decades to come.

In addition, two themes were particularly recurrent in newspaper articles on healthcare professionals in 2022 in France: the "hospital crisis" (particularly in emergency services) and "medical deserts". In both cases, these are issues that existed before the Covid-19 epidemic, but the epidemic seems to have aggravated the situation to the point of leading many healthcare professionals to resign, in ^{France}²⁶ and around the world. If this "big resignation" phenomenon continues, particularly in the healthcare sector, it could further exacerbate the shortages of healthcare professionals that already exist in various countries.

In the second section of Part 1, we describe a relatively recent dynamic of great importance for the healthcare professions and the way they are practiced: the recognition of **the importance of caregivers' working conditions**. In the wake of the Covid-19 epidemic, complaints about poor working conditions have multiplied, particularly in hospitals, but also in private practice. The need to "take care of the caregivers" became a priority for

²² For further details, see General Introduction, section 1.

²³ See also the articles: "No Global Health without Human Resources For Health (HRH): The Nursing Lens" published in 2015 (22), and "Advancing the science behind human resources for health: highlights from the Health Policy and Systems Research Reader on Human Resources for Health" published in 2018 (20).

²⁴ In some hospitals in the Ile-de-France region, for example, staff from anatomopathology laboratories have been asked to transport the bodies of deceased persons in numbers too large for the usual capacities of these hospitals.

²⁵ For reasons of feasibility, the press review was based on French newspapers only, but several articles referred to similar situations throughout Europe, in the USA or in other countries particularly affected by the Covid-19 epidemic in the first half of 2020.

²⁶ DREES, Etudes et résultats, Près d'une infirmière hospitalière sur deux a quitté l'hôpital ou changé de métier après dix ans de carrière, July 2023, <https://drees.solidarites-sante.gouv.fr/sites/default/files/2023-08/ER1277.pdf> (consulted on 24/11/2023).

global health authorities. Whether it's a question of health in the workplace, reducing working hours to avoid overwork, financing the necessary personal protective equipment (PPE), etc., initiatives are multiplying to ensure that care professionals can carry out their jobs with the least possible risk to their own health. Initiatives are multiplying to ensure that care professionals can carry out their work with the least possible risk to their own health. The question of working conditions also arises in response to the resignation phenomenon discussed in the previous section. We need to broaden our focus to talk about the attractiveness of the healthcare professions²⁷: salary and career development prospects are also important issues that seem to be gradually gaining ground and will be decisive for candidates for tomorrow's healthcare professions.

In the third section, we explore another dynamic that has been on the rise in recent years: **highlighting the diversity of healthcare professions**. Until the 2010s, most studies and reference documents on healthcare professionals focused on three main professions: doctors, nurses and midwives. In recent years, more and more professions have been taken into account, including more care professions and, more broadly, healthcare professions. We'll take a closer look at public health professions to illustrate this ongoing dynamic.

The fourth section will focus on the emergence of new professions. Drawing on a number of concrete examples (healthcare logisticians in Burkina Faso, contextual experts in Niger, advanced practice nurses - APNs - in France), we will highlight the value of **creating new healthcare professions** to respond to certain challenges encountered in healthcare systems. We will also mention the difficulties encountered in the field, as the emergence of a new profession represents a **number of challenges**. While certain solutions adopted at national or local level may inspire other countries, the articulation of healthcare professions, their respective fields of practice and training systems are generally thought out on a national scale, and need to be adapted on a case-by-case basis. It is often simpler to create new functions for an existing profession than to implement all the aspects involved in creating a new profession.

1. A global, worldwide shortage

The literature review carried out between April 2022 and April 2023 on healthcare professions in French newspapers yielded numerous results concerning the shortage of caregivers²⁸, medical deserts²⁹ and the In France, there is a "crisis" in hospitals (particularly emergency services and maternity wards)³⁰ and in the healthcare system³¹. Several articles testify to the fact that this situation of shortage concerns other high-income countries in Europe, the United States, etc.³² Whether in the press or with numerous institutional players, there seems to be a generalized observation of shortage.

²⁷ For this question, as for many others addressed in the report, there is more information on healthcare professionals than on other non-healthcare professionals, but the question of the attractiveness of the healthcare professions as such arises for all professions, not just healthcare workers.

²⁸ A few examples: "Why is there a shortage of doctors in France?", Le Monde, October 23, 2022 (YouTube video); "Faced with the shortage of doctors, really abolish the numerus clausus", Challenges, October 24, 2022; "Why is the hospital no longer attractive to carers?", Le Monde, July 22, 2022; "Pénurie de médecins : le maire d'Orléans s'accroche à son partenariat contesté avec l'université de Zagreb", Le Monde, May 7, 2022.

²⁹ "Déserts médicaux : l'Etat au secours du Centre-Val de Loire", Le Monde, February 23, 2022; "Déserts médicaux : l'accès aux spécialistes est de plus en plus difficile", Le Monde, September 27, 2022.

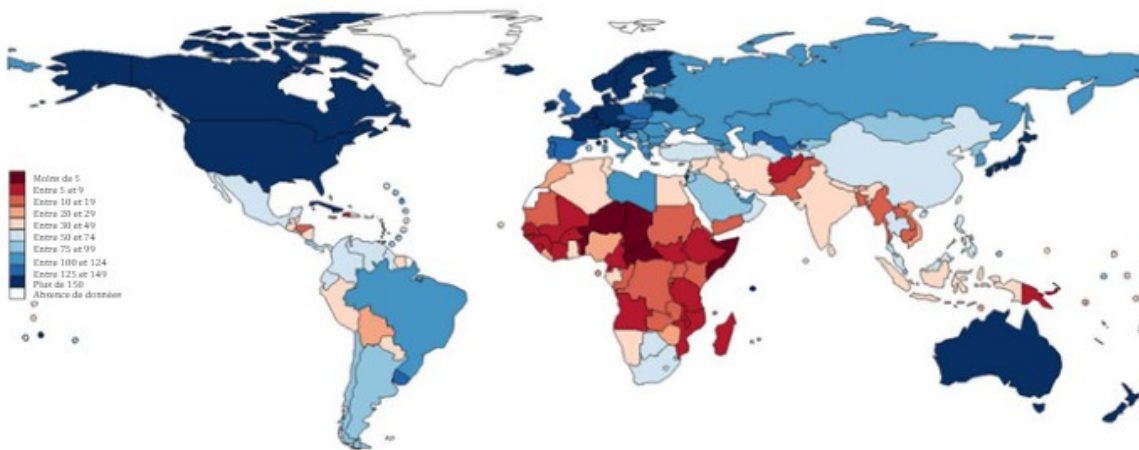
³⁰ "Au moins 120 services d'urgences font face à graves "difficultés" avant l'été, "du jamais-vu" ", Le Monde, May 20, 2022; "Hôpital : la crise ne cesse d'enfler aux urgences", Le Monde, May 23, 2022; "In the emergency department, one in five services is in danger of closing this summer. Il y aura donc des morts", Le Monde, June 01, 2022; "Mobilisation dans les hôpitaux : 'La crise hospitalière est devant nous, et les mesures budgétaires ne résoudront certainement pas tout'", Le Monde, June 07, 2022; "Crise de l'hôpital : face à la catastrophe annoncée, comment sauver les urgences ?" Le Monde, June 08, 2022; "Everywhere in France, on the eve of summer, maternity wards under high tension", Le Monde, June 20, 2022; "La canicule aux urgences : "On freine les admissions, on trie, le risque d'erreur est accru", Mediapart, August 31, 2022; "Crise de l'hôpital : les causes profondes", Osons Causer, January 02, 2023.

³¹ "Life without night emergencies for seven months in Draguignan: 'That's it, a hospital system that's cracking'" Le Monde, June 19, 2022; "Crise des systèmes de santé en Europe: comment expliquer les difficultés françaises?", The Conversation, March 12, 2023.

³² "Maternity. In the United States, women are increasingly giving birth outside the hospital", Courrier international, May 01, 2022; "Care. Without foreign workers, Germany's healthcare system 'would be on the verge of collapse'", Courrier international, May 31, 2022; "La grande pénurie de soignants est une réalité dans toute l'Europe", Le Monde, July 27, 2022; "Alerte de l'OMS sur la pénurie de médecins et de soignants en Europe", Challenges, September 15, 2022; "La crise du système de santé en France et en Europe", France Culture, January 01, 2023; "Crise de l'hôpital et du système de santé : en Europe, la France est loin d'être seul à souffrir", Huffington Post, January 05, 2023.

Yet the latest WHO estimates point to a 29% increase in the number of healthcare workers between 2013 and 2020 - around three times greater than the 9.7% increase in the world's population over the same period (23). The overall trend shows a decreasing shortage for most professions. The scale of the global shortage of healthcare workers expected by 2030 is estimated at 10 million (23). In these estimates, European countries, the USA and the majority of high-income countries are not considered to be in a shortage situation (see Figure 2), but the threshold considered here (50 healthcare professionals per 10,000 inhabitants) is widely questioned. If this threshold is indeed considered, only the countries in red on the map below are considered to be suffering from a shortage of healthcare professionals. The map shows that the African continent concentrates the lowest rates of healthcare workers per 10,000 inhabitants (less than five healthcare professionals per 10,000 inhabitants in Niger, Chad and the Central African Republic, for example, in 2020), and that the vast majority of countries on the continent are considered to be in shortage (on the whole continent, only South Africa, Lesotho, Swaziland and Libya are above the threshold).

Figure 1: Density of healthcare personnel (dentists, nurses, doctors, pharmacists, midwives) per 10,000 inhabitants in 2020



Source : traduit de l'anglais depuis l'article Boniol M. et al, *BMJ Global Health*, 2022.

When we compare the French, European or American situation with the countries where the shortage situation is the most serious - see, for example, the 55 countries on the WHO's list of priority countries for protecting and supporting the health workforce, updated in 2023 (24) - the shortage situations seem to have nothing to do with each other. In 2020, ERP countries had a density of healthcare professionals 6.5 times higher than low-income countries. One-fifth of the world's population (22%) benefited from almost half the healthcare workforce (47%) (23).

In order to better understand the global shortage of healthcare professionals, it is necessary to

Box 1. In its 2006 report entitled "Working together for health", the WHO estimated that a minimum density of **2.28 qualified healthcare professionals per 1000 people** was needed **worldwide**. This figure actually corresponds to the minimum density of doctors, nurses and midwives needed to ensure that 80% of births can be attended by a skilled birth attendant. health professionals. It is clear that such an indicator is very limited, and that with this criterion alone, all PREs are above the minimum density. Yet this figure of 2.28 per 1000 remained the reference figure until 2016, when the WHO published the Global Strategy on Human Resources for Health to 2030, which estimated that a minimum of 4.45 doctors, nurses or midwives per 1000 people were needed in 2030 to achieve Sustainable Development Goal ³ (World Health Organization 2016; World Health Organization 2016b) - based on a composite indicator taking into account **12 different dimensions of health systems** in a binary way (see Appendix 3).

Recently, this figure has changed again, following the work of a Lancet commission on HHR, which calculated that at least 20.7 doctors, 70.6 nurses and midwives, 8.2 dentists and 9.4 pharmacists per 10,000 people are needed to achieve 80% universal health coverage. That's almost **11 caregivers per 1,000** of these four categories, or 9.1 doctors, nurses or midwives per 1,000: double the 2016 estimate.

For each new estimate of the minimum density threshold, the estimated number of missing healthcare workers is recalculated. Thus, according to the Lancet article, **there was a shortfall of 43.2 million healthcare workers** in the four categories mentioned above in 2019 (Haakenstad et al. 2022).

it would be useful to look at how to estimate the minimum density thresholds for healthcare professionals, which determine, among other things, estimates of the number of healthcare workers needed.

1.1 Global shortages, national shortages: statistical estimates and regional dynamics

Whether on a global or national scale, estimating the number of healthcare professionals needed to keep a healthcare system running smoothly at a given date (prospectively or retrospectively), or the current or future shortage of healthcare professionals, requires us to take a number of different aspects into account.

First of all, it has to be decided **which professions and trades are included** in the estimates. Until the mid-2010s, only doctors, nurses and midwives were included in "healthcare personnel" estimates, as it was difficult to obtain reliable figures for the ^{others}³³. In recent years, it has become common practice to also include dentists (and dental assistants) and pharmacists (and pharmacist assistants). But this remains an extremely limited view of all healthcare professionals, considering only caregivers, and only some of them. Conversely, the broader the vision of healthcare professions, and therefore of the healthcare services from which the population should benefit, the more

³³ "It is acknowledged that this threshold reflects only physicians, nurses and midwives, an inherent limitation caused by the paucity of data on other cadres." (25); "It was not possible to factor into the analysis other health worker cadres (such as community-based and mid-level health workers, and other allied health professionals) due to extensive limitations in data availability for these other cadres." Source: Global Strategy, p.42 (World Health Organization 2016a).

the minimum density of healthcare professionals required for the proper functioning of the healthcare system will increase.

We also need to estimate the **quantity of healthcare services provided by the various professionals**, and compare it with needs (if we choose a method based on quantification of needs - see below).

Schematically, we can't estimate the number of healthcare professionals to be trained tomorrow if we don't know what tasks each one performs and the **total quantity of tasks to be performed**. As the tasks allocated to different professions vary according to country and context, these estimates are more reliable on a national or regional scale than on a global one. We therefore also need to know the *skill-mix*: the distribution of the different tasks to be carried out by the various healthcare professionals, in order to know in what proportions to train which types of professionals.

We also need to know **how many healthcare professionals are currently in post** in the various professions and trades selected, and how many **will be in post by the date for which a projection is made** (taking into account new arrivals currently in training, those due to retire, migratory flows of healthcare professionals and retraining).

Reliably estimating the shortage of healthcare professionals (current or future) on a national, regional or global scale is a challenge in itself, requiring a large amount of data and depending on many relatively arbitrary parameters. The following is an example of two different methods used to make projections about tomorrow's healthcare professions: calculating the number of healthcare professionals - trained or to be trained - or jobs - created or to be created, based on an estimate of healthcare needs in a given population, or based on tomorrow's economic demand in the healthcare sector.

There are two main ways of estimating the number of (new) jobs and healthcare professionals to be trained in the future (on a national scale, for example). A first option is to look at the **health needs of a given population** by defining the access to health and the health services to which we want the population to have access (80% CSU, for example), then dividing the set of services that the health system aspires to provide by the set of tasks that each health professional is capable of performing³⁴. The aim of this method is to find out how many professionals of which type are needed to ensure that the population has access to care in the proportion defined beforehand. We then compare the number of healthcare professionals needed at the time of the projection with the estimated number of professionals who will actually be in post at that time, to estimate the difference between the two. If the difference is negative, there is a shortage of healthcare professionals.

We can also choose to focus on the **demand for healthcare professionals**. This perspective, often adopted by health economists but less used in global health, does not focus on the health needs of the population in terms of indicators of coverage of certain health services, but seeks to analyze the health sector market and estimate the market's capacity to finance new jobs in the future. This pragmatic approach generally shows that the healthcare sector is dynamic: a source of new jobs and profitable in terms of investment in the future. It can also enable the State to adjust its public policies to create more jobs for professions that will be less developed in the private sector, in order to balance supply between the public and private sectors.

The differences in results between the two approaches can be significant. For example, on a global scale, the work of the High-Level Commission put forward the following needs-based estimates: **more than 40 million new jobs** will be created in the healthcare sector by 2030, and there will remain a shortage of 18 million healthcare professionals³⁵. The second approach, used by the World Bank - presented in an article published in 2017 (26) - shows a **demand for 80 million healthcare workers by 2030**. This analysis shows that middle-income countries and

³⁴ This presupposes, on the one hand, that all healthcare professionals are 100% efficient (or that individual or group efficiency problems are taken into account) and, above all, that they are equitably distributed across the country. The question of uneven distribution is absolutely crucial (see next sub-section).

³⁵ Recently revalued at 10 million, see above.

High-income countries will have the economic means to employ tens of millions more healthcare workers, but may be limited by the number of trained personnel available to work. Low-income countries will be limited by supply **and** demand, so even with more trained health workers, these countries will not be able to afford to employ these personnel without a very large additional economic investment in the health sector³⁶.

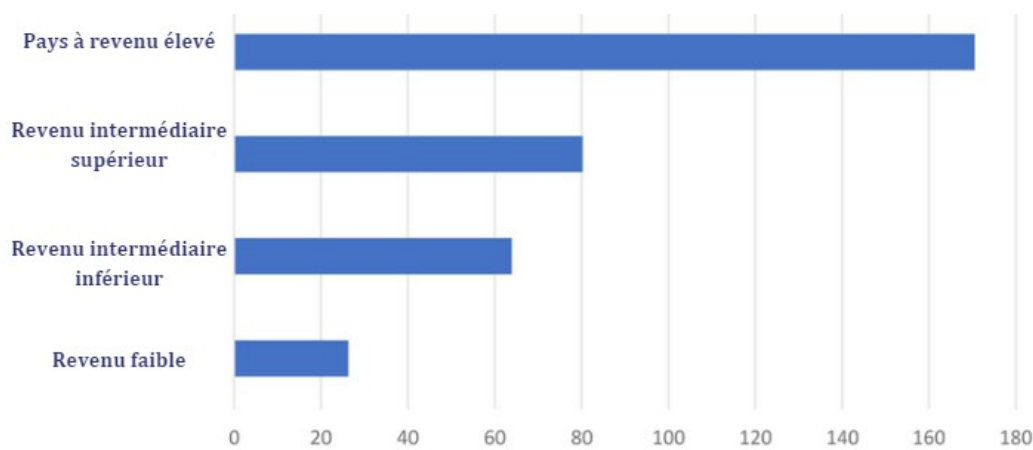
Demand in this approach is correlated with GDP for the current and previous year, as national income is the main factor conditioning healthcare spending, and therefore demand for healthcare personnel. The World Bank uses other complementary indicators to assess the demand for healthcare personnel, such as the percentage of a country's population over 65, or private *per capita household out-of-pocket spending on medical care*, considered as a proxy for social protection (the higher it is, the lower the demand for healthcare personnel).

It should nevertheless be stressed that, whatever the method of calculation chosen, the minimum threshold adopted or the optimism of certain projections, the scale of the global shortage of healthcare workers is still measured in millions. In the best-case scenario, there will be a shortage of **10 million healthcare workers in 2030** (23), with major inequalities in distribution between regions, between countries and within countries.

1.2 Uneven distribution: global estimates conceal major disparities

The latest WHO estimates on the distribution of healthcare workers worldwide confirm the trends identified earlier: inequalities are already significant and will continue to grow between now and 2030. On average, the density of healthcare workers is expected to increase by 29% between 2020 and 2030, but in the 47 countries with the lowest density, density is set to rise by only 9%. In 2020, these countries were already bearing half of the global shortage of healthcare workers; by 2030, these 47 countries will be missing 69% of their healthcare workforce (23). As for the WHO's Africa region, it accounted for a quarter of the global shortage of healthcare workers in 2013, compared with an estimated 52% in 2030. The gap with other regions is widening considerably, and Africa is no exception to the phenomenon of deteriorating public hospitals (even in the richest countries in the region, such as South Africa³⁷).

FIGURE 2: DENSITY OF HEALTHCARE PERSONNEL (DENTISTS, NURSES, DOCTORS, PHARMACISTS, MIDWIVES) PER 10,000 PEOPLE IN 2020 BY INCOME GROUP.



Source : traduit de l'anglais depuis l'article Boniol M, et al. *BMJ Global Health* 2022

³⁶ See the notion of "paradoxical surplus" illustrated and explained in Part Two.

³⁷ "Health. En Afrique du Sud, l'hôpital public est dans un état épouvantable", *Courrier international*, February 19, 2022.

As can be seen in the figure above, high-income countries will have 6.5 times more healthcare workers than low-income countries in 2020. This trend is set to continue: according to the latest WHO estimates, the shortage in the African region is set to fall by just 7% by 2030, and by 15% in the Eastern Mediterranean region, widening the inequalities with other regions (23).

1.3 Healthcare, a fast-growing sector: the example of France

WHO, and in particular the Health Workforce Department at its Geneva headquarters, has developed a **number of tools to help countries estimate the number of health professionals in** ^{post38} and draw up national analyses of the health sector. These national analyses are essential for adapting and adjusting training courses to the projections that can be made for the sector in a given timeframe. They should also be included in the National Health Development Plans (PNDS). The composition of the health sector in a given country at a given time is essential to adapt training and curricula to the health sector of tomorrow.

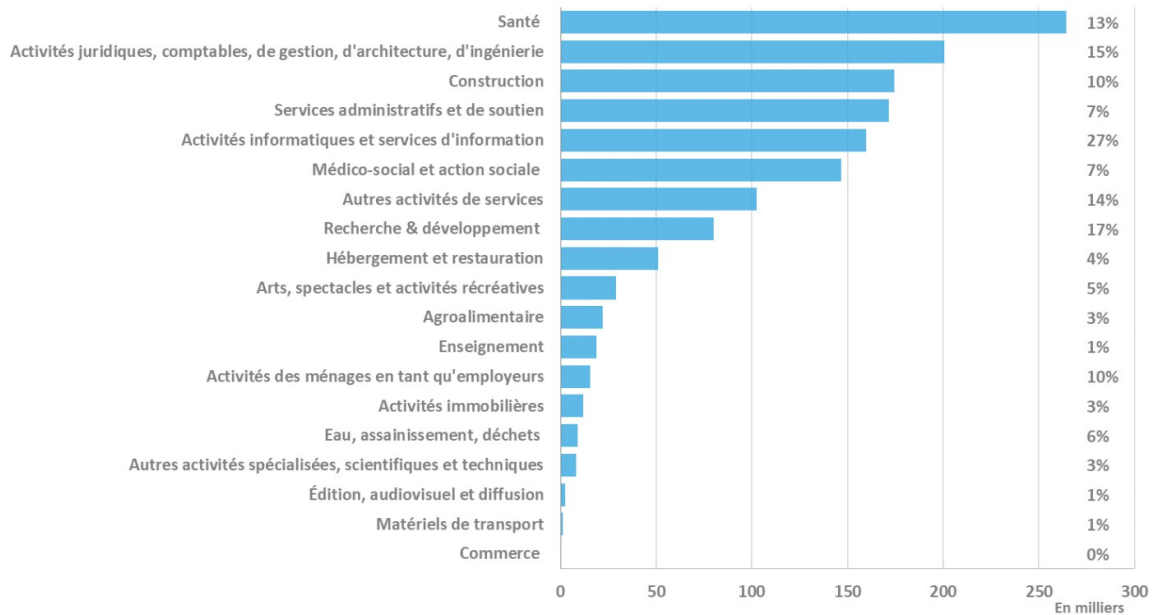
In France, for example, the Ministry of Labor's Direction de l'Animation de la Recherche, des Études et des Statistiques (DARES) published a report in 2022 entitled "Les métiers en 2030" (Jobs in 2030), which provided a wealth of useful information on the healthcare sector. The report estimated the number of jobs to be created between now and 2030, as well as recruitment needs, taking into account retirements, newly-trained young people and retraining, in order to highlight potential imbalances between employers' recruitment needs and the flow of young people leaving initial training (29).

Firstly, this report shows, on a national scale, what had been shown on an international scale by the High Level Commission: **healthcare is the sector where there will be the greatest growth by 2030** (13%) in France (see Figure 3 below). According to DARES estimates, 264,000 jobs will be created in this sector by 2030. It is also worth noting that the "medico-social and social action" and "health and social services" sectors will be the main growth drivers.

The "research and development" sector is also expected to grow by 7% and 17% respectively, with the creation of 147,000 jobs in the former and 80,000 in the latter. *"Healthcare and medical-social services would therefore gain over 400,000 jobs by 2030"* (p.50-51).

³⁸ See, for example, the WHO National Health Workforce Accounts Data Portal: <https://apps.who.int/nhwaportal/>. Or the publications "Handbook on national health workforce accounts" (27) and "National health workforce accounts: a guide to implementation" (28).

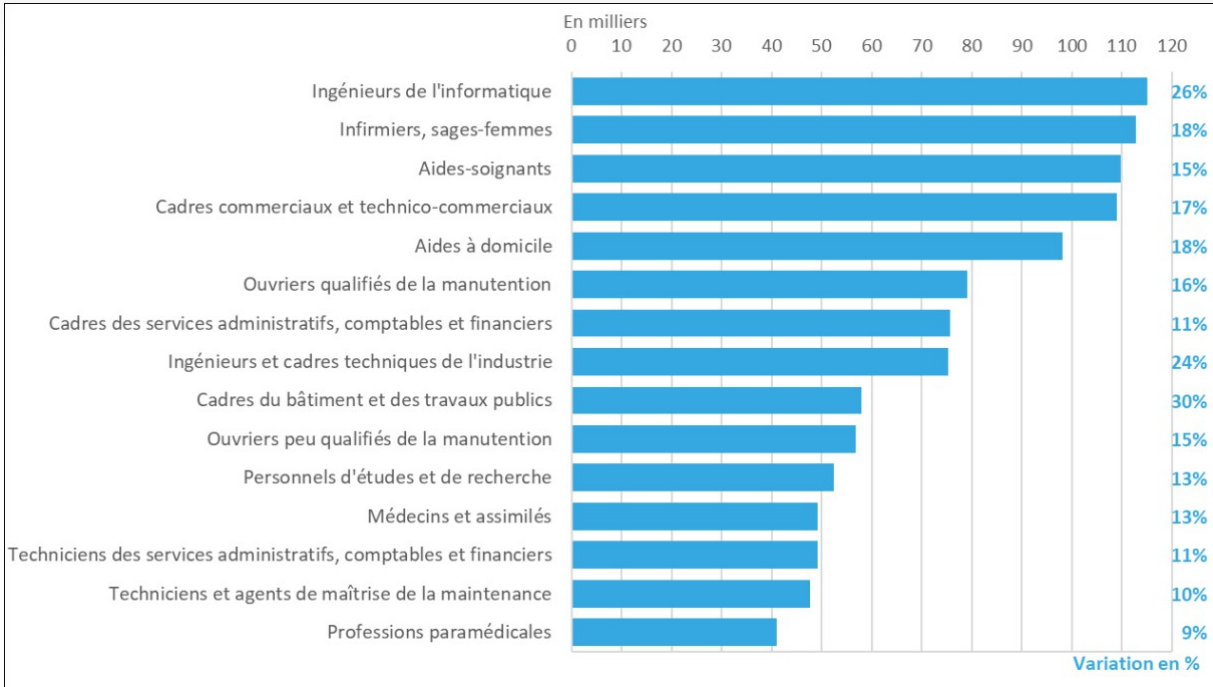
FIGURE 3: THE MOST DYNAMIC SECTORS IN FRANCE BETWEEN 2019 AND 2030 (REFERENCE SCENARIO) ACCORDING TO DARES.



The report explains this growth as follows: "[while] one in three French people will be aged 65 or over in 2030, the **aging of the population** will increase the need for healthcare and dependency care. In fact, the number of seniors suffering from loss of autonomy is expected to reach 3 million by 2030. In addition to these structural needs, there will be an **increased preference for healthcare as a result of the pandemic**. The **growing participation of women in the workforce** (70% will be active in 2030, compared with 68.6% in 2019) will also play a role in the demand for personal services. Women will continue to be the main carers not only for young children, but also for the elderly and disabled. Lastly, the rising level of education among the younger generations and the **need for lifelong training** to adapt to socio-technical transformations will maintain the need for education." (p.50).

According to the DARES report, "healthcare and personal services are among the most job-creating professions". Figure 4 (below) shows that three of the five fastest-growing occupations between 2019 and 2030 are in the healthcare or personal assistance sector (nurses and midwives, care assistants and home helps). Doctors and "Assimilated" and "Paramedical professions" are the 12th and 15th categories in the table respectively. It should also be noted that many of the other most job-creating professions, although not directly healthcare-related, are necessary for the smooth running of healthcare systems (e.g.: IT engineers; administrative, accounting and financial service executives; industrial engineers and technical executives; design and research personnel; maintenance technicians and supervisors, etc.).

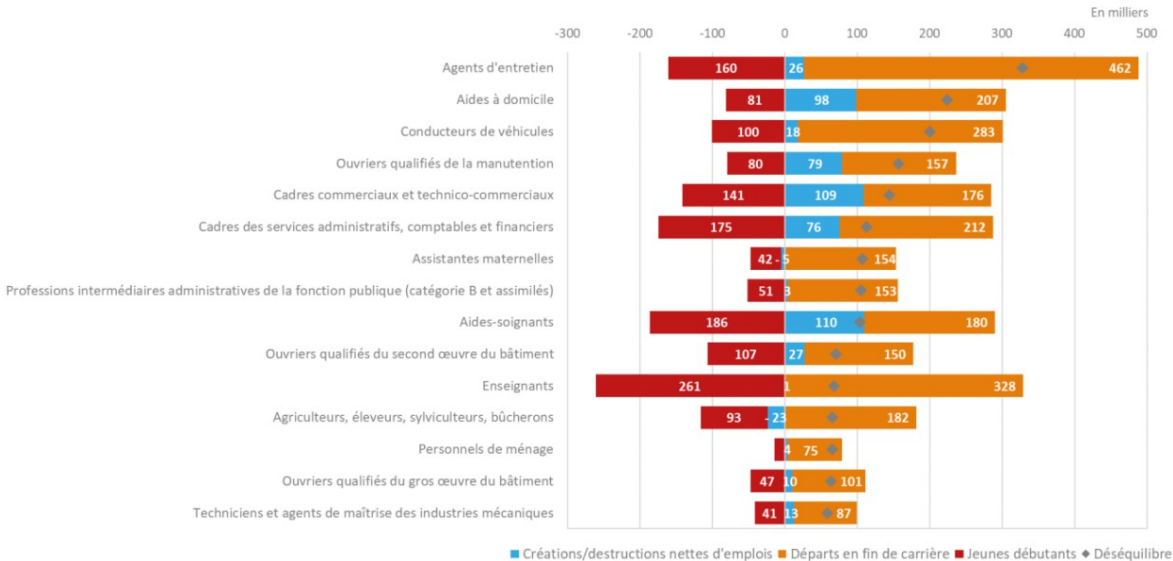
FIGURE 4: THE FASTEST-GROWING OCCUPATIONS IN FRANCE BETWEEN 2019 AND 2030 ACCORDING TO DARES



Not enough trained orderlies for the number of vacancies

Still according to the DARES report, the only healthcare profession for which we can expect a significant imbalance between the number of unfilled positions and the number of trained people entering the job market between 2019 and 2030 is that of care assistants (see Figure 5, below). "Among the fifteen occupations with the highest potential imbalances are home care assistants (224,000 positions unfilled by young new entrants) and care assistants (104,000 positions unfilled by young new entrants)". As in the previous tables, we also find other occupations necessary for the smooth running of healthcare systems, such as maintenance workers, vehicle drivers, administrative services executives, etc. However, the only healthcare profession for which there seems to be a predicted shortage is that of care assistant.

FIGURE 5: OCCUPATIONS WITH THE GREATEST POTENTIAL IMBALANCES BETWEEN JOBS TO BE FILLED AND NEW ARRIVALS IN FRANCE (BETWEEN 2019 AND 2030, REFERENCE SCENARIO), BY TYPE OF OCCUPATION DARES.



There's a big discrepancy between the shortage described in the press and the estimates in the DARES report. We are going to suggest some possible explanations to help us understand what is actually causing the impression of a shortage of caregivers in France.

Contextualizing the "shortage" of caregivers in France

In France, the shortage (described in the media or experienced by more and more residents) is not a generalized shortage of healthcare personnel. It has several specific characteristics and contextual explanations:

- The shortage mentioned in the newspapers is mostly a shortage of doctors (GPs and specialists), not of healthcare professionals. This shortage, which has been predicted for years, is now being mainly a consequence of the introduction of the *numerus clausus*³⁹ and the phenomenon of medical deserts.
 - Although the Conseil d'État suspended the decree setting the **numerus clausus** in France in January 2021, it seems that this practice has not really been abolished, since the number of future doctors in training is still limited by the number of internship places, for example⁴⁰. The number of internships has been increasing in recent years, with preference given to low-density regions over large metropolitan areas such as Paris, Marseille or Nice. Compared with the last *numerus clausus* [dated 2020, editor's note], the number of places in medicine will increase by 13% in 2022. The increase is 9% for pharmacy, 17% for dentistry and 1.5% for midwifery⁴¹.
 - The establishment of **medical deserts** is partly a consequence of the *numerus clausus* and the low overall density of doctors (general practitioners and specialists⁴²) in the country, but it is also the consequence of the **uneven geographical distribution of healthcare professionals**. The choice of practice mode by new generations of doctors (multi-professional nursing homes, shorter working hours and/or time devoted to non-healthcare activities, seeking salaried rather than self-employed status, etc.) is a factor that should not be overlooked, as it illustrates a fundamental trend that mechanically increases the need for more doctors. Increasing the number of trained healthcare professionals can help curb this phenomenon, but it is often not enough. There are many other ways of encouraging healthcare professionals to work in rural, sensitive or remote areas⁴³.
- The "crisis" in the French healthcare system⁴⁴ is primarily a **crisis in public hospitals**⁴⁵. The partial privatization of the healthcare system does not increase the shortage of healthcare professionals, since calculations of healthcare staff density take into account all professionals, whether they work in the public or private sector, or both⁴⁶. The resignation of healthcare professionals from public hospitals, or even the closure of beds or departments, are not "losses" for the healthcare system, if they translate into jobs, beds and departments created in the private sector. Nevertheless, this trend towards privatization of the healthcare system (which is not unique to France) has two major impacts: on access to care and health equity, and on the perception of how well the healthcare system works. Thus, free or low-cost care is considerably reduced, increasing inequalities in access to care; and the

³⁹ For a detailed description of the practice of *numerus clausus* and the history of its implementation in France, see the book *La Hantise du nombre: Une histoire des numerus clausus de médecine*, published in 2015 (30). This practice is not exclusive to France, but can also be found in Mali, Togo and other French-speaking African countries (31). In Togo, in September 2020, the Ministry of Higher Education and Research decided to ban the practice nationwide.

⁴⁰ "Le gros mensonge de la fin du *numerus clausus* en médecine", *Challenges*, July 15, 2023; "Face à la pénurie de médecins, supprimer vraiment le *numerus clausus*", *Challenges*, October 24, 2022.

⁴¹ Suppression du *numerus clausus*: combien a augmenté le nombre de places en médecine? *Egora*, September 2022, <https://www.egora.fr/etudiants/passlas-internat/76281-suppression-du-numerus-clausus-de-combien-a-augmente-le-nombre-de> (accessed November 24, 2023)

⁴² "Déserts médicaux: l'accès aux spécialistes est de plus en plus difficile", *Le Monde*, September 27, 2022.

⁴³ For concrete examples, see Part 2, Loyalty in rural and remote areas.

⁴⁴ "Europe's healthcare systems in crisis: what explains France's difficulties?", *The Conversation*, March 12, 2023.

⁴⁵ "Mobilization in hospitals: 'The hospital crisis is upon us, and budgetary measures will certainly not solve everything'", *Le Monde*, June 07, 2022; "Crise de l'hôpital: face à la catastrophe annoncée, comment sauver les urgences?" *Le Monde*, June 08, 2022; "Pourquoi l'hôpital n'est plus attractif pour les soignants", *Le Monde*, July 22, 2022; "Crise de l'hôpital et du système de santé : en Europe, la France est loin d'être seule à souffrir", *Huffpost*, January 05, 2023.

⁴⁶ The phenomenon of "*dual practice*" is increasingly common, in France and around the world (20,32).

The deterioration in public hospital services is making working conditions more difficult for carers, and is having a negative impact on the experience and perception of users.

In conclusion, the gradual decline in the density of self-employed doctors and specialists, particularly in medical deserts, combined with the disinvestment of public hospitals in favor of private clinics and the tightening of hospital working conditions, is leading to a decline in access to free care, a reduction in or threat to the quality of care in the public sector, and a general perception of a healthcare system in crisis. While there may not be a general shortage of healthcare personnel (even less so if we compare the French situation with that of other countries around the world), there is a real shortage of doctors, particularly in medical deserts, and the disinvestment of the public hospital sector is further exacerbating this contextual shortage by pushing caregivers to leave for the private sector.

This case study of France is an example of the lessons to be learned from analyses of healthcare labor markets on a national scale, the contribution of projections in a specific context, and the adjustments to be made for tomorrow's healthcare professions.

More generally, the shortage of PREs in recent months can have several causes. **The Covid-19 epidemic** has put a heavy strain on healthcare professionals, particularly in terms of the particularly difficult working conditions for carers. Many of them, who had already found their jobs unattractive - in terms of pay, working hours and working environment - before the epidemic, decided to resign. Some worked in public hospitals, and turned to the private sector, which is often more ^{attractive}⁴⁷. Others changed professions but stayed in the healthcare field. Finally, some have left the health professions and ^{retrained}⁴⁸.

1.4 The "Great Resignation" and the healthcare sector

The issue of health professionals, particularly carers, leaving the profession within five or ten years of completing their training is not a new one. In a context of shortage, increasing the number of training places is only a solution if we also take into account the fact that the people trained go on to practice the profession for which they were trained. It is not uncommon for healthcare professionals to decide to retrain after a few ^{years}⁴⁹.

A survey carried out in sub-Saharan Africa, for example, shows that 50% of nurses intend to leave their ^{jobs}⁵⁰. Another survey of paramedics in Israel in 2014 (34), which showed that, of the 2,500 paramedics trained, only 650 were still working. 50% of trained paramedics leave the profession after three ^{years}⁵¹. The reasons given for choosing to leave the profession were: lack of career opportunities, low wages despite intense and exhausting physical constraints, extended working hours and *shifts* that affect family and personal life. Another study of midwives conducted in Senegal in the late 2000s, questioning job satisfaction, ^{burnout}⁵² and intention to ^{quit}⁵³, already showed that more than half the participants

⁴⁷ See, for example, the scientific article "Why do some physicians in Portuguese-speaking African countries work exclusively for the private sector? Findings from a mixed-methods study", Russo et al, Human Resources for Health, 2014 (33).

⁴⁸ For all these aspects, see the following sections on the great resignation following the Covid-19 epidemic, on working conditions for carers and on the lack of attractiveness of certain healthcare professions.

⁴⁹ This phenomenon is particularly common in difficult working conditions. For more information on working conditions for carers, see the next section (section 3: "title").

⁵⁰ Ayalew E, Workineh Y, Semachew A, Woldgiorgies T, Kerie S, Gedamu H, et al. "Nurses' intention to leave their job in sub-Saharan Africa: A systematic review and meta-analysis". Heliyon. 2021;7(6):e07382.

⁵¹ Of the ambulance drivers who took part in the study, 73% of those who resigned left within five years of completing their training (34).

⁵² More than half the participants were diagnosed with overwork.

⁵³ The link between overwork and the intention to leave one's job or profession has been highlighted in numerous publications on healthcare professions (see, for example, concerning primary care nurses, this article published in November 2020:

"Psychological distress, burnout, job satisfaction and intention to quit among primary healthcare nurses" (35). These articles multiplied in the wake of the Covid-19 epidemic (36-38).

intended to resign from their job within the year (most of them to take further training).

Another recent example, published at the start of the Covid-19 epidemic in Canada, gave 2016 figures for adults aged 20 to 44 with a health education but not working in the healthcare sector⁵⁴ (indeed, there was talk of calling on them to practice certain tasks needed in the context of the response to the epidemic). Of the nearly one million people with secondary health education, only 56% were employed in health-related jobs. Of these, 30% were considered "under-utilized", including 14% in occupations that did not require higher education. 85% of those trained but not working in healthcare were women.

While the issue of resignation from the healthcare professions is not new, and is undoubtedly part of the shortage phenomenon, particularly for care professionals, it has been particularly raised in recent years in the wake of the Covid-19 epidemic, during and following which the phenomenon took on such proportions that the expression "*Great Resignation*" emerged⁵⁵. The "Great Resignation" has particularly affected the catering and retail professions⁵⁶, but healthcare professionals, particularly nursing staff, are also concerned⁵⁷, as the epidemic has had a major impact on their health.

If we take the example of mental health, several articles show that care professionals suffered more psychological pressure and mental illness (particularly nurses, women, *front-line health care workers*, younger people and those working where infection rates were highest) (39-41). In Italy, for example, doctors and nurses working in *Covid-19* wards showed a higher rate of depressive symptoms (particularly among single women) and post-traumatic stress symptoms (particularly among older women) than their colleagues (42). Another study in Turkey showed that the stress, anxiety and overwork of carers caring for Covid-19 patients significantly impaired their quality of life (particularly married women with children) (43)⁵⁸. In Ghana, after the first wave of Covid-19, a study showed the links between symptoms of overwork and exhaustion on the one hand, and intention to leave the profession on the other (in this study, 49.3% of the 375 participating nurses said they wanted to leave the profession) (45).

The impact of the particularly difficult working conditions experienced by healthcare professionals during the Covid-19 epidemic, and in particular the impact in terms of healthcare professionals wishing to leave the profession, or having actually resigned with a view to retraining in a sector other than healthcare, is still being measured. We'll know more about this aspect in the years to come, but the more general question of the possible reconversion of healthcare professionals once trained will, in any case, have to be taken into account in projections of tomorrow's healthcare professions. It will also be essential to pursue studies into the reasons why healthcare professionals resign, and to provide appropriate responses in an attempt to stem the flow of resignations that exacerbate the existing shortage.

⁵⁴ See the article "*Adults with a health education but not working in health occupations*" available in full at the following link: <https://www150.statcan.gc.ca/n1/pub/45-28-0001/2020001/article/00004-eng.htm> (accessed 06/03/2023).

⁵⁵ This phenomenon has mainly been characterized in the United States, and research on the subject is still ongoing, but we thought it would be interesting to mention the potential impact of a large-scale resignation phenomenon following very severe constraints experienced by caregivers during a global epidemic in a section on the shortage of healthcare professionals.

⁵⁶ Examples of resignation waves can be found in other sectors such as academia: see the article "*Has the 'great resignation' hit academia?*" published in *Nature* on May 31, 2022 and available at the following link: <https://www.nature.com/articles/d41586-022-01512-6> (accessed 08/08/2023).

⁵⁷ See, for example, the article "*Record number of healthcare workers quitting profession*", published on the Internet on September 8, 2022, on the case of Finland, where the number of applications for deregistration from registers authorizing the practice of healthcare or social professions was 20 times higher than normal in 2022. The article hypothesizes that this wave of resignations is one of the consequences of the *Patient Safety Act*, which obliges Finnish nurses, among others, to work even when on strike. The particularly difficult working conditions during the Covid-19 epidemic may also have been a factor. (For further details, see: <https://yle.fi/a/3-12615593>, consulted on 12/09/2022).

⁵⁸ The fact that women have been more affected by the Covid-19 epidemic than men is not specific to the healthcare sector (44).

2. Recognition of the importance of working conditions for healthcare professionals

The working conditions of healthcare professionals, and in particular care professionals⁵⁹, have been particularly difficult in recent years, and more specifically during the first months and years of the Covid-19¹⁹⁶⁰ epidemic. The previous section mentioned the impact of the Covid-19 epidemic on the mental health of healthcare professionals. Unfortunately, the latter were challenged in many other ways. Many caregivers were themselves infected, fell ill or died as a result of Covid-19¹⁹⁶¹. According to the WHO, between January 2020 and May 2021, between 80,000 and 180,000 healthcare professionals died from Covid-19¹⁹⁶². Other articles have shown that some healthcare professionals were victims of physical or verbal violence linked to the epidemic (46,47).

In response to all these difficulties, many of the world's healthcare players took the floor to emphasize the importance of "Caring for those who care", particularly in the midst of a global epidemic. This dynamic, which aims to improve the working conditions of healthcare professionals worldwide, was also an opportunity to highlight the lack of attractiveness of certain healthcare professions, and the correlation between the protection of caregivers and that of patients⁶³. In the years to come, we need to improve the occupational health of healthcare professionals and increase the attractiveness of those healthcare professions that are the most poorly paid or the most poorly regarded.

2.1 Caring for caregivers: a necessity

In the context of the Covid-19 epidemic, numerous proposals have been made to improve the working conditions of healthcare professionals, particularly care workers. There are numerous scientific articles proposing solutions to the mental health problems encountered by caregivers, for example (48-50). Other articles put forward the ethical reasons for paying healthcare professionals more to take into account the extra hours they had worked during the epidemic, but also the additional risks to their health (51,52) - weighing up the notion of "duty" often put forward to convince caregivers as part of the response to the epidemic (53,54) - particularly in a context where PPE was not always available⁶⁴. Soon enough (in December 2020), the WHO published recommendations on "Management of and policy towards healthcare workers in the context of the response to the COVID-19 pandemic" (55).

Subsequently, the need to take greater account of caregivers' working conditions, and to implement nationwide **occupational health and safety programs** for healthcare professionals, rapidly outstripped the response to the Covid-19 epidemic. By 2020,

⁵⁹ But this is also the case for many public health professionals or people more involved in the logistics of healthcare.

⁶⁰ "The past two years have exacted a terrible toll on health and care workers - from infections and deaths, lack of protection, and burnout, fatigue and other mental health issues due to the incredible demands made on these workers. From responding to COVID-19 to maintaining essential health services to rolling out new COVID-19 vaccines, an enormous burden has been placed on the health and care workforce that already was facing a significant shortfall in numbers, distribution and investment. We must re-ignite the motivation of health and care workers as part of our efforts to **Protect. Invest. Together.**" WHO Health Workforce Department, Autumn 2021. This quote, taken from the presentation of a WHO Webinar entitled "How we can re-ignite the intrinsic motivation of our health workforce?", highlights the extent of the consequences of the Covid-19 epidemic on the physical and mental health of healthcare professionals, and the link to their motivation in the exercise of their profession. (The webinar took place on November 18, 2021, see: <https://www.who.int/news-room/events/detail/2021/11/18/default-calendar/how-we-can-re-ignite-the-intrinsic-motivation-of-our-health-workforce>, accessed 09/08/2023).

⁶¹ "High proportion of healthcare workers with COVID-19 in Italy is a stark warning to the world: protecting nurses and their colleagues must be the number one priority" published on 20/03/2020 and available at the following link: <https://www.icn.ch/news/high-proportion-healthcare-workers-covid-19-italy-stark-warning-world-protecting-nurses-and> (accessed 22/03/2022).

⁶² "Health and Care Worker Deaths during COVID-19", published on 20/10/2021 on the WHO website and available at the following link: <https://www.who.int/news/item/20-10-2021-health-and-care-worker-deaths-during-covid-19> (accessed 04/07/2022).

⁶³ A charter drafted by the WHO calls on governments and those managing health services at local level to take steps to better protect health workers <https://www.who.int/fr/news/item/17-09-2020-keep-health-workers-safe-to-keep-patients-safe-who> (accessed November 24, 2023).

⁶⁴ "Doctors threaten to quit NHS over shortage of protective kit", published in the Guardian on March 24, 2020 and available at the following link: <https://www.theguardian.com/world/2020/mar/24/doctors-threaten-to-quit-over-protective-equipment-shortage> (accessed 09/08/2023).

WHO and ILO publish a guidance note entitled "Caring for caregivers: national occupational health programs for health workers. Guidance note" (16). This institutional document highlights the need to protect healthcare professionals, as the health professions are among the most dangerous in terms of health and safety at work, and these working conditions not only endanger caregivers, but also the rest of the population, as they "compromise the performance of the healthcare system"⁶⁵ (16).

As early as 2020, it was announced that 2021 would be the "Year of the Health and Personal Care Workforce"⁶⁶. At the 2021 World Health Assembly, resolution WHA 74.14 "Protecting, preserving and investing in health and care workers" was adopted. The following year, the WHO and ILO published the report "Caring for caregivers: a guide to developing and implementing occupational health and safety programs for health workers" (60). Finally, the theme of the 5th Global Forum on HRH (organized by the WHO from April 3 to 5, 2023 in Geneva) was "*Protecting, safeguarding, and investing in the health and care workforce*", illustrating the importance of taking better care of healthcare professionals and investing in better working conditions to preserve the *health workforce*.

In France, the CCNE, in opinion no. 140 of 2022, also recognizes the need, from an ethical point of view, to be attentive to the working and living conditions of care professionals. "Respecting patients means respecting caregivers too. One person's well-being cannot depend on another's drudgery. The quality and safety of care is linked to the well-being of caregivers and their quality of life at work⁶⁷, which depends in part on a fair balance between private and professional life. Acknowledging the **principle of reciprocity** in the care ecosystem should encourage us to think about the working and living conditions of healthcare and medical-social professionals, as well as caregivers. This calls for the social and salary recognition of care missions. The CCNE calls for care professions, and in particular those in daily contact with patients (technicians, care assistants, nurses), to benefit from working conditions (salaries, quality of life at work, number of posts per department, career development prospects, etc.) that make them **attractive** and reflect society's recognition of the value of their work." (3).

2.2 The attractiveness of the healthcare professions

At the time of the Covid-19 epidemic, the issue of health and safety in the workplace for care workers came to the fore, but we have seen in the preceding paragraphs that the working conditions of care workers more generally are linked on the one hand to the quality of care (57,59), and on the other to their intention to leave their profession, or not (61). Thus, in a global context of shortage of healthcare professionals, particularly for the lowest-paid and least-skilled jobs, the question of the attractiveness of the healthcare professions is central⁶⁸. What's more, job satisfaction has also

⁶⁵ In this respect, there are three distinct elements to note: firstly, healthcare professionals infected by a virus increase patients' risk of catching it, so protecting caregivers also means better protecting patients; secondly, healthcare professionals absent due to illness are unable to care for patients; thirdly, several studies show a link between job satisfaction, the working environment and job performance in healthcare services (56-59). Improving the working conditions of healthcare professionals will therefore have a beneficial effect on the quality of care and the overall quality of the healthcare system.

⁶⁶ See: <https://www.who.int/news/item/11-11-2020-2021-designated-as-the-international-year-of-health-and-care-workers> (consulted on 04/07/2022); <https://www.who.int/fr/campaigns/annual-theme/year-of-health-and-care-workers-2021> (consulted on 26/01/2022) and <https://www.youtube.com/watch?v=qwwPnjzIXbQ> (consulted on 08/06/2022). See also the four seminars organized by WHO and Health Education England on this occasion: <https://global.hee.nhs.uk/yhcw/> and <https://global.hee.nhs.uk/yhcw/seminars/> (accessed 05/10/2022). These seminars, entitled "An introduction to systemic workforce planning" (seminar 1); "State of Shock: the role of workforce planning in responding to shocks in demand for health and care" (seminar 2); "Top of their game: effective workforce planning of doctors, nurses and other health and care professionals" (seminar 3); and "Health is Everybody's Business: maximizing the contribution of support and other workforces in health" (seminar 4), are available online and provide a good overview of several of the major current themes concerning the healthcare professions addressed in this report.

⁶⁷ H. Delmotte, "Le bien-être au travail des soignants conditionne-t-il l'expérience patient?", April 12, 2021, Réseau hôpital et GHT (Groupements hospitaliers de territoire). Available at link: <https://www.reseau-hopital-ght.fr/actualites/ressources-humaines-enseignement/metiers/le-bien-etre-au-travail-des-soignants-conditionne-il-l-experience-patient.html>.

⁶⁸ "What is needed is not only to create jobs in the rural health sector, but also to create decent jobs in this sector. Adequate and timely remuneration of health workers is an important issue, especially in rural and remote areas." (18)(p.22/46).

an impact on the performance of care services and the quality of life of healthcare professionals (62, 63).

The attractiveness of a profession includes many different aspects. In the case of healthcare professions, in particular nursing professions, numerous studies have highlighted these different aspects.

Salary: a determining factor

Salary is an important aspect of a profession's attractiveness, and many healthcare professionals complain that their salary does not pay enough, given the difficulty of their working conditions⁶⁹. The idea that healthcare professionals do not have a profession but a "vocation"⁷⁰ or the moral imperative linked to the function of carers are often invoked to justify the need for them to continue to exercise their professions, and not go on strike⁷¹, whatever the working conditions and salary (51). However, the rhetoric of vocation, particularly in the public sector, seems to be reaching its limits, and many healthcare professionals are threatening to resign, go into the private sector or retrain entirely if their salaries do not rise rapidly⁷². The level of remuneration is also one of the motivations for seeking a position in another country, where salaries are more competitive.

Much of the work that has been carried out points to the need to raise the pay levels of tomorrow's healthcare professions in order to increase their attractiveness in general (64), with a strong emphasis on reducing the pay inequalities between men and women in this specific sector (65,66) - not to mention the significant proportion of the work of healthcare professionals (particularly female CHWs) that is unpaid⁷³. The exploitation of women's unpaid or underpaid work has negative effects on healthcare systems (67), yet six million women healthcare professionals are underpaid or unpaid.

Taking care of patients means giving them time.

Even countries with the most "robust" healthcare systems experience major systemic crises. The difficulty of reconciling the time available to the caregiver with the time required to care for the patient illustrates the overall complexity of maintaining quality of care despite limited resources (such as time). This has led to crises of vocation and psychological, as well as "ethical", suffering, clearly expressed by professionals, who are questioning in depth the meaning of their profession. The tendency to technicalize all aspects of care means that we lose sight of the crucial distinction between the efficiency and quality of the care system. This latter dimension requires time duly devoted to listening, to the caregiver-care receiver relationship, to individual and collective ethical reflection, but also relies on aspects that are sometimes difficult to quantify (respect for the autonomy of caregivers and users, mutual trust, a holistic and not strictly biomedical approach to care in the face of necessarily complex cases, etc.).

The importance of the work environment

As early as 2010, a report published by the WHO European Region and the *European Observatory on Health Systems and Policies* (EOHSP) entitled

"How to create an attractive and supportive working environment for health professionals" gave concrete suggestions⁷⁴ for making working environments for health professionals more attractive and supportive.

⁶⁹ In particular, the efforts they were asked to make during the Covid-19 epidemic, but not only that.

⁷⁰ "Healthcare professionals: a vocational crisis? Avec Frédéric Pierru et Mathilde Renker", France Culture, July 21, 2021. Available at the following link: <https://www.radiofrance.fr/franceculture/podcasts/l-invite-e-des-matins-d-ete/professionnels-de-sante- crise-des-vocations-avec-frederic-pierru-et-mathilde-renker-6861020>, accessed 02/02/2023.

⁷¹ See, for example, the *Patient Safety Act* in Finland (<https://yle.fi/a/3-12615593>) or the minimum service law in France, which enables certain striking healthcare professionals to be summoned to work via summons (for more information, see for example: <https://www.la-croix.com/France/soignants-assignes-jours-greves-2020-06-16-1201100074>, consulted on 12/08/2023).

⁷² "Ces médecins qui quittent l'hôpital: 'J'adore mon boulot, mais là, je vais y laisser ma santé'", Le Monde, 07/25/2022 (see: <https://www.lemonde.fr/societe/article/2022/07/25/ces-medecins-qui-quittent-l-hopital-j-adore-mon-boulot-mais-la-je-vais-y-laisser-ma-sante-6136016-3224.html>, accessed 08/31/2022).

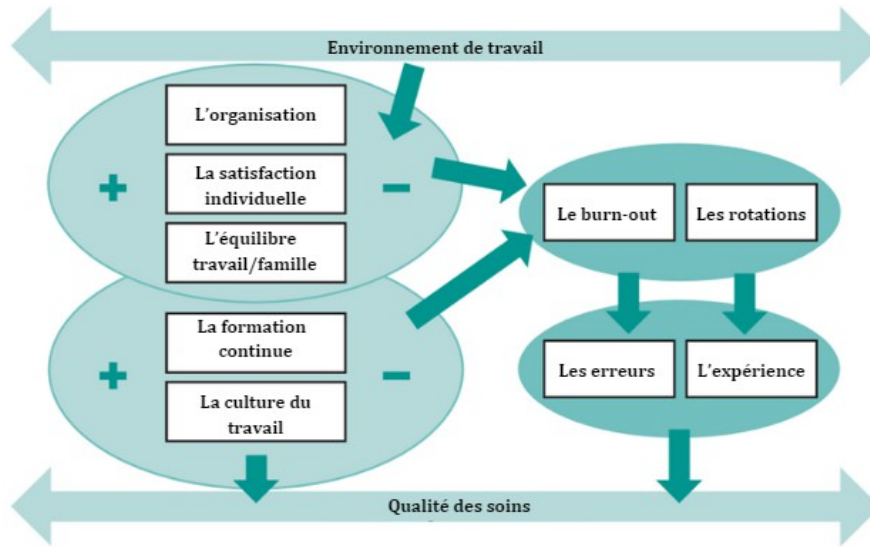
⁷³ "International nurses considering leaving UK if pay does not improve", published on the internet on December 21, 2022 (see: <https://www.nursingtimes.net/news/workforce/international-nurses-considering-leaving-uk-if-pay-does-not-improve-21-12-2022/>, accessed on 13/01/2023).

⁷⁴ See the Lancet article: [https://www.thelancet.com/journals/langlo/article/PIIS2214-109X\(23\)00357-1/fulltext](https://www.thelancet.com/journals/langlo/article/PIIS2214-109X(23)00357-1/fulltext) (accessed November 23, 2023).

⁷⁴ According to this report, concrete avenues need to be explored at four levels: international/regional; national; within the health sector; and local/health facility. Effective solutions depend on

preserve the quality of care while ensuring that the "health workforce supply" does not decline due to lack of attractiveness (68). Indeed, this report has already shown that the working environment is an important factor in the recruitment and retention of healthcare personnel.

FIGURE 6: LINKS BETWEEN WORK ENVIRONMENT AND QUALITY OF CARE



Source : traduit de l'anglais depuis l'article Wiskow C, Albrecht T, de Pietro C. How to create an attractive and supportive working environment for health professionals. WHO and European Observatory on Health Systems and Policies; 2010 p. 48. p.14

The work environment also has an impact on the quality of care - see Figure 6 (above) - on the efficiency and motivation of healthcare professionals (69,70). A more recent study, from 2021, of 164 nurses working in public hospitals in Norway, analyzed the "organizational factors" linked to the attractiveness of their profession and concluded that collaboration between departments, support from managers and superiors, and the quality of care provided in their departments played an important role (71).

A great deal of work has been done on ways of improving the work environment⁷⁵. The adoption of policies to promote a *healthy balance* between family life and work could also improve job satisfaction. Similarly, improving occupational health protection for healthcare workers is an important aspect of the attractiveness of healthcare professions. Healthcare professionals are particularly exposed to occupational hazards and face a variety of health and safety threats unknown to most other professions, including radiation, harmful drugs and chemicals, blood-borne pathogens, musculoskeletal injuries and workplace violence. Worldwide, healthcare professionals also face higher rates of depression, suicide, stress and anxiety than almost any other profession. This often leads to fatigue, burnout, increased psychological distress or deterioration in mental health, affecting the condition of healthcare professionals and, ultimately, the quality and safety of patient care.

Finally, studies analyze work environment assessment programs to encourage employers in the healthcare sector to take action and, ultimately, improve the attractiveness of healthcare professions (68).

Other factors also play a role in the attractiveness of healthcare professions:

- Living conditions beyond the work environment (whether or not housing is linked to the position, safety, school environment for children, etc.)
- Career development and training opportunities
- Coverage (or not) of healthcare costs - such as mutual insurance - (73)

The authors of the report therefore suggest that priority should be given to the *local/organizational level*, with the other levels providing a legislative and legal framework (68)p.6.

⁷⁵ See, for example, the scientific article: "Effectiveness of Workplace Interventions to Improve Health and Well-Being of Health and Social Service Workers: A Narrative Review of Randomised Controlled Trials", Shiri et al., 2023 (72).

- Motivation, the moral aspect of the healthcare professions (altruism, the desire to help others) and the idea of a vocation are also elements that can be put forward by people turning towards healthcare professions.

A study conducted in Romania in 2020, for example, shows that a "spirit of adventure" makes hospital jobs more attractive to young people, especially during a pandemic. The participants seemed enthusiastic about the idea of having to adapt and be creative.

3. Recognition of the diversity of healthcare professions

3.1 Better representation of the diversity of healthcare professions: a trend reinforced since the late 2010s

While the WHO has long recognized the diversity of all healthcare professions⁷⁶, most studies or reports on healthcare professionals published up until the 2010s only included data on doctors, nurses and midwives. The minimum threshold for the density of healthcare professionals used worldwide between 2006 and 2016 only took these three professions into account, and this was still the case for the updated threshold following the High Level Commission and the WHO Global Strategy of 2016. While these three professions can obviously be considered to encompass dozens of professions, specialties and positions, they are far from representing all healthcare professions.

In recent years, several major publications have raised the profile of

Box 3. Existing classifications and lists of healthcare professions worldwide Listing all healthcare professions on a global scale is a highly complex task, for several reasons. Firstly, each country has its own national classification of occupations, and the same occupation name can refer to different sets of tasks or skills, and different levels of specialization, from one country to another. Conversely, different trade names in different countries may refer to the same occupation.

Secondly, because these national lists are constantly evolving in line with innovations and trends in healthcare systems and changes in the world of work. The monitoring and updating of an International Standard Classification of Occupations (ISCO), enabling comparisons and analyses on a global scale, is a task that involves several years of redefinition proposals, discussions and negotiations between the International Labour Office (ILO) of the International Labour Organization (ILO) and the member states of this organization (via the International Conference of Labour Statisticians).

Finally, while the International Standard Classification of Occupations (ISCO) includes two sub-major groups specific to healthcare occupations ("22 Healthcare Specialists" and "32 Healthcare Intermediate Occupations"), many other healthcare occupations can be found in the other categories.

The World Health Organization (WHO) proposes a classification of healthcare occupations based on ISCO, which not only includes healthcare occupations from other categories, but also adds a number of occupations that are not specific to the healthcare sector, but which are necessary for the proper functioning of a healthcare system (5). This reference document includes **some fifty typical professions and over 370 examples of occupations.**

other professions. One example is a *Global Burden of Disease* article published in the Lancet in 2022: "Measuring the availability of human resources for health and its relationship to universal health coverage for 204 countries and territories from 1990 to 2019" (74). This article gives an estimated minimum threshold to achieve 80% universal health coverage (UHC), which includes, in addition to doctors, nurses and midwives, dental staff (dentists and assistants) and pharmacy staff (pharmacists and assistants). In addition, 16 professions were considered in the measurement of health professional densities estimated in article⁷⁷.

⁷⁶ See the WHO classification of healthcare professions, which gives over 370 examples of professions, presented in the general introduction to this report.

⁷⁷ "The following are the 16 health worker cadres that we were able to estimate: physicians; nurses and midwives; dentists and dental assistants (dentistry personnel); pharmacists and pharmaceutical assistants (pharmaceutical personnel); clinical officers, medical assistants, and community health workers; medical imaging and therapeutic equipment technicians; health-care aides and ambulance workers; medical laboratory technicians; dietitians and nutritionists; optometrists and opticians; audiologists, speech therapists, and counsellors; physiotherapists and prosthetic technicians; psychologists; environmental health workers; home-based personal care workers; and traditional and complementary practitioners" (74).

Similarly, in the latest WHO Africa Region Office (WHO AFRO) report on health professionals, published in 2021, the minimum density calculated for a UHC of 70% took into account 13 occupational groups and over 20 trades⁷⁸.

Another recent example is the updated WHO recommendations on retaining healthcare professionals in rural and remote areas, published in 2021 (18). This report compares the healthcare professions covered by studies published on the subject between 1995 and 2009 (27 studies) with the target professions of studies conducted on the same subject between 2010 and 2019 (79 studies). In the 2010 report, the data concerned only nine healthcare professions. The updated 2021 version contained data on over thirty occupations divided into 4 occupational groups.

This trend towards greater representation of trades and professions in publications and discourse on healthcare professionals, which is reflected in the institutional work and research studies initiated following the 2016 High Level Commission and Global Strategy, was further reinforced at the start of the Covid-19 epidemic. While caregivers played a key role in caring for people seriously ill with Covid-19, the public health measures adopted by the various governments to manage the epidemic on a population-wide scale made visible the essential role of public health professions in the functioning of a healthcare system⁷⁹.

3.2 The example of public health professions during and following the Covid-19 epidemic

Towards more public health professionals (building a *public health workforce*) The Covid-19 epidemic marked a turning point in the recent history of global health and in the public perception of certain health professions. Particularly in the early months of the epidemic, before biomedical means of combating the disease were available⁸⁰, the main public health measures taken by the various governments were able to draw on the epidemiological knowledge that was rapidly accumulating as a result of pooling the results of the first research carried out on the virus in different countries.

While this period of initial research has subsequently been criticized for some of its excesses (75), it was also a period when certain healthcare professions were given particular prominence. In France, for example, there was a whole media session around the idea that the President, Emmanuel Macron, had become "France's first epidemiologist"⁸¹. This language was used by members of the government to try and convince people of the seriousness of the Head of State and the scientific basis of the

⁷⁸ See part 2 on Africa, in particular section 1 and figure 8.

⁷⁹ The media and political visibility of non-healthcare professionals during the early years of the Covid-19 epidemic was not confined to public health professions. It also concerned clinical research and scientific publication, for example, with the media coverage of trial results as they became available in the scientific literature. Or the logistics of healthcare products, with the media monitoring of vaccine production by the various pharmaceutical laboratories, their availability (purchase and transport) in the various countries and the logistics linked to their administration in the general population where applicable. We could also mention the logistics involved in the manufacture and administration of the various tests, or even the different types of masks available or not at different times, the quantity of PCR machines or oxygen machines available, and so on.

The list is not exhaustive, but we've chosen to take the example of public health professions, because it seems to us that the dynamic of raising the profile of these professions and creating training courses to ensure that there are more public health professionals in post in the decades to come, continues well beyond the Covid-19 epidemic.

⁸⁰ Examples include PCR screening tests, antigenic tests, vaccines or self-tests, which will gradually be discovered and made widely available in the months or years following the discovery of the virus.

⁸¹ "Emmanuel Macron, France's leading epidemiologist". L'Opinion, April 21, 2020. Available at the following link: <https://www.lopinion.fr/politique/emmanuel-macron-premier-epidemiologiste-de-france> (accessed 04/08/2023).

political decisions taken at the ^{time}⁸², as well as by its political opponents, in order to illustrate, on the contrary, the political decisions that did not follow the advice of the Scientific Advisory Board⁸³.

But this media sequence also led to epidemiologists being mentioned in the headlines of many media articles⁸⁴. Some took the opportunity to present epidemiology as a scientific discipline which, like others, "requires years of experience"⁸⁵. Beyond the anecdotal, other healthcare professions were also highlighted during this period: professions linked to public health, prevention and health promotion, or clinical research, for example. Technical terms such as incidence, prevalence, risk factors, etiology, virus transmission vectors or barrier measures became familiar, and the importance of public health as a whole for the health of populations was particularly highlighted⁸⁶.

The drive to raise the profile of public health professions quickly turned into a realization that more public health professionals needed to be trained and more jobs created⁸⁷. This idea was institutionalized by the WHO and its partners with the *Roadmap on the Public Health and Emergency Workforce*⁸⁸ (76).

What careers are there for public health and health emergencies professionals?

The field of *emergency preparedness and response* (EPR) already existed in global health, for example within humanitarian aid NGOs specializing in crisis and emergency management (such as the Red Cross and Red Crescent - ICRC - Médecins Sans Frontières - MSF - or Médecins du Monde - MdM). With the multiplication of climate-related disasters in recent decades, EPR has gained momentum within international organizations such as the WHO, pushing to the top of the global health policy agenda the idea that it is necessary for countries to equip themselves with structures and professionals capable of managing this type of event. In France, for example, the climatic episode of the 2003 heatwave served as a trigger for national and local reflection on how cities and public spaces should be designed to reduce the impact of such climatic events and improve the response capabilities of professionals, including healthcare professionals⁸⁹.

⁸² "Emmanuel Macron 'will end up an epidemiologist', he amazes the government". Gala, February 10, 2021. Available at the following link: https://www.gala.fr/actu/news_de_stars/emmanuel-macron-va-finir-epidemiologiste-il-epate-au-gouvernement_462934 (accessed 04/08/2023).

⁸³ "He reads all the studies": when the Macronie makes tons about the president-epidemiologist". L'Obs, February 24, 2021. Available at the following link: <https://www.nouvelobs.com/coronavirus-de-wuhan/20210224.OBS40614/il-lit-toutes-les-etudes-la-macronie-en-fait-des-tonnes-sur-le-president-epidemiologiste.html> (accessed 04/08/2023).

⁸⁴ "Comment l'entourage d'Emmanuel Macron met en scène un président qui aurait devenu épidémiologiste". Le Monde, March 30, 2021. Available at the following link: https://www.lemonde.fr/politique/article/2021/03/30/covid-19-emmanuel-macron-le-president-epidemiologiste_6074919_823448.html (accessed 04/08/2023).

⁸⁵ "Emmanuel Macron thinks he's the champion of global epidemiology", tackles Patrick Kanner". Public Sénat, March 30, 2021. Available at the following link: <https://www.publicsenat.fr/actualites/non-classe/emmanuel-macron-pense-qu-il-est-le-champion-de-l-epidemiologie-mondiale-affirme> (accessed 04/08/2023).

⁸⁶ "Macron 'epidemiologist president': the opposition denounces statements by the head of state's entourage". BFMTV, March 31, 2021. Available at the following link: https://www.bfmtv.com/politique/macron-president-epidemiologiste-l-opposition-denonce-les-declarations-de-l-entourage-du-chef-de-l-etat_AN-202103310162.html (accessed 04/08/2023).

⁸⁷ Examples include BFM TV, Gala, Femme Actuelle, l'Obs, Le Monde, Libération and Marianne (in alphabetical order).

⁸⁸ "Macron, 'epidemiologist president'? 'This science requires years of experience'", Marianne, March 31, 2021. Available at the following link: <https://www.marianne.net/societe/macron-president-epidemiologiste-cette-science-demande-des-annees-dexperience> (accessed 04/08/2023).

⁸⁹ Recent internet research on healthcare careers in the coming years yields several results specific to public health careers. One example is an internet article from October 4, 2022 entitled "10 Emerging Public Health Careers" available at the following link: <https://www.bestcolleges.com/blog/emerging-public-health-careers/> (accessed 06/03/2023). ⁸⁷ See, for example, the conference "Where do we go from here? Strategies to build the public health workforce" organized by the American Public Health Association and the Fondation de Beaumont on November 09, 2022 and available at the following link: <https://www.youtube.com/watch?v=R2VcPXH9sn8> (accessed 09/03/2023).

⁸⁸ See the conference "Building the public health and emergency workforce: A roadmap" organized by the WHO Health Professionals Department and Dr Socé Fall, then Assistant Director-General for the WHO Health Emergency Management Programme, May 18, 2022. Webcast available at <https://www.youtube.com/watch?v=hJwMjSWlleU> (consulted on 09/03/2023). And for France, we refer to the report directed by Pierre Chauvin, at the request of the Ministry of Health "Dessiner la santé publique de demain", in 2021. <https://sante.gouv.fr/ministere/documentation-et-publications-officielles/rapports/sante/article/dessiner-la-sante-publique-de-demain> (consulted on 24/11/2023)

⁸⁹ At the institutional and scientific day on "Health as a lever for action in the face of climate change" (evt n°XX), organized by the French Ministry of Solidarity and Health, the Santé Publique France institute and the *International Association of National Public Health Institutes* (IANPHI) on April 08, 2023, French speakers often mentioned the 2003 heatwave. The third panel in particular, on the inspiring examples of

However, the direct link between public health professionals on the one hand and EPR on the other is characteristic of the post-covid years. While the national *public health* institutes (NPHI) were already on the front line in managing epidemics in their territories, there was little connection with humanitarian aid and crisis management institutions. This rapprochement has given rise to innovations in terms of healthcare professions. One example is the creation of a training program in field epidemiology in Guinea (77).

In addition, the idea of "public health and emergency health professionals" is helping to raise the profile of public health professions and increase the number of training courses available. The *Roadmap on the Public Health and Emergency Workforce* drawn up by the WHO and its partners highlights three priorities: defining *essential public health functions* (EPHFs); mapping and assessing the number of public health professionals in post; and reinforcing *competency-based* education (CBE)⁹⁰ for public health professionals⁹¹.

Last but not least, the drive to bring public health professions closer to the EPR professions is not the only one to bring public health professions to the fore. Health promotion-related professions could also benefit from the aftershock of the Covid-19 epidemic. At the 76th WHA in 2023, for example, one of the items on the agenda was "Achieving well-being: a draft global framework for integrating well-being into public health using a health promotion approach" (78).

4. Creating new healthcare professions: concrete examples, solutions and challenges

For some players, the creation of new healthcare professions in the coming years represents a potential solution to a number of healthcare challenges. In this report, we do not intend to be exhaustive about all the "new" professions, but rather to give a few concrete examples illustrating the potential interest in creating a new profession, and the difficulties involved in institutionalizing this new profession (training, coordination, institutional recognition, structuring a professional sector).

4.1 A few examples of new healthcare professions

The profession of **health mediator** in France, for example, is seen by many as a significant step towards bringing health systems and communities closer together (79). This is proof that the issues of health promotion, access to care, the social determinants of health and disease prevention will be given greater consideration in the years to come, compared with the aspects of care that have hitherto centralized the majority of professional and financial efforts. Others feel that this innovation is more akin to an adaptation of the community health worker function, and wonder whether it is really an innovation or a transfer of a solution that has been known and implemented for decades in other regions.

The recent emergence of the profession of **advanced practice nurse**⁹² (APN), also in France - this profession already existed in many countries beforehand - is said to represent a partial response to the shortage of doctors, by allowing a certain number of tasks previously carried out by doctors to be carried out by APNs, thus freeing up doctors' time to carry out other tasks (80). The dynamics of the proliferation of *mid-level health workers*, at

European cities, presented the case of Grenoble, France, and most of the examples concerned the preparation and response to heat waves.

⁹⁰ For more details on the EPC, see Part 3, section 3.7.

⁹¹ For more information on the competency-based approach in public health, see the article "L'approche par les compétences pour anticiper les nouveaux métiers: le cas de la santé publique", available at the following link: <https://hal.ehesp.fr/hal-02504910> (accessed 03/03/2023).

⁹² While the law introducing advanced practice nursing for paramedics in France dates back to 2016 (law no. 2016-41 of January 26, 2016), the first classes of advanced practice nurses only began their training in 2018 and will complete it in 2020. It is therefore a recent initiative, but there are nonetheless some studies on the initial results, and we can compare the implementation of this initiative in France with its equivalent in other countries: "advanced practice nursing".

In particular, they hope to train more healthcare professionals more rapidly and at lower cost, capable of carrying out essential medical tasks and procedures necessary for the good health of populations. However, in the eyes of other players, creating new professions is not really the priority, as the first priority would be to multiply the number of healthcare professionals working within the various professions and trades already in existence. And the use of intermediate healthcare professionals for certain tasks would also be a form of double ^{standard93}.

The many professions linked to the **digitization of healthcare and to technical and scientific developments** in the field also hold great promise for the future. Some futuristic visions of tomorrow's healthcare come close to science-fiction scenarios, which are currently not very operational, particularly in those countries most affected by shortages of healthcare professionals. But other recent innovations - in terms of medical analyses, rapid screening tests, molecular tests with immediate results at the patient's bedside, patient monitoring and improved adherence to treatment thanks to mobile health (*m-health*), assistance with remote surgery or even the delivery of medicines to remote areas by drone, etc. - are all very real avenues of solution, opportunities to be seized, some of which will profoundly transform certain healthcare professions and give rise to others.

4.2 The creation of a new business: challenges and difficulties

There is little academic work on new healthcare professions in general, or on the process of creating and structuring a new profession. An article published in 2008, entitled "Essai de modélisation du processus de naissance des métiers: cas des métiers de soins", looked specifically at the case of the profession of "infirmière diplômé d'Etat" (IDE) (81). In 2016, the same author published another article: "L'innovation au cœur de la dynamique des métiers: application au secteur de la santé" (Innovation at the heart of job dynamics: application to the healthcare sector), which compared the cases of IDEs, nurse hygienists, genetic counsellors and dosimetrists (82). It's clear from these examples that the notion of "new profession" can refer either to a new profession, or to a new function assigned to a new profession.

The results are more numerous when we look at the emergence or creation of a particular trade, in a defined context. Health extension *workers* (HEWs) in Ethiopia, or surgical technicians in ^{Mozambique94}, for example, have been the subject of numerous studies over the years (83-85), documenting the performance of these health professionals and comparing them with the performance of health professionals performing the same tasks before the creation of these ^{professions95} (86-88). Other studies highlight aspects specific to the emergence of these professions, their contributions to the smooth running of healthcare systems: their proximity to communities in the case of Ethiopian health extension workers and the positive impact on patient experience (89,90), or their ability to promote access to certain drugs or healthcare devices - in maternal and reproductive health or in the management of tuberculosis or HIV, for example (91,94). In Ethiopia, for example, while HEWs are paid, the community health system also relies on the unpaid work of women in these same communities (95). Surgical procedures performed by non-physicians also have certain limitations, which have recently been documented (96).

⁹³ "The creation of a new occupational group is a solution of last resort. In terms of acceptability and feasibility in relation to other professional groups, it is extremely complicated and complex. There are numerous possibilities for improvement in other areas (...). Mid-level healthcare professionals are not the solution. Would you accept the idea of delegating surgery if your child was on the table? (Interview 15).

⁹⁴ Surgical technicians are non-physician health personnel trained to perform certain essential surgeries such as caesarean sections, amputations and hysterectomies (83). Less documented than the case of Ethiopia, this example of the creation of a health profession to meet the needs of a population has proved quite conclusive in the studies that have been carried out (84,86). Similar initiatives have been replicated in Tanzania and Malawi.

⁹⁵ See the article "How Mozambique made up for the lack of qualified surgeons" published on the internet on May 5, 2015 (available at the following link: <https://fr.globalvoices.org/2015/05/05/185553/>, accessed on 06/21/2022). See also the following internet articles "Mozambique's life-saving surgeons aren't doctors at all," published April 27, 2015, and "Mozambique: Making Do in the Operating Room", published on May 12, 2015 and respectively available at the following links: <https://theworld.org/stories/2015-04-27/mozambiques-life-saving-surgeons-arent-doctors-all> and <https://legacy.pulitzercenter.org/reporting/mozambique-making-do-operating-room>, accessed on 06/21/2022.

Another phenomenon is the creation of new professions specifically dedicated to tasks previously performed by certain healthcare professionals. This is the case, for example, of the health logistician profession in Burkina Faso (97).

Box 3. The creation of a new profession: the example of health logisticians in Burkina Faso

Prior to the official creation of the health logistician profession in Burkina Faso in 2011, the management of health product supplies was delegated to pharmacists and pharmacy technicians, but faced with frequent stock shortages, the Burkina Faso Ministry of Health and the Bioforce Institute (Lyon), supported by funding from expertise France (France Expertise internationale at the time) proposed the creation of a new profession: health logistician. While health programs generally use their own logistical channels and implement vertical approaches, the challenge here was to take a cross-functional approach, to strengthen the national health system as a whole and not just on specific diseases.

Significant efforts have been made to create an environment conducive to the professionalization of health logistics: a three-year strategic plan has been drawn up, an initial training program has been designed, pilot projects have been set up in three regions, and the country's legislation has been revised to enable the profession of health logistician to be created and integrated into the health system. A professional master's degree in health logistics has been specially created at the National School of Public Health in Ouagadougou, and continues to train new students every year.

Several success factors can be identified that will benefit other similar initiatives: a thorough understanding of the context, awareness of the importance of human resources in logistics, the involvement of political authorities, coordination with international efforts (here, through the People that Deliver initiative) and the advantages of associating a national institution (the Ministry's General Directorate of Pharmacy, Medicines and Laboratories) with a highly committed partner (the Bioforce Institute).

While this process of professionalization has enabled us to considerably improve logistics management and respond to complex supply issues, typical of those found in other West African countries (see figure), the creation of a new profession is not a miracle solution either, and several difficulties have arisen: the emergence of a form of competition with pharmacists and pharmacy technicians, who felt that part of their tasks had been taken away from them; the difficulty of coordinating with other Ministry of Health players involved in supply issues; the need to guarantee salaries and think about career development within the health system; the difficulty of handing over and institutionalizing this new profession over the long term (Arsène Ouédraogo, who set up the scheme, is still very much involved in student follow-up, professional integration, etc.).

Even when planned with the utmost care, and when they do indeed respond to major needs in the healthcare system, the creation of new healthcare professions often provokes resistance, particularly from healthcare professionals already in post⁹⁶. A recent report by the Cour des Comptes on advanced practice nurses in France showed that "reluctance on the part of doctors is the first and most fundamental obstacle" to "the deployment of advanced practice" (80).

While informing and raising awareness among existing healthcare professionals about the benefits and opportunities of creating a new profession that will affect their practices are essential steps, they are not always enough. Prior consultation with representatives of the various professional associations and unions

⁹⁶ "The question of the hierarchical relationship between professionals in the new profession and those in existing professions arises. [...] Overworked healthcare professionals, who could benefit from the creation of a new profession to relieve them of some of their tasks, are often the fiercest opponents to the creation of such professions. [...] People are not ready to innovate and create. They're stuck in their heads. (interview number 18).

"Demedicalized screening and the development of rapid screening tests, considered today as innovations in the fight against the disease, are a major step forward against HIV in France, for example, but which have existed for several decades in sub-Saharan Africa, are practices that provoke corporatist reactions and have to contend with the biologists' lobby" (interview 2).

can help overcome certain difficulties. Once the profession has been created, its structuring and the creation of a representative body for people working in this profession, with representatives to exchange and negotiate with representatives of other professions, is a necessity to try and overcome these obstacles.

Conclusion

The most salient point among the recent dynamics and evolutions of the healthcare professions is certainly that of the shortage. While it has been clearly demonstrated in this first part of the report that assessing the number of healthcare professionals is a complex issue (which professions should be included? should estimates be made in relation to needs, demands, or the number of healthcare professionals required to achieve universal health coverage? etc.), it is essential to bear in mind the global, and profound, dimension of the shortage.

This shortage is obviously linked to the structural under-funding of the healthcare sector. Despite studies, reports and international events demonstrating the extent to which healthcare should be considered an investment, rather than a cost. The essential role played by caregivers in the smooth running of a healthcare system, and of society as a whole, has been amply demonstrated by the Covid crisis. This importance has been regularly reaffirmed since the first major WHO report on the subject in 2006, notably at the high-level commission on employment and economic growth, co-chaired by France and South Africa, in Lyon in 2016. The healthcare professions have been the focus of numerous international initiatives, highlighting the importance of working conditions, the need to provide security for healthcare professionals, and the development of strategies to make healthcare professions more attractive and retain healthcare staff in remote areas. Numerous recommendations have been put forward by the WHO, the OECD and the ILO to help healthcare professions evolve.

This first section shows that, while the last fifteen years have been marked by concrete developments in the organization of professions (e.g., the integration of new technologies, the increased visibility of public health professions, the creation of new professions such as health mediators or advanced practice nurses), these developments are relatively weak compared to the scale of the challenges. How can we explain this relative inertia and lack of change in the organization of healthcare professions over the past few decades, this difficulty in moving the system forward and creating new professions? From an institutional, legislative and organizational point of view, we need to dig deeper and understand what regulatory mechanisms, corporatist logics and lobbies are preventing healthcare professions from evolving more rapidly.

While the vast majority of the trends analyzed in this first part have a universal dimension, countries on the African continent are particularly hard hit by the crisis affecting healthcare professionals. The second part of this study will focus on the specific challenges facing this part of the world.

Part 2. Focus on Sub-Saharan Africa

In this second section, we will focus on data specific to the WHO African Region, with particular reference to French-speaking Africa. As early as the publication of the 2006 WHO World Report, "Working together for health" (1), it became clear that the greatest shortage of healthcare professionals in the world concerned the WHO African Region, since 36 of the 57 member states facing a worrying ^{shortage}⁹⁷ were in Africa.

A study, published in 2022 in the journal *BMJ Global Health* on "The status of the health workforce in the WHO African Region: findings from a cross-sectional study" (98) and covering 47 African countries, shows that :

- The average ratio is 1.55 healthcare professionals (doctors, nurses and midwives) per 1,000 people. This is well below the density threshold defined by the WHO at 4.45 health professionals per 1,000 people needed to achieve universal health coverage.
- Only four countries (Mauritius, Namibia, Seychelles and South Africa) have surpassed the WHO ratio of health personnel to population.
- The Region's healthcare workforce is also very unevenly distributed from country to country, ranging from **0.25 healthcare professionals per 1,000 people in Niger** (the lowest ratio in the Region) to 9.15 per 1,000 people in the Seychelles - the highest ratio in the Region.

The same study estimates that there will be a shortfall of 6.1 million healthcare professionals in Africa by 2030 (out of a global shortfall of 14.5 million), an increase of 45% since 2013, when the last estimates were made. While we can always question the criteria on which these estimates are based, it is nonetheless important that they continue to grow in magnitude, as time goes by.

The health human resources crisis affecting African countries is multifactorial:

- This crisis is obviously linked to the continent's demographic dynamics. Africa will account for the lion's share of global population growth, with a population expected to increase by 1.3 billion between 2017 and 2050, followed by Asia (1).
- It is also linked to the scale of the health problems affecting the continent. The African region has both the lowest density of human resources and the highest burden of disease (99), facing the double burden of infectious and non-communicable diseases.
- Finally, the crisis in human resources for health is linked to institutional factors in many African countries: inadequate training capacities of uneven quality, shortcomings in human resources analysis, planning and management, difficulties in maintaining health personnel at decentralized level, lack of public funding to recruit sufficient numbers of professionals, international mobility of health personnel, etc. In 2023, 37 of the 55 countries considered particularly fragile in the *WHO health workforce support and safeguards* list (24) belong to the WHO African region.

With this region of the world facing a particularly alarming shortage of healthcare professionals, this second section looks at the specific needs characterizing the healthcare professions of tomorrow in Africa, but also - and above all - at the solutions that have been put in place in recent years, and could inspire other countries in other contexts. While it is difficult to obtain comprehensive data on practicing healthcare professionals in all countries, a number of publications are devoted to the job market for healthcare professionals

(100). We will highlight the data available for French-speaking Africa, but there are few of these, and some results from other African countries or studies on a regional scale present interesting results.

⁹⁷The WHO has described this situation as a "global *health workforce crisis*" (97). "According to the World Health Report 2006, the African Region is the one where the global shortage of health workers is most acute." (2)

Six sections make up this second part, focusing on trends and issues that specifically affect sub-Saharan African countries:

- The issue of the shortage of healthcare personnel in sub-Saharan Africa: not only will we need to estimate the scale of this global shortage (and refine the analysis by job category, to achieve 70% universal health coverage), but we will also need to think about the "skill mix" issue: what is the right balance between the different skills, the different jobs, if we want to optimize healthcare provision?
- Community health workers are an essential component of healthcare systems. Sometimes disparaged, today they are seen by many as an interesting option for overcoming the growing shortage of personnel. We shall see that this raises many issues of professionalization and integration into the health system (second section).
- The financial stakes and the need to invest more in healthcare personnel in Africa, which implies generating a larger tax base and increasing training capacity, which is currently largely insufficient to meet tomorrow's needs. The issue of training quality, which is highly uneven across the continent, and the questions raised by its evaluation are also addressed in this section: what accreditation systems should be put in place to improve the quality of tomorrow's care? (section 3).
- The challenges of building loyalty in rural areas. As the African continent is particularly affected by problems of distribution of healthcare workers across the continent, we will analyze in the fourth section the effect of the various retention strategies implemented on the continent, and the prospects they offer for making access to healthcare more equitable, from one region to another (section 4).
- The development of the private sector, whose growing importance in Africa is, as we shall see, both a major opportunity and, if not properly managed, a risk for healthcare systems (section 5).
- The challenges of human resources policies in Africa: how to strengthen the governance and management of human resources policies for health at national level (section 6).

1. Tomorrow's healthcare professions in Sub-Saharan Africa: first and foremost a question of numbers

1.1 Far too low a density

In 2021, the WHO Africa Region Office (ARO) published the results of a survey conducted in 2018-2019 in the region's 47 countries (101) to count the number of healthcare professionals stationed in these countries. In total, more than 3.5 million healthcare professionals were surveyed⁹⁸.

The total density of healthcare professionals was estimated at 2.9 per 1,000 inhabitants, whereas the minimum threshold for achieving 70% universal health coverage (UHC) was estimated at 13.4 per 1,000. At the very least, the number of healthcare professionals working in the region would have to be quadrupled. What's more, this average masks major differences between countries: a quarter of the region's healthcare professionals were based in Nigeria, 13% in South Africa and 9% in Algeria, while five of the 47 countries (Benin, Madagascar, Niger, Central African Republic and Chad) had fewer than 0.5 healthcare professionals per 1,000 inhabitants.

An observation that goes beyond the "doctors, nurses and midwives" category

This survey provides data beyond the three categories traditionally considered in most studies of healthcare professionals: doctors, nurses and midwives. Here, in fact

⁹⁸ This number is probably an underestimate, as figures for the private sector were difficult to obtain for the governments of most of the participating countries. The report also presented sector-specific data for the public, private and private non-profit sectors, with some striking results (85% of healthcare professionals in the public sector).

Nevertheless, the widespread practice of working in both the public and private sectors has undoubtedly made it possible to take into account a proportion of healthcare professionals working in the private sector. In another institutional report, the Secretariat of the *Southern African Development Community* (SADC), which groups together 16 of the 47 countries in the sub-region, notes that "the data [from the 2018 ARO survey] are similar to those included in various regional and global reports and have been provided in some cases by member states" and that "despite their quality issues and the resulting approximation of estimates" these data "are indicative of several issues" and allow useful comparisons between countries as the data collection conditions were similar for all countries (and therefore had likely comparable biases) (102) (p.16).

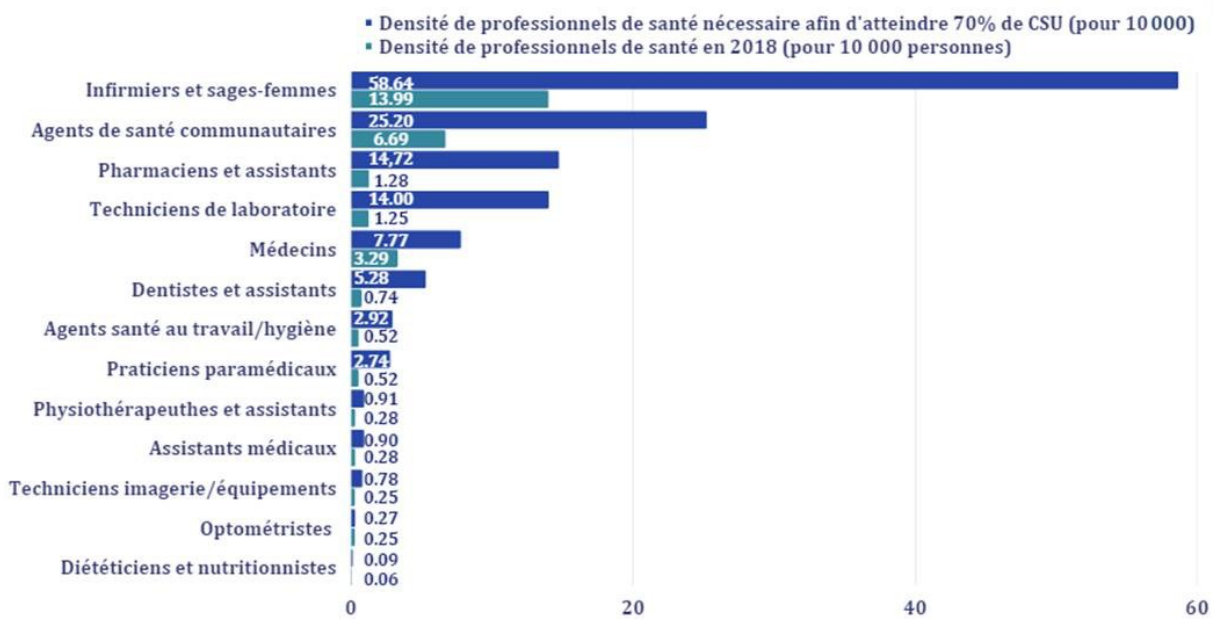
a list of the healthcare professions identified in this survey: general practitioners, specialist doctors, nurses, midwives, dentists and technicians, pharmacists and technicians, laboratory staff, medical imaging and other medical equipment technicians, public health and environmental health professionals, executives and managers, administrative and support staff, community health workers (CHWs), etc⁹⁹. These various professions were then grouped into 13 categories in ISCO- 08.

The willingness to collect data for so many categories of healthcare professions is representative of a general dynamic in global healthcare to give greater recognition to the importance of professions that are key to the smooth running of healthcare systems, but which may lack visibility. These professions may be overlooked in planning documents for the training and employment of tomorrow's healthcare professionals. The production of figures on the number of people working in these different job categories makes it possible to compare densities between countries in the WHO African region. It also makes it possible to compare the 2018-2019 density with the theoretical density that would have to be reached to achieve a UHC of 70% in this region.

1.2 A major gap to achieve Universal Health Coverage of 70% by 2030

Figure 7 below shows, for each job category, the gap between the density of healthcare professionals in post at the time of the 2018 survey and the theoretical density that would need to be reached by 2030 to have a UHC of 70% in the WHO African region.

FIGURE 7: COMPARISON BETWEEN THE DENSITY OF HEALTHCARE PROFESSIONALS IN THE WHO AFRICAN REGION IN 2018 (PER 10,000 PEOPLE) AND THE THEORETICAL DENSITY REQUIRED TO ACHIEVE OVER 70% UHC



Source : Adapté de Ahmat A, Asamani JA, Abdou Illou MM, Millogo JJS, Okoroafor SC, Nabyonga-Orem J, et al. Estimating the threshold of health workforce densities towards universal health coverage in Africa. *BMJ Glob Health*. 2022 May;7(Suppl 1):e008310. TABLE 5 p.7

To make projections about future training and recruitment needs for healthcare professionals, it is necessary to be able to compare the number of healthcare professionals currently working in a given population with the number of new recruits.

⁹⁹ This list is non-exhaustive, as the survey included a category for "other healthcare professions" (which may explain why the professions included in the occupational groups used in the analysis - see figure X - are not quite identical to the initial list).

data¹⁰⁰ with the minimum threshold of healthcare professionals required to achieve satisfactory health in this population¹⁰¹.

According to the study conducted by the WHO ARO in 2018, an average density of 134 healthcare professionals per 10,000 inhabitants (including 8 doctors and 59 nurses or midwives) would be needed to achieve a UHC of 70% in Africa. By way of comparison, a recently published Global Burden of Disease study estimated that a minimum of 21 doctors and 71 nurses and midwives per 10,000 people would be needed to achieve a UHC of 80%¹⁰². In the same article, the estimated average density in 2019 for the Sub-Saharan Africa region¹⁰³ was 3 doctors and 18 nurses and midwives per 10,000 people (74). The shortage of doctors in sub-Saharan Africa was therefore estimated at 1.9 million doctors and 5.6 million nurses and midwives in 2019.

1.3 Representation of the ideal *skill-mix*: an illustration of the diversity of healthcare professions required for the proper functioning of healthcare systems in Africa

The results of both studies are of the same order of magnitude, showing a very significant shortage of healthcare professionals in the WHO African region. Nevertheless, the two studies differ on one important point: the estimate of the "*skill mix*" required, i.e. the balance between the types of professions needed and the number of people who would need to be trained in these professions.

In the Global Burden of Diseases study, a minimum of 20.7 general practitioners or specialists, 70.6 nurses or midwives, 8.2 dentists or assistants and 9.4 pharmacists or assistants would be needed for an 80% UHC worldwide. In other words, for every doctor trained and employed, just over 3 nurses or midwives would be needed. This balance is very different in the calculation of the WHO Africa Region office. For a UHC of 70% in the WHO African Region: 58.64 nurses and midwives for 7.77 doctors, 5.28 dentists and assistants and 14.72 pharmacists and assistants, i.e. almost as many dentists as doctors, twice as many pharmacists as doctors and between 7 and 8 times as many nurses and midwives as doctors.

It's not surprising that these estimates vary, the former being calculated on a global scale for 80% coverage and the latter on a WHO African region scale for 70% coverage, but it is worth highlighting the crucial importance of the *skill-mix* issue when considering tomorrow's healthcare professions. Indeed, the number of healthcare professionals to be trained and hired for tomorrow depends on the health context of the country or region concerned, the division of tasks between healthcare professionals in the country and the estimated needs to be covered in a given population. Thus, the *skill-mix* considered "ideal" in the WHO's Africa region will not be the same as that which would characterize the Europe region, for example.

Figure 11 below provides a visual representation of the *skill-mix* required in the WHO African region to achieve a UHC of 70%. We therefore need to train and recruit more healthcare professionals for tomorrow, in greater numbers for some professions than for others.

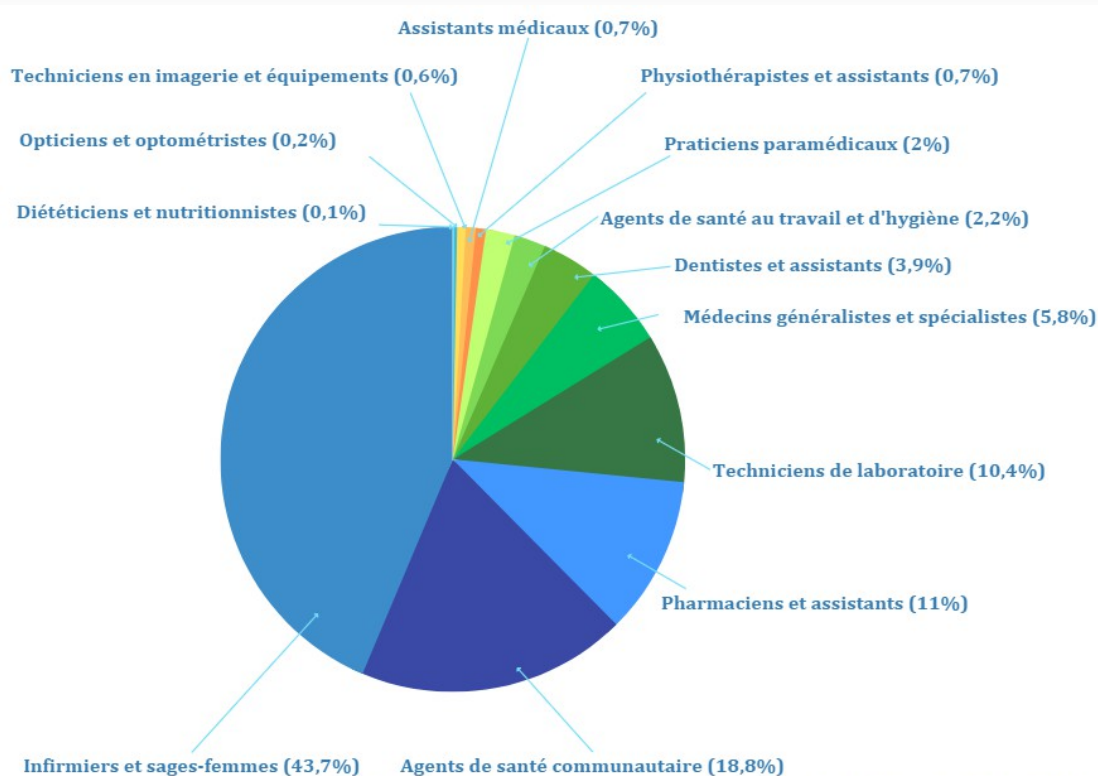
¹⁰⁰ Ideally, we want to be able to estimate the number of healthcare professionals who will be in post at a given date, as in the French DARES study published in 2022 on professions in 2030, for example, the results of which for the healthcare sector were presented in part 1 of this report (29). However, in the absence of such models, we can also rely on current data to try and orient future trajectories.

¹⁰¹ This state of health is often estimated using precise indicators: the number of doctors, nurses and midwives needed for 80% of births to be attended by a health professional; the number of doctors, nurses and midwives needed for a maternal mortality rate of less than 50 per 100,000; the number of health professionals needed for 80% universal health coverage, etc. For a precise overview of the thresholds used in global health over the last two decades, see the WHO publication "*Health workforce thresholds for supporting attainment of universal health coverage in the African Region*" (103), in particular pp.2-4.

¹⁰² The survey carried out by the WHO's Africa Region office covered many other healthcare professions in addition to doctors, nurses and midwives. The minimum threshold calculated from this study for all healthcare professionals was therefore much higher: 212.68 per 10,000 people to achieve a UHC of 80% (103).

¹⁰³ This is not the WHO Africa region, but the *Global Burden of Disease* classification: 46 countries divided into 4 regions (Central, Eastern, Southern and Western Sub-Saharan Africa).

FIGURE 8: IDEAL REPRESENTATION OF PROFESSIONALS TO ACHIEVE 70% CSU IN THE REGION WHO AFRICA



Source : Adapté de Ahmat A, Asamani JA, Abdou Illou MM, Millogo JJS, Okoroafor SC, Nabyonga-Orem J, et al. Estimating the threshold of health workforce densities towards universal health coverage in Africa. *BMJ Glob Health.* 2022 May;7(Suppl 1):e008310. TABLE 5 p.7

This figure therefore highlights the importance of certain categories of healthcare professionals in terms of numbers in the WHO African Region, such as nurses and midwives or community health workers. Thus, of the 3.5 million healthcare professionals listed in the 2018-2019 WHO ARO survey, 37% were nurses or midwives and 14% CHWs (98).

According to the WHO, by 2030, the number of healthcare professionals trained and employed in the African region will have to be multiplied by 4.5, in the following proportions: 44% nurses and midwives, 19% CHWs, 11% pharmacists and assistants, 10% laboratory technicians and 6% doctors¹⁰⁴.

Furthermore, this study is the first to propose regional thresholds for so many different categories of healthcare professions. These include, for example, "environmental, occupational health and hygiene professionals", "medical assistants"¹⁰⁵ and "physiotherapists". In addition, we've included a new section on "dieticians and nutritionists", and a distinction between imaging technicians and those working in pathology laboratories. Not only does this give much-needed visibility to professions that are essential but often in the shadows, but this desire to have a more comprehensive view of the healthcare professionals needed to keep a healthcare system running smoothly also enables us to reassess the scale of the shortage: the 2016 WHO threshold of 44.5 doctors, nurses and midwives per 10,000 people is multiplied by three when 13 categories of professions are taken into account (134 healthcare professionals per 10,000 people).

¹⁰⁴ According to the 2018 study, the current proportions between these different professions in the WHO African region are as follows: 37% nurses and midwives, 14% CHWs, 3% pharmacists and assistants, 10.4% laboratory technicians and 9% general practitioners and specialists (101).

¹⁰⁵ Physician assistants in the USA are "intermediate" healthcare professionals who receive a two-year post-graduate education following a four-year Bachelor of Science degree. They play an important role in cancer care, for example.

2. Community health workers: an essential component in many sub-Saharan African countries

The introduction of community health workers (CHWs) is often seen as a response strategy to the global shortage of healthcare personnel and the existence of medical deserts in remote areas, particularly in Sub-Saharan Africa. This section explores the reasons why more and more countries are integrating CHWs into their primary health care strategies, and outlines the changes that will be needed if CHWs are to make a lasting contribution to strengthening health systems.

For the WHO, CHWs *"must be members of the communities in which they work, have been selected by the community, be accountable to the community and be supported by the health system, without necessarily being part of its organization"*. According to the WHO, *"it is increasingly recognized that CHWs and other community-based health workers are effective in delivering a range of preventive, promotive and curative health services, and can contribute to reducing inequalities in access to care"*. The Organization calls on its member countries to invest in CHWs, while following policy and evidence-based guidelines, so as to integrate them sustainably into health systems and improve and strengthen their capacities (104).

In a literature review on health programs involving CHWs, the WHO defines CHWs as *"Community health workers provide health education, referral and follow-up, case management, basic preventive health care and home visits to specific communities, supporting and helping individuals and families to navigate the health and social services system"*. The WHO identifies around six (overlapping) roles that can be entrusted to them (105):

- Provide medical diagnosis, treatment or care;
- Encouraging the use of health services ;
- Health education and motivation for behavior change;
- Data collection and archiving ;
- Improving relations between health system officials and community members ;
- Provide psychosocial support.

According to this review, the success of programs involving CHWs depends, among other things, on the type of task they are given (curative or educational), their prior education and roots in their community, the content of the training, the materials provided and the incentives given to CHWs, as well as the type of health problem targeted.

Box 4. The origin of Community Health Workers

The concept of community health workers is generally considered to have originated in China in the 1920s. The "Barefoot Doctors" were peasants who received three months' training in first aid, health education, vaccinations and even what we would today call *WASH* (Water, Sanitation and Hygiene), and were deployed in communes where infant mortality was highest and life expectancy lowest. (103). Two key elements of the program - the length and simplicity of training and the ambition to address urgent primary health problems - would later become the cornerstone of what defines CHWs today. Later, in the 1960s, the need for new health approaches to meet the needs of rural, isolated and poor populations in developing countries became progressively more apparent. The "Barefoot Doctor" model thus served as the guiding concept for the first CHW programs in several countries, particularly in Latin America.

The importance of formalizing and promoting these programs worldwide was highlighted in 1978 following the Alma-Mata Conference - the first major world health conference - at which primary health care was identified as the key to achieving the goal of "Health for All". Indeed, the declaration that followed this conference explicitly states that CHWs have an essential role within primary health systems (103).

In the WHO African Region, programs with CHW components have played a key role over the past two decades. During the Millennium Development Goals phase, from 2000 to 2015, the continent's progress towards health goals¹⁰⁶ fell short of expectations. Despite the mobilization of CHWs to improve access to care, one of the main problems was the availability of qualified health personnel to meet the scale of needs and extend interventions, particularly in the most isolated areas. The use of CHWs varies greatly from one country to another: the three leading countries being Uganda, Ethiopia and Rwanda, which have more than two CHWs per 1,000 inhabitants (9). With the advent of the Sustainable Development Goals, and the international desire to move beyond a "vertical approach" by disease to horizontal programs and interventions aimed at strengthening health systems, CHWs have seen their importance renewed in a new light, as a potential integral part of health systems (106).

2.1. Relying on community health workers, a strategy adopted by many countries

The involvement of CHWs in the fight against the Ebola epidemic in West Africa in 2014-2015 helped to set this in motion. Despite weak service provision, policy confusion and the overwhelming nature of the epidemic, many CHWs remained active and, when given clear guidelines, continued to provide services within their communities, enabling them to recover more quickly (107); this prompted the WHO, governments and development actors (NGOs, major global health initiatives) to review their role

¹⁰⁶Millennium Goals 4 - Reduce child mortality; 5 - Improve maternal health; and 6 - Combat HIV/AIDS, malaria and other diseases.

in the delivery of health services, and to initiate discussions on the training, deployment and remuneration of CHWs as official health workers (108).

The Ethiopian example illustrates the categorization of two types of community health worker: category 1 groups together the most qualified workers, or those offering the most comprehensive range of services, while category 2 CHWs provide a more limited range of services and are generally supervised by category 1 workers.

Box 5: Integrating community health workers into the health system: the example of health extension workers in Ethiopia (106)

Implemented in 2004, Ethiopia's "Health Extension Program" employs professional CHWs, known as "Health Extension Workers" (HEWs), and volunteer CHWs, known as volunteers for the "Army for Health Development" (AHD).

AVSs receive one year's training, are paid as formal employees, and are responsible for health promotion, prevention and treatment of illnesses such as malaria, pneumonia, diarrhea and malnutrition in the community. ADS members, charged with encouraging health-promoting behaviors and the use of primary health care services, are not remunerated, but receive non-financial incentives (formal recognition, ongoing mentoring, certificates and recognition at community celebrations). By 2020, Ethiopia had around 40,000 AVSs and some three million ADS volunteers. These agents and volunteers are supervised by district supervisory teams comprising a health agent, a public health nurse, an environment/hygiene expert and a health education expert.

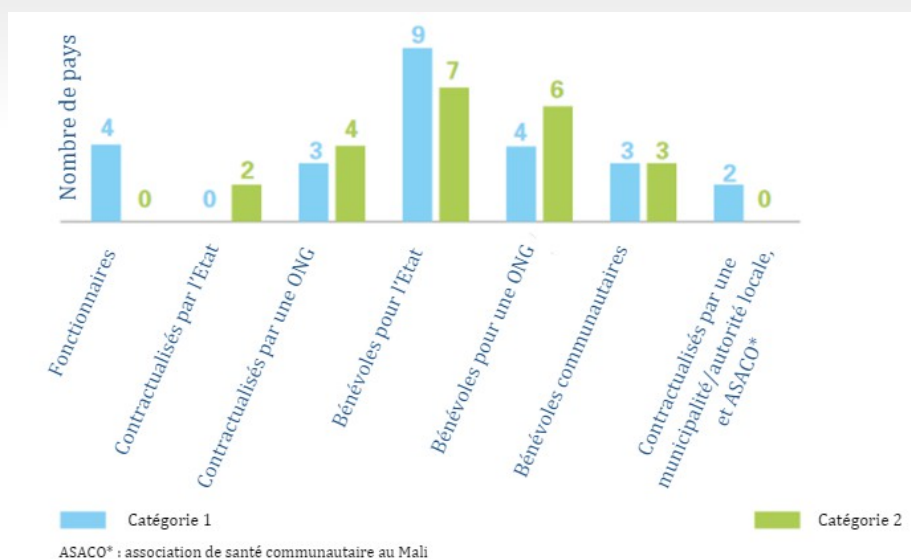
An analysis of the program's strengths, weaknesses and opportunities highlighted deployment and implementation problems (late supply of equipment, lack of supervision or training) and gender inequalities (as the vast majority of AVSs are young women, they suffer from a lack of community confidence, or lack career development opportunities).

Despite these difficulties, the program has had a major positive impact on the health of the population. For example, infant mortality fell by a third between 2006 and 2013, antenatal care coverage reached 68% of women in 2009, and the rate of use of insecticide-treated mosquito nets reached 40% among pregnant women and children under 5 in malaria zones as early as 2008.

A Muskoka / Unicef study (109) analyzed the status and types of contract of CHWs in 20 countries¹⁰⁷ in Central and West Africa, according to two categories: category 1 includes qualified CHWs, with more extensive service packages, while category 2 includes CHWs who are not necessarily qualified, but who are sometimes supervised by category 1 CHWs.

Figure 9: Status of community agents in West and Central Africa in 2022

¹⁰⁷ The twenty countries included in the study are: Benin, Burkina Faso, Cameroon, Central African Republic, Chad, Congo, Côte d'Ivoire, Democratic Republic of Congo, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone and Togo.



Source : traduit de l'anglais depuis le rapport *Community health policies and programmes UNICEF 2023*

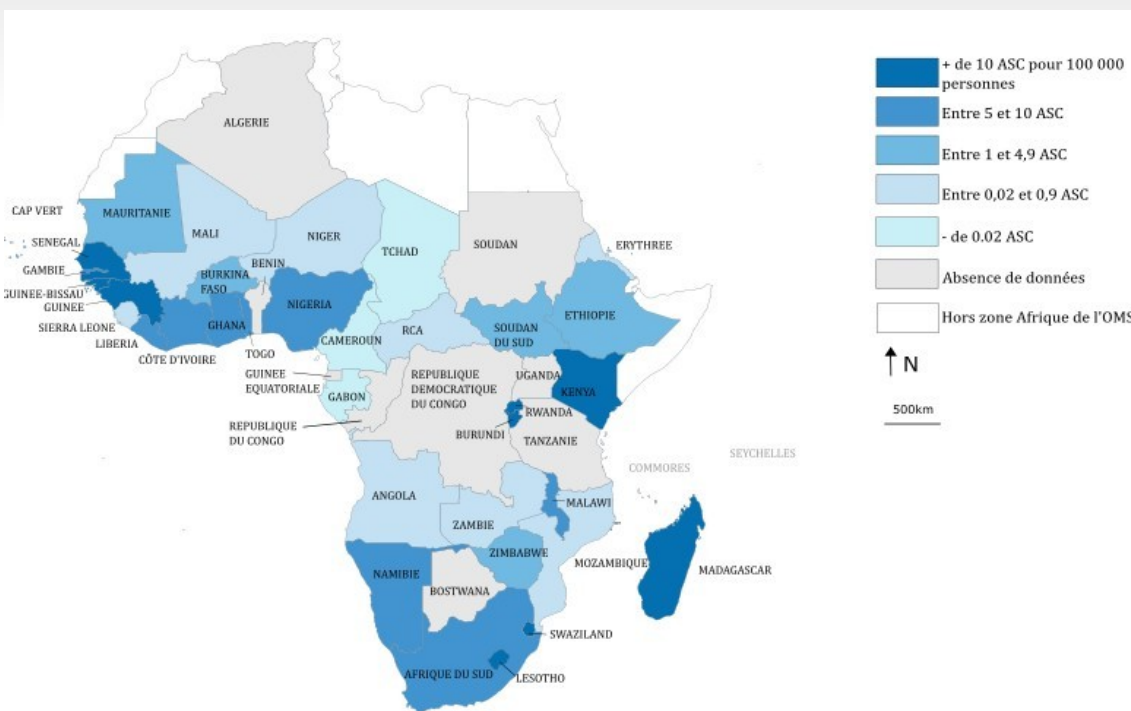
The "volunteer for the state" type of contract is predominant for both categories. In four countries (Gambia, Ghana, Guinea and Nigeria) category 1 CHWs may have civil servant contracts, and it is interesting to note that only half the countries officially recognize CHWs in the public health code.

The Ivorian example is interesting: in 2017, Côte d'Ivoire decided to reform the status of CHWs. Until 2017, several types of agents existed: relays, mobilizing agents, community advisors, community health agents, community-based contraceptive distribution agents, etc. It was then decided to opt for the single terminology "community health agents", broken down into three new categories: : 1) basic CHWs dedicated to health promotion(essential family practices, water and sanitation, etc.), 2) community advisors (generally involved in specific health themes (HIV, tuberculosis, sexual health, malaria, etc.) and 3) CHW coach/supervisors: experienced CHWs identified to support and supervise around ten basic CHWs in the health zone.

In terms of remuneration levels, in more than half of the countries, CSAs have a remuneration of It's not a matter of a formal salary, but of "motivation". For category 1 (qualified CSAs), no level of education is required in Sierra Leone. Literacy and numeracy are required in Cameroon, CAR, Chad, DRC, Liberia, Niger, Senegal and Togo. Primary education is compulsory in Burkina Faso, Guinea Bissau, Mali, Mauritania and Nigeria. Finally, Benin, Congo, Côte d'Ivoire, Gambia, Ghana and Guinea require CSAs to have a secondary level of education.

Although numerous programs have been set up in Africa, there are still major disparities in the density and number of programs integrating CHWs into the healthcare system - with varying impacts on the health of populations. The diversity of their status (they may be attached to the state or to NGOs, salaried, indemnified or voluntary), and the absence of formal recognition of this function in a large number of countries, make it difficult to obtain reliable data. CHWs are listed in the 2008 International Standard Classification of Occupations (ISCO) (group 3253), although they were initially assimilated to clinical officers and medical assistants. In terms of density, the average number of CHWs per 100,000 inhabitants in the African region is nevertheless estimated at 4.5, with 15 countries above this average.

Figure 10 - Map of CSA density per 100,000 people in WHO African Region countries in 2021



Source : carte réalisée par les auteurs avec Phlcarto : <http://phlcarto.free.fr>, d'après la figure 8 du rapport de l'OMS The State of the health workforce in the WHO African region - 2021

A detailed table of CHW densities by country can be found in the appendix. Although the majority of countries do not have a formal, dedicated national strategy, with the exception of some such as Niger, the scientific literature is unanimous on the fact that CHW frameworks and programs have enormous potential for strengthening health systems and improving the health status of populations in Sub-Saharan Africa (110). Reducing these disparities through the deployment and creation of programs involving CHWs is therefore a major challenge for countries in the region.

While the modalities and key success factors of such programs differ according to the model and strength of the health system, the potential for strengthening health systems through CHWs is not specific to Sub-Saharan Africa or to low-income countries. The development of healthcare mediation in France is a case in point. The profession - which largely emerged in the early 90s thanks to the involvement of civil society in the fight for the rights and recognition of HIV/AIDS sufferers - is now widely recognized as an essential tool in the fight against social inequalities in health. The first university diploma was awarded in 2012, the profession has been recognized and structured by the Haute Autorité de Santé since 2017, and it is estimated that between 750 and 1,000 health mediators are currently working in France. The report by the Inspection Générale des Affaires Sociales (IGAS) submitted to the government in July 2023, makes 10 recommendations to encourage the deployment of healthcare mediation in France (111).

2.2. Community health workers: health professionals like any others? Issues of professionalization and conditions of integration into the healthcare system Today, the main obstacles encountered in programs involving CHWs are linked to their lack of recognition and integration into the healthcare system¹⁰⁸ : recruitment difficulties, drop-outs or reduced commitment, deficiencies in supervision and training, lack of collaboration with healthcare staff, low rates of use of CHWs by individuals (110). Face

¹⁰⁸ "Community health workers have no status, are not recognized and are very poorly paid. Their job is linked to the project that employs them, and their job description is specific to a disease or a donor. They are not recognized by the Ministry of Health, except in certain countries (South Africa, Ethiopia, Rwanda) where selection and training criteria are well defined" 12.

With this in mind, the challenge is to standardize existing programs in order to pool governmental and non-governmental efforts and move away from the informal nature that characterizes the CSA function in many countries.

There are currently several frameworks, based on HSR research and the study of existing programs, proposing conditions for integration into the CSO health system; with variations depending on the level of strength of the country's health system (countries with weakened health systems, countries making progress in strengthening their health systems, economically stable countries moving towards CSU) (108). The main guidelines governing this integration are as follows (104):

- **Establishment of selection criteria** in relation to prior education, community membership and acceptance, gender equality (in some cases, women and men), etc. contexts), or personal qualities and experience;
- **Creation of CSA typologies**, with different models of service provision, type of incentives or level of training, and roles defined according to context
health¹⁰⁹ (state of health system, distribution of HHR, type of health problem, size of target population, etc.).
- **Formalizing the employment of CHWs**, by creating legal frameworks, framing their work with contractual agreements, establishing financial reward systems, and clarifying their relationship and collaboration with other healthcare professionals.
- **Harmonization of training**, by establishing initial training courses with different durations and skill levels, leading to official diplomas or certifications, and give access to career development within the healthcare system.

The integration of CHWs also paves the way for the alleviation of social inequalities intrinsically linked to health. Rural and remote areas, where 80% of those most affected by extreme poverty live, are the hardest hit by the shortage of healthcare professionals. The use of formal CHW jobs would not only improve access to care, but also address the challenges of high rates of unemployment, underemployment and informal employment, and create training opportunities within enclave communities (17) .

Finally, gender considerations will have to take center stage in the design of programs to integrate CHWs into the health system, with regional specificities. A regional report conducted by UNICEF in 2019 shows that in Sub-Saharan African countries, CHW positions are held predominantly by men (with a few exceptions, such as El thiofia or the Gambia); ranging from 83% men in Liberia to 60% in Benin (109). This is because men have better access to initial education, more time for non-income-generating activities, and often enjoy greater trust from their communities (112). Such programs must therefore be designed to facilitate women's access to these positions, and thus contribute to reducing these inequalities; but also to enhance the value of the health work (family nutrition, assistance to the elderly, child protection, etc.) that they already carry out on a voluntary and informal basis within their communities.

¹⁰⁹ "We could have, for example, "ASC maternal and child illnesses", "ASC non-communicable illnesses", "ASC communicable illnesses" etc." i2.

In conclusion, the current movement towards recognition of the role of CHWs, with a move towards professionalization (as opposed to the model of CHWs linked to vertical programs to combat AIDS or malaria), requires the introduction of recognized training courses (if possible general and not just linked to restricted tasks), a permanent status and a decent salary, integrated into health systems, with opportunities for career development (e.g. towards nursing or midwifery diplomas, for those who wish and have the capacity s).

3. Investing more in the recruitment and training of healthcare professionals: a strategic direction for the future

Training and recruiting healthcare professionals on a massive scale should be a priority, given the colossal current and future needs of the continent's countries. Africa will account for a significant proportion of the 10 million professionals needed between now and 2030, not only because of its very high population growth rate, as we have seen, but also because of the growing number of elderly people who will need to be cared for on the continent. While the population of the "over 65s" will rise from 10% of the world's population in 2022 to 16% in 2050 (113), the rate of growth of this specific group is even faster in low-income countries than in high-income countries. A new approach and a new discourse are therefore needed today, so that the financing of healthcare professionals is no longer seen as a short-term ^{cost}¹¹⁰, but rather as a long-term strategic investment that can strengthen the resilience of African healthcare systems, societies and economies.

The main obstacles to greater investment in human resources in healthcare are financial. The health sector is generally considered to be labor-intensive, and therefore unproductive, and not a priority compared to other sectors, when it comes to making trade-off decisions. The reasons put forward are generally based on economic arguments (limiting the level of public spending, not increasing the debt, etc.).

In the face of these visions, the idea that healthcare has a multiplier effect on inclusive and sustainable economic growth - more than any other sector - is hard to sell. Yet economic arguments can be mobilized to demonstrate the importance of investing in healthcare professionals:

- There is significant potential for job creation in the healthcare sector and, through a multiplier effect, in other sectors (administration, IT, cleaning, agriculture, food, transport, trade, research, etc.). ILO estimates suggest that every healthcare professional job created generates 2.3 jobs in non-health professions, with variations between regions (114).
- Expenditure on training and recruitment of healthcare professionals is negligible compared to the economic costs of the effects of epidemics (influenza, for example), or future health crises. The economic cost of the COVID-19 crisis, for example, has been estimated at US\$47,700 billion in lost production between 2020 and 2030, more than 17 times the estimated cost of achieving the health-related MDGs. Not investing in the financing of healthcare professionals is not a strategic approach: the indirect cost of inaction far outweighs the investment in healthcare professionals (115).
- Investing in healthcare professionals can also generate substantial economic benefits by promoting health and human capital development, social cohesion, social protection and health security (116).

The COVID-19 crisis highlighted the structural under-funding of healthcare personnel and the inability of healthcare systems, including European ones, to respond to crises (117).

¹¹⁰ "Since 2016/2017 not much progress has been made because investments in HR and human capital are still perceived as expenses and not investments. It's the belief in the Baumol effect: the cost in healthcare personnel is only perceived as a cost and not as an investment" ⁱ¹.

The measures that can be taken to address the shortage of healthcare professionals and increase the number of people trained vary widely from country to country. In Europe, for example, the aim is to abolish *numerus clausus* where they still exist, and to increase the number of practical training opportunities outside hospitals (the number of practical training places limits the capacity of schools). The private sector is playing an increasingly important role in the training of healthcare professionals, beyond nursing schools. Whether in Bamako or Lille, private schools are training doctors, marking a major paradigm shift and raising the question of how to regulate this new offering (accreditation system, validation of diplomas by national examinations, access arrangements for students from disadvantaged backgrounds).

Given the central role of the public sector in health care, it is obviously largely governments' ability to pay that is at issue here. Few African countries devote more than 5% of the state budget to health, despite the Abuja Declaration (118). Above all, a significant number of them have difficulty collecting taxes and generating revenue locally. The avenues most often mentioned in the literature for increasing domestic resources are the fight against tax evasion, the creation of taxes on products harmful to health (tobacco, alcohol), improving the efficiency of spending, and the removal of obstacles to the systematic under-utilization of health budgets in certain countries (regulatory constraints on budget deficit or debt levels, late release of funds, overly restrictive bureaucratic standards, etc.). Weak public financial management systems in the healthcare sector have led to endemic under-utilization of healthcare budgets in low-income countries, resulting in a vicious circle of reduced funding in subsequent years (119), particularly for healthcare professionals.

Recourse to international funding may also be an option, recommended by the Global Strategy on Human Resources for Health in 2016 (6). That year, only 4% of development aid for health was dedicated to human resources for health (120). While the volume of development aid dedicated to health personnel has increased since 2016, and even doubled between 2019 and 2020, due to the Covid crisis, it remains low overall (121) and essentially dedicated to short-term training, far from a structural and sustainable strengthening of health systems. From 2016 to 2019, the largest share of development aid for the Health and care workforce (HCWF) was allocated to training (42.4%), followed by activities that support the creation of HRH policies and management plans (27.6%), with 17.5% allocated to other unclassified activities, education (5.3%), personnel costs (4.1%), infrastructure (3.2%) and a negligible amount for health workforce information systems (121).

Some development banks offer mixed financing schemes combining grants, loans and private-sector investment. Benin, for example, has had funding from the Islamic Development Bank's Lives and Livelihoods Fund, based on this model, since 2021. This funding, for which it is still too early to draw conclusions, covers the recruitment, training and deployment of 400 doctors, 400 nurses and midwives, 600 health assistants and over 4,000 community health workers in rural areas.

The United States is the leading donor to healthcare professionals, followed by the UK and Canada. Contributions from the Bill & Melinda Gates Foundation and other governments, notably China, Japan and Norway, have increased considerably over time (121).

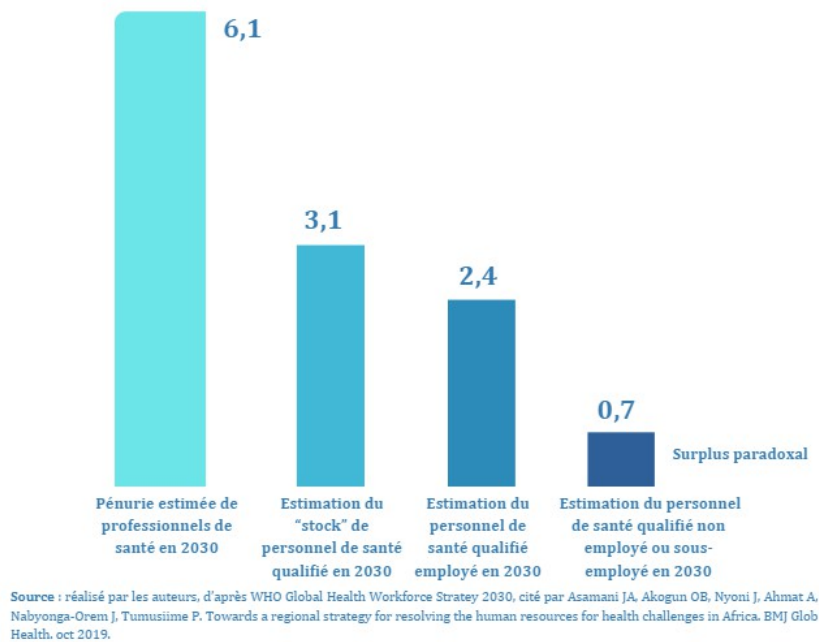
3.1 Creating the tax base needed to recruit young graduates: a matter of urgency

If the number of healthcare professionals in post in sub-Saharan Africa is well below the minimum threshold necessary for satisfactory universal healthcare coverage, this is not only because of the limited number of new healthcare professionals trained each year, but also because of the low number of jobs and the problems of deploying graduates within these jobs. This raises the question of the "**paradoxical surplus**", which occurs when healthcare professionals are trained and needed, but governments do not have the financial capacity to "absorb" them into the healthcare system (122).

This paradox of a surplus of trained but unemployed healthcare professionals in countries where the shortage is particularly acute has been documented several times (123). These young graduates are often forced to practice in other countries of the sub-region, or in other regions, if they cannot find employment in their own country. In this way, the country of origin will have invested in the training of healthcare professionals, but will not benefit from this investment due to the lack of available jobs. In such a context, further investment in training cannot solve the problem.

According to WHO estimates, and as shown in the figure below, of the 3.1 million healthcare professionals trained by 2030 in sub-Saharan Africa, 700,000 (22.6%) are likely to be unemployed (124), and paradoxically constitute a surplus within the shortage.

Figure 11: The paradoxical surplus: estimates of the availability of healthcare personnel in Africa by 2030



Maintaining the practical skills of those trained but not working is also an important issue (as is the risk of emigration to countries able to offer positions). Some countries offer internships to new graduates while positions become available, but this type of arrangement contributes to a precarious status and gives the illusion that the shortage is less acute.

Some countries are organizing themselves on a sub-regional scale to pool job offers and multiply professional opportunities for young graduates. This enables candidates to work closer to their countries of origin, family and friends, and enables participating countries to maintain or increase the density of healthcare professionals in the sub-region (102).

3.2 Increasing training capacity for tomorrow: a worthwhile investment

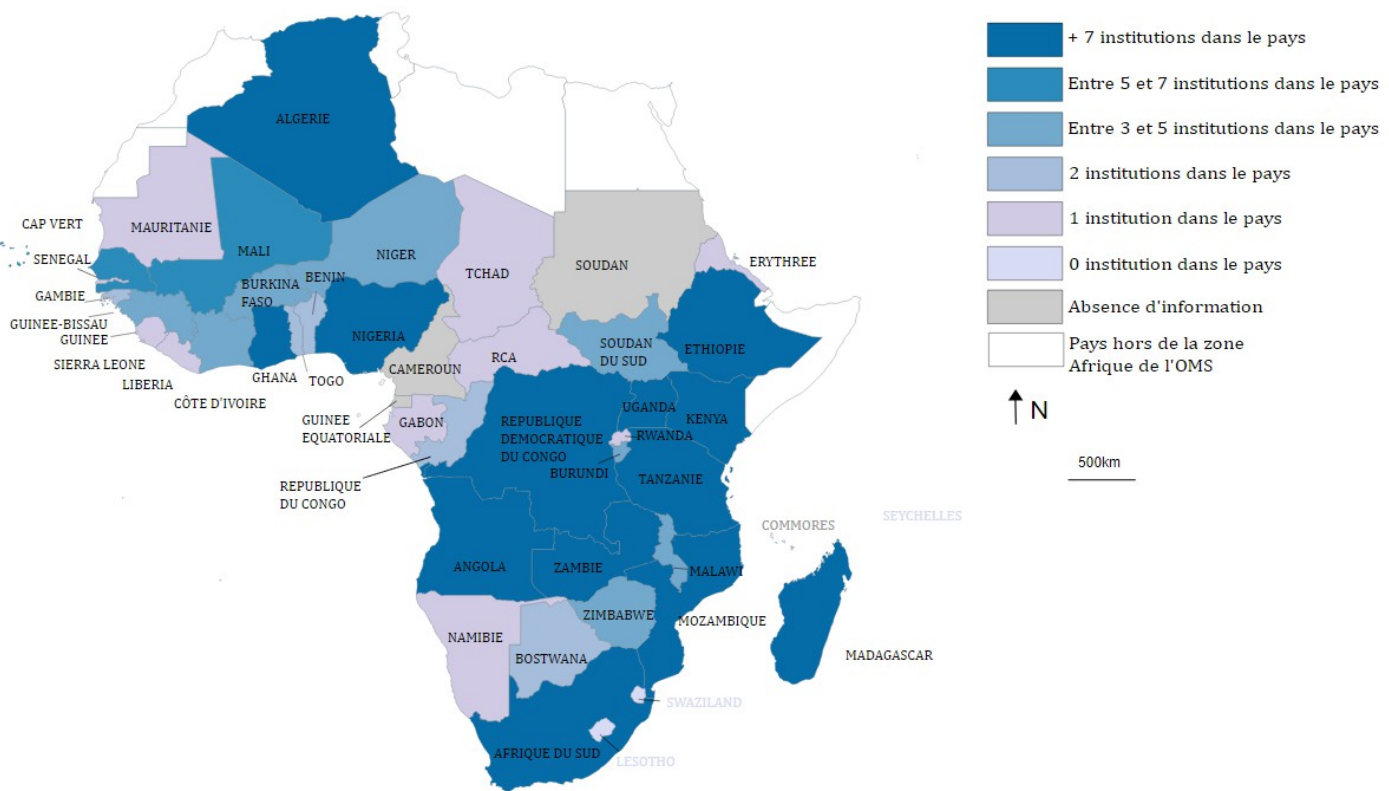
In 2010, the Lancet Commission on the Education of Healthcare Professionals estimated that global spending on the education and training of healthcare professionals amounted to around \$100 billion (125). This amount represented only 2% of total healthcare expenditure, and was deemed insufficient to meet the needs of healthcare systems. Greater investment in the development of education and training capacities and in quality improvement is needed to produce health professionals in sufficient numbers and with the requisite skills. Under-investment in education and training in some countries, including high-income countries, has resulted in an insufficient number of graduates to meet the health needs of the world's population, particularly in Africa (101).

According to the same commission, of the nearly 4,000 institutions providing education and training in the healthcare professions, 55% were public, 35% private for-profit and 10% private not-for-profit (125).

In Africa, more specifically, the public sector reported the highest number of medical training establishments for doctors, dentists and pharmacists, with 209 establishments (59%), compared to the private for-profit and private not-for-profit sectors, which reported 111 (31%) respectively. The public sector has the largest number of training establishments for nurses and midwives, with a total of 1,375 establishments (54%), and health science schools for other middle managers, with a total of 544 establishments (55%).

While the number of nursing and midwifery schools in the WHO African Region has increased considerably in recent years, many of these are private, with no accreditation or licensing mechanisms to guarantee the quality of training (see our section on accreditation mechanisms). For other professions, there are far fewer training opportunities: there are just 168 medical schools in the Region. Eleven Member States have none at all, while 24 have just one medical school.

FIGURE 12: MAP SHOWING THE NUMBER OF TRAINING INSTITUTIONS (MEDICINE, DENTISTRY, PHARMACY) IN THE 46 COUNTRIES OF THE WHO AFRICAN REGION IN 2018



Source : carte réalisée par les auteurs avec Philcarto : <http://philcarto.free.fr>, d'après la figure du rapport de l'OMS The State of the health workforce in the WHO African region - 2021

Of course, analysis of the number of training institutions per country is only meaningful in relation to their respective population size. Obviously, we can't compare Congo's 102 medical schools with Seychelles, Lesotho and Eswatini, which have none. Differences in population are not enough to explain differences in supply, which is very uneven across the continent.

Greater regional dynamics could emerge in the years to come¹¹¹. Some specialists suggest, for example, that African countries with the capacity to train specialists (124), such as Kenya, Uganda, Tanzania, South Africa, or, in West Africa, Côte d'Ivoire, could be the first to take advantage of these opportunities.

¹¹¹ "A number of initiatives are underway at sub-regional level, with the creation of DUs, specialties and specialist diplomas in French-speaking Africa, for example. There are regional approaches, regional streams. These are ongoing trends and dynamics" i17.

and Senegal, could help develop programs and capacities in other countries in the region.

3.3 Guaranteeing the quality of training to improve the quality of care

Increasing the supply of training is not enough to improve patient care and the quality of healthcare systems. It is also necessary to ensure the quality of training, skills and knowledge of young graduates in order to improve the quality of care.

While it is difficult to establish direct links between the shortage of healthcare professionals, the difficult working conditions in many sub-Saharan African countries, particularly in rural areas, the challenges of quality control in education and the quality of healthcare systems in sub-Saharan Africa, the issue of *high-quality health systems* is one that cannot be ignored when considering the healthcare professions of tomorrow (126). Innovations in the organization of healthcare professions, the introduction of new professions or the acceleration of training processes will only be acceptable if they are not implemented at the expense of patients' health¹¹². The question of the quality of care provided in healthcare facilities, and of the knowledge and skills of practicing healthcare professionals, is a global one.

It's not just access to healthcare services but also the quality of care and services that needs to be improved. Indeed, according to the *Lancet Global Health* commission's work on quality healthcare systems in the era of the SDGs published in 2018, poor quality of care is a greater obstacle to reducing mortality than lack of access to care (126). While the absence of healthcare professionals would appear to be a greater problem in the first instance than poor quality of care, we cannot avoid reflecting on the second dimension.

A distinction can be made here between the "technical quality of care" linked to scientific and medical aspects (knowledge of pathologies, correct diagnoses, choice of treatment adapted to the diagnosis, cure rate, etc.) and the "non-technical quality of care", linked to the administrative and human aspects of care (waiting times, additional costs, patient experience, professional ethics including non-discrimination, etc.).

Mechanisms for guaranteeing the quality of training¹¹³ are crucial to ensuring quality of care. In Europe, we are witnessing a form of "universitarization" of healthcare studies, with the Bologna Accords, whose aim is not only to harmonize training in Europe, so that it becomes clearer, but also to facilitate the mobility of students and healthcare professionals within European countries, based on the LMD (Licence-Master-Doctorat) system. Since 2009, nurses in France have been trained according to this system.

At global level, the main organization for accrediting medical training is the *World Federation for Medical Education* (WFME). This organization has established a *Recognition* Programme and a list of criteria that accreditation agencies must meet in order to be recognized¹¹⁴. The standards adopted by the WFME have also been validated by the WHO and the World Medical Association.

¹¹² Many reforms, aimed for example at training certain healthcare professionals to carry out tasks previously performed by doctors (in order to free up doctors' time and have more professionals capable of performing these necessary tasks in the populations targeted by the reforms), were prevented by this health security argument. These reforms were denounced as endangering patients' lives unnecessarily, with the sole aim of saving money so as not to train and hire more doctors at the cost of patients' health. In fact, many such attempts have produced highly encouraging results. Please refer to the section on task delegation.

¹¹³ "There are two main mechanisms for regulating the quality of healthcare training: either the quality of the training program is assessed by means of accreditation prior to the opening of the program (and regularly renewed), or knowledge is evaluated and skills of individuals on graduating from training courses through examinations leading to professional licenses enabling them to practice" i26.

¹¹⁴ For more information on WFME-recognized accreditation agencies, see for example the article: "Public availability of information from WFME-recognized accreditation agencies" by Baniadam et al. (*Hum Resour Health*. 2021 Dec;19(1):78).

The African and Malagasy Council for Higher Education (CAMES) is a mechanism for recognizing diplomas awarded by French-speaking African countries (19 countries in all). While the vast majority of these countries have integrated their training schools for nurses, midwives and other paramedical professions into the "Licence Master Doctorat" (LMD¹¹⁵) system, very few have a system for official recognition of the bachelor's degrees awarded by their national midwifery schools. One example is Togo's Licence en sciences de la santé, mention : sciences infirmières et obstétricales. A Regional Council for the Training of Health Professionals (CRFPS) has been set up for ECOWAS countries to support the implementation of national accreditation systems, and there are plans to set up regional centers capable of offering Master's and Doctorate level training in nursing and midwifery, with the support of the World Bank's *Sahel Women Empowerment and Demographic Dividend* (SWEDD) Project, implemented by the United Nations Population Fund (UNFPA) (127).

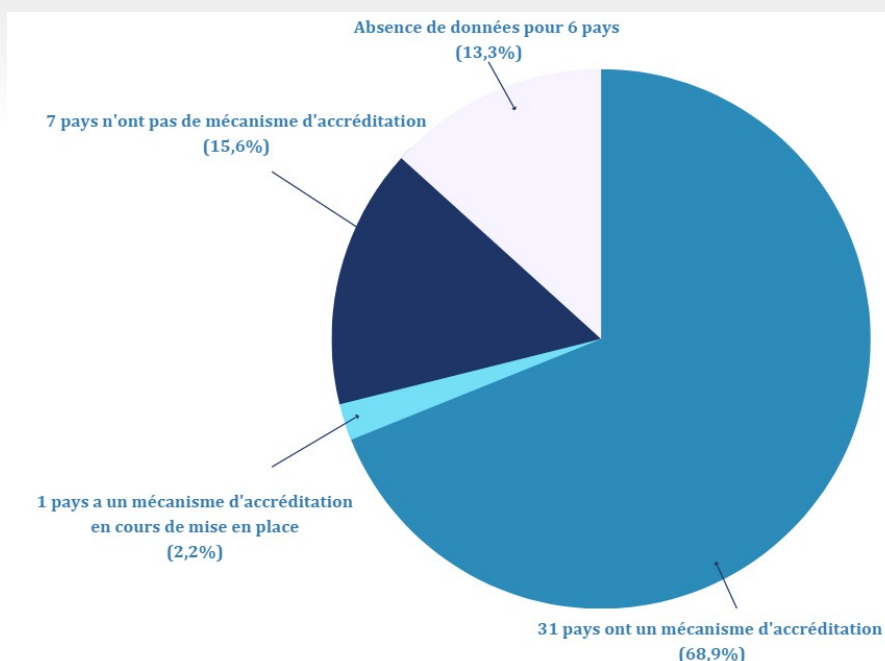
The issue of recognition of caregivers' qualifications and acquired knowledge and skills

The "guaranteed" quality of these diplomas raises the question of the relationship between **public and private training** systems¹¹⁶ at sub-national level. Indeed, while some private schools are of very high quality, others do not go through any official accreditation mechanism and deliver diplomas that are not recognized. In many French-speaking African countries, for example, "state-qualified nurses" are considered more competent than other nurses. The development of a private training system for the health professions must be subject to the same control, accreditation and recognition of training quality as public training. The Ministries of Education and Health are theoretically accountable for the quality of health workers who graduate from these institutions and can therefore be hired by the civil service or the private sector. Some countries, such as Chad, have set up a national examination at the end of which successful candidates receive their professional diploma, enabling them to be recruited by the civil service, whether they come from public or private vocational training (127).

FIGURE 13: PRESENCE OF AN ACCREDITATION MECHANISM FOR HEALTH TRAINING INSTITUTIONS IN THE WHO AFRICAN REGION IN 2018.

¹¹⁵ The transition to the Licence Master Doctorat (LMD) system may mean that schools will be transferred from the Ministry of Health (MS) to the Ministry of Higher Education (MES).

¹¹⁶ "In general, the level of the public sector is average. Not exceptional, but not a catastrophe either. There are far more disparities in the private sector, between private denominational, private associative or purely commercial training. Improving the quality of training in the public sector is a priority, but the quality of training in the private sector is a huge problem, as the majority of health professionals trained in the private sector benefit from little supervision, little oversight and few requirements" i12.



Source : Adapté de l'article *An overview of health workforce education and accreditation in Africa: implications for scaling-up capacity and quality*. Human Resources for Health. Okoroafor SC et al, 2022.

A survey (128) shows that in 2018, 31 African countries (79%) had an accreditation body for health training institutions, while seven countries (18%) had none (23%) and one country (Chad), was in the process of setting one up. Six countries (Comoros, Gambia, Equatorial Guinea, Kenya, South Africa and South Sudan) provided no data, and seven countries had no accreditation mechanisms in place: Algeria, Benin, Burkina Faso, Congo, Mali, Mauritania and Togo. These results are generally positive, in view of the objectives of the regional framework for the implementation of the global strategy (129), which aims to ensure that, by 2030, all Member States have put in place mechanisms for the accreditation of health training establishments. The presence of an accreditation system is not sufficient to certify either its operability or the exhaustiveness of its scope (what type of site is accredited? public or private? for what categories of personnel?), but it is an encouraging indicator.

Finally, it should be pointed out that one of the milestones of the global strategy on human resources for health is that "all bilateral and multilateral agencies have participated in efforts to strengthen the assessment of health personnel and the exchange of information within countries" (130). Some of them have indeed developed specific policies in relation to health professionals (131), but the issue of assessment and accreditation remains very much a minority in the support objectives of international organizations.

Box 6: Case study - Tanzania (126)

Setting up a public-private partnership in health education

In the 1990s, many low- and middle-income countries, including Tanzania, launched massive reforms to improve their healthcare systems. However, these reforms required a sector-wide approach that demanded resources beyond the capacity of governments. WHO therefore began to encourage partnerships between state and non-state actors in health systems, in the form of public-private partnerships (PPPs).

In Tanzania, the training of doctors, previously the sole responsibility of the government, became the responsibility of both the government and the private sector. Through the PPP, the government was supposed to regulate and control the quality, quantity and cost of training.

Subsequent studies have shown that the PPP achieved its objectives in terms of increasing the number of training establishments and graduating doctors, while keeping training costs affordable, even in private universities. However, in the absence of harmonized training curricula and with a severe shortage of faculty and training space, this increase in the number of institutions and students resulted in a perceived decline in the quality of medical training, and many graduates of these institutions found themselves unemployed; thus failing to reduce the shortage of healthcare professionals.

4. The challenge of retaining healthcare professionals in rural and remote areas.

HHR shortages and the mismatch between available human resources and health needs are considerable in many countries, particularly in rural areas. In 2015, the International Labour Organization estimated that around 56% of people living in rural areas worldwide had no access to essential health services, more than double the figure recorded in urban areas (22%). Africa has the highest number of people in rural areas not covered by essential healthcare services, at 83% (132).

4.1 Financial incentive mechanisms: wages as a prerequisite Financial incentives are the most obvious way to encourage people to settle in a specific area, especially as rural and remote posts are associated with a lack of professional development opportunities as well as low pay (133). This can take the form of direct or indirect payments such as better salaries, bonuses, pensions, insurance cover, tax exemptions, loans and tuition reimbursements. Such measures have been widely adopted in Africa. In Niger, between 2005 and 2010, salaries for healthcare professionals almost doubled; in Chad and Côte d'Ivoire, salary increases were also granted following frequent strikes. These same countries have sometimes preferred to introduce allowances targeted at healthcare professionals - rather than simply increasing salaries - in order to avoid similar pressures from other civil servants; for example, housing or telephone bonuses, risk allowances, or extra payments for on-call duty (134).

In low- and middle-income countries, the findings of impact studies on these financial incentives differ as to the importance of pay in a person's decision to choose a place of work; while in a study of nurses in Thailand, pay was positively associated with a decrease in their intention to leave their job, a study of reasons for staff mobility in six African countries found that only 24% of respondents cited pay as a reason for leaving their job (135).

So, while the introduction of financial incentives that meet regularity requirements is a necessary condition for retaining healthcare professionals in underserved areas, other solutions have been proposed and evaluated.

4.2 Non-financial incentives: the growing importance of working conditions for healthcare professionals

In order to make these positions more attractive and encourage long-term staff retention, it is therefore worth looking into the success of non-financial incentive mechanisms. All the more so as it has been proven that compulsory or random assignment measures, in the absence of such mechanisms, do not work in the long term (136).

The current problem with strategies aimed at retaining workers is that they are often limited to a single factor or a limited number of factors - whereas evidence suggests that a set of joint interventions would have a greater impact (126). The combination of measures such as setting up professional and community support networks, creating housing, improving access to electricity and water, rehabilitating health infrastructures and medical equipment to improve living and working conditions for staff in rural areas, should be considered. However, the literature provides little evidence of what actually works in Africa - and shows that regulatory measures (expanded scopes of practice, new types of health worker, compulsory service agreements) or professional enhancement and support measures have been little implemented, despite their potential (134).

Mali is a case in point. A project (supported by the NGO Santé Sud) has been set up to support rural doctors, with several components: broadening the skills of rural professionals, creating new types of healthcare staff, specific training in rural health, ongoing professional development, improving living conditions (housing, infrastructure, equipment), introducing a five-year commitment to serving rural areas, and creating a professional network for rural doctors. Under this program, 300 doctors were trained, covering 1/3 of the remote population. However, evaluation of the project showed that only 30% of the doctors were still in post after eight years, and that their retention was hampered by the absence of a career development plan, as well as by their low remuneration and the lack of formal contracts. The results of this project underline the need for multidimensional, financial and non-financial incentives to retain healthcare professionals in rural and remote areas (134).

4.3 Decentralize training to decentralize care

Locating health worker training facilities and programs directly in rural areas, irrespective of the country's income level, would increase recruitment and retention of graduates in these areas (137). In French-speaking Africa, this recommendation has been implemented in Burkina Faso, Côte d'Ivoire, Mauritania, Senegal and Chad. However, schools in rural areas suffer from a lack of funding, qualified teachers and infrastructure for clinical practice. The increasing share of private health training in Africa also represents a brake on this measure, as private schools often open without following existing regulations, and are mostly located in large cities (125).

The main challenges to ensuring the success of this measure are therefore to invest significant financial, human and structural resources in these rural public schools, to regulate the establishment of private training, and to accompany it with other training-related interventions that can increase its impact; such as setting up strategies to recruit students from rural backgrounds and developing curricula that reflect rural health issues. Examples of such measures include granting additional scholarships for the training of students from rural areas (as in Niger, for student midwives), integrating health issues specific to rural areas into standardized curricula, or mandatory internships in rural areas, as in Côte d'Ivoire, Senegal, Mali and Mauritania.

The private health school in Gao, Mali, set up in 1998, is an example of a rural health vocational school responding to the challenges outlined above. The school offers curricula reflecting rural health problems and clinical placements in rural areas, its backers offer scholarships associated with 5 years' compulsory service in the northern regions, and the agents trained by the school have organized themselves into a collective that represents a support network between professionals (128).

There are therefore many avenues of intervention to encourage the recruitment and retention of healthcare professionals in rural and remote areas of Africa. But beyond increasing investment to enable their implementation in these countries, it will be essential to collect data to evaluate their implementation and estimate their impact, in order to know which ones to prioritize in the years to come.

5. Private sector development in healthcare: a rapidly expanding trend in sub-Saharan Africa.

This section analyzes the rapid development of the private sector in healthcare in Sub-Saharan Africa, particularly in relation to the challenges posed by the shortage of human resources in health. The private sector has the capacity to provide healthcare services to large segments of the population (138), provided it is effectively regulated.

Due to the lack of public investment and the low absorption capacity of the public sector in some African countries, the role of private players has gradually increased, to meet demand and seize opportunities linked to market growth. Sub-Saharan Africa represents an important market: in 2015, it accounted for almost 15% of the world's population and over a quarter of the global burden of disease, but only 2% of global healthcare spending in 2015. Africa's healthcare sector therefore offers considerable potential for growth. The United Nations Economic Commission for Africa estimates that by 2030, 14% of global healthcare business opportunities will be in Africa (139).

The formal part of the private sector in Sub-Saharan Africa includes for-profit commercial companies, non-profit organizations and social enterprises, as well as public-sector health workers providing private services¹¹⁷. Although national health workforce accounts reports (WHO, 2023) on this issue are incomplete for the majority of countries, available data from reporting countries suggest that the share of doctors and nurses working in private facilities is generally low in Africa and Europe, while several countries in the Americas, Southeast Asia and the Eastern Mediterranean

¹¹⁷There is also an informal sector of healers, health professionals and drug sellers operating outside the health system, the extent of which is difficult to assess.

have significant private sectors. The involvement of this formal private sector in sub-Saharan Africa continues to grow, and in all healthcare services: the direct provision of healthcare services, training for healthcare personnel, financial products, drugs and medical products, information technology, infrastructure and support services. Currently, the formal private sector accounts for up to 50% of healthcare provision, and is estimated to capture over 50% of total healthcare expenditure (140). The only area in which the private sector remains marginal at present is that of health insurance, due to the lack of commercial incentives in this field and the weakness of social cohesion models at national level. A few countries, such as South Africa, Kenya, Nigeria, Ghana, Tanzania and Uganda, have authorized private insurance schemes - but the services they provide are generally considered to be of poor quality or beyond the financial reach of the majority of the population (141).

5.1 The role of the private sector in the training and employment of human resources for health in Sub-Saharan Africa

WHO predicts that by 2030, Africa will need an additional 6.1 million doctors, nurses and midwives. However, based on the current trajectory, only 3.1 million would be trained and ready to provide services, representing a major obstacle to achieving universal access to healthcare services (128). There are two main areas in which the private sector can intervene: increasing the training capacity of healthcare personnel and employing qualified professionals.

In 2018, around 45% of the region's health training establishments belonged to the private sector. It is estimated that these establishments trained up to 60% of graduate health personnel that year (128). These data indicate that the private sector is actively investing in training, thereby helping to increase the region's capacity to produce qualified personnel. However, country case studies suggest that the rapid and uncontrolled expansion of private-sector education of healthcare professionals could lead to a perceived decline in the quality of training, without addressing workforce shortages (142).

In terms of employment, the situation varies greatly from country to country, but it is estimated that 85% of the continent's healthcare professionals will currently be working in the public sector, 11% in the private non-profit sector and 4% in the private for-profit sector in 2019¹¹⁸. Only those working in traditional and complementary medicine are predominantly in the private sector. We also note that around a quarter of dentists, pharmacists and imaging and medical equipment technicians - who represent some of the most expensive healthcare services - work in the private not-for-profit sector (see table below) (98).

¹¹⁸ Based on data reported by the Ministries of Health of countries in the region to WHO in 2018 and 2019. The Ministries of Health have much more visibility over the public sector than over the private sector. In the absence of a collective organization or representatives of healthcare professionals working in the private sector, it is difficult to have correct estimates of their activities. What's more, many have a "dual practice", dividing their time between working in a public and a private structure.

FIGURE 13 - DISTRIBUTION OF HEALTHCARE WORKERS IN THE WHO AFRICAN REGION IN 2018

Categories	% public	% private for profit	% private for non-profit	% total	Total no
Physicians generalists	79.9	3.8	16.4	100.0	243 254
Physicians specialists	74.2	1.0	24.8	100.0	90 913
Nurses (professionals and associates)	78.2	2.9	18.9	100.0	1 093 957
Midwives (professionals and associates)	95.2	2.2	2.6	100.0	217 551
Dentists and technicians	77.7	0.7	21.6	100.0	58 028
Pharmacists and technicians	70.0	1.9	28.2	100.0	94 098
Laboratory workers	97.6	1.2	1.3	100.0	370 104
Technicians on medical imaging and equipment	71.4	2.8	25.8	100.0	25 804
Environment and public health workers	91.3	0.4	8.4	100.0	40 043
Health services managers	92.9	2.4	4.7	100.0	30 754
Administrative and support staff	91.1	2.2	6.8	100.0	428 235
Community health workers	95.3	4.7	0.0	100.0	486 186
Traditional and complementary medicine	10.8	79.3	9.9	100.0	49 742
Other health workers	84.6	6.0	9.4	100.0	345 028
Total	84.80	4.11	11.09	100	3 573 697

However, this public-private gap is narrowing, and there is still a lack of data to estimate the actual number of private-sector professionals. Thus, it is interesting to look at the phenomenon of "dual practice", which describes healthcare professionals based in the public sector taking on additional work in the private sector. There is widespread concern that dual practice could reduce the accessibility and quality of care offered to users of the public system, because it could encourage staff absenteeism, over-servicing or the deliberate creation of a quality gap between public and private service. Nevertheless, in a context where Africa's public sector is experiencing a mass exodus of its healthcare professionals, both abroad and to the private sector (associated with a better quality of life, better infrastructure, a lower workload), offering public-sector healthcare professionals the opportunity to practice in the private sector could, on the contrary, keep them in the national labor market and in the public sector; without adverse consequences, at least in healthcare systems that are willing to apply regulations that protect public services (143).

5.2 Managing private sector development in Sub-Saharan Africa: a challenge for achieving universal health coverage

The private sector is often seen by countries as a solution for achieving universal health coverage, because it is perceived as offering access to greater service capacity, greater responsiveness, greater freedom to innovate, management expertise, as well as investment and financing capacity (144). Despite this potential, it remains fragmented and of very uneven quality in sub-Saharan Africa. This trend towards privatization of the healthcare system is obviously having an impact on health equity and increasing inequalities in access to care, reducing the scope for low-cost or reduced care. The absence of sound regulatory frameworks and accreditation systems can also lead to unethical practices, anti-competitive behavior and major distortions in the type, quantity, quality, distribution and price of healthcare services (140).

Box 8. Oxfam report on financing public-private partnerships in healthcare

In June 2023, Oxfam published two investigations into the financing by development finance institutions of private hospital chains and other for-profit healthcare companies operating in low- and middle-income countries. These investigations reveal several cases of abuse within private establishments financed by these institutions:

- Extortion and imprisonment of patients (including newborns), and even confiscation of the bodies of deceased people in the event of non-payment of bills.
- Profit-seeking at all costs, particularly during the pandemic, systematic overcharging of patients, leading to their ruin or plunge into poverty.
- Denying care to those who can't afford it, even in emergencies, and pricing services and drugs far beyond the reach of most people.
members of local communities.
- Involvement in tax schemes, price manipulation and medical negligence resulting in death.
- Failure to prevent human rights violations, including organ trafficking by staff and exploitative practices such as coercion of patients
to encourage them to accept costly and unnecessary medical procedures.

These surveys emphasize the absolute necessity of regulating and investigating this type of private sector investment, and of demanding transparency and public accountability for these investments, as well as concrete evidence of their impact on access to healthcare for people living in poverty.

Source: Oxfam's "Unhealthy Trends" and "First, Do No Harm" reports, 2023.

A number of articles focus on public-private partnerships in the healthcare sector. An Oxfam survey (145) calls into question the financing by development institutions¹¹⁹ of certain public-private health partnerships in Africa (Box 8 below). To prevent public-private partnerships from increasing the overall cost of projects to government, the WHO Council on Health Economics for All (146) insists on better regulation, greater transparency and accountability in decision-making. The aim is to ensure that objectives are aligned with those of the public sector, and that "recast terms and conditionalities [...] structure contracts, subsidies, transfers, loans and partnerships". In addition, incentives such as explicit and implicit subsidies can be offered to encourage private investment to align with health sector objectives.

As a general rule, therefore, countries need to strengthen regulatory frameworks and instruments before encouraging private-sector participation. This means that, in addition to controlling the entry of healthcare professionals and organizations into the market, they will need to: adopt a comprehensive policy on the private sector and clarify the roles of the different stakeholders (funders, purchasers and providers); develop the capacity to evaluate and implement legislation in line with public health objectives, strengthen their regulatory authorities and set appropriate sanctions in the event of misconduct resulting from unfair commercial practices (147).

¹¹⁹ The development finance institutions analyzed in the reports are the UK government's British International Investment (BII, formerly CDC), Germany's Deutsche Investitions und Entwicklungsgesellschaft (DEG), France's Proparco, the European Investment Bank (EIB) and the International Finance Corporation (IFC), the private sector arm of the World Bank Group.

More specifically, in the field of human resources, these regulations must include: 1) standardization of training standards and quality guarantees between the public and private sectors; 2) establishment of common accreditation and licensing criteria; 3) establishment of codes of conduct and fields of competence for each profession; 4) application of disciplinary measures in the event of abuses and violations of these regulations;

For education-related measures to have an impact, public decision-makers will also need to ensure that the necessary infrastructure is in place, that teachers have the necessary qualifications, that selection processes are based on gender and equity considerations, and that they take account of socio-demographic factors to guarantee retention after graduation (141).

6. Governance and management challenges

Governance of human resources for health (HRH) is central to the development and implementation of policies and other decisions relating to the health workforce. In particular, it is essential in order to improve the availability, accessibility and quality of this workforce (148). In 2017, the WHO Regional Office for Africa published a framework for health systems development towards universal health coverage, in which it recognized that the region suffers from an inadequacy in the number, distribution and quality of HHR, which is a direct consequence of weak HHR leadership and governance(149).

Developed by the European Observatory on Healthcare Systems and Policies, **the TAPIC framework** (see box below) - **which breaks down governance into 5 key areas: transparency, accountability, participation, integrity and political capacity** - is a tool for identifying whether a problem in the healthcare system (the inadequacy of human resources for health in this case) can be linked to a governance problem. In this context, the lack of resources (and therefore of human resources) is not considered a governance problem per se (150). However, issues such as the efficient use of available resources, overhauling the inadequate supply of health professionals (by acting on their inequitable deployment and/or low motivation and performance), developing expertise in HHR planning, education and management with a long-term vision, using subsidies to evaluate efforts to build the capacity of health personnel - all have governance implications (6).

Box 9. TAPIC :

a governance framework to strengthen decision-making and implementation (145)

Developed in 2017 by the European Observatory on Healthcare Systems and Policies, **the TAPIC** (*Transparency, Accountability, Participation, Integrity and Capacity*) **framework** breaks down governance into five key areas:

- 1) **Transparency** - Institutions must inform the public and other stakeholders of upcoming and past decisions, as well as the process and rationale behind those decisions;
- 2) **Accountability** - an actor is accountable for his actions, with consequences if the action and explanation are inadequate;
- 3) **Participation** - stakeholders must have the opportunity to contribute to relevant deliberations without fear of reprisal;
- 4) **Integrity** - representation, decision-making, employment and application processes must be clearly specified, and individuals and organizations must have a clear division of roles and responsibilities;
- 5) **Political capacity** - the ability to develop policies in line with the needs and resources available to achieve objectives.

Such approaches to collaboration, intersectoral action and ongoing dialogue are costly, time-consuming and require more resources (human, financial and information), but they deliver more lasting results. They can be applied at local level. *Turnover* among healthcare professionals, particularly in rural areas, is often linked to a feeling of isolation. The delegation of certain preventive, screening or treatment tasks must be carried out within multi-disciplinary teams, and the absence of healthcare managers can be a major obstacle to the smooth running of healthcare systems¹²⁰. The (inevitably slow) construction of national governance needs to be extended to lower levels, so that healthcare professionals are less isolated (151).

6.1 Understand the consequences of a lack of governance in order to identify priority interventions

The WHO Roadmap for strengthening human resources for health (2012-2025) details the consequences of weak governance of human resources for health (HRH): imbalances between supply and demand for health professionals, uncoordinated efforts and competition within and between sectors, lack of a holistic and comprehensive approach to different aspects of HRH, such as policy, planning, financing, education, recruitment, HRH management systems and partnerships between private and public entities. This is compounded by a high *turnover* of political decision-makers and high-level professionals in countries, which undermines the continuity of policy decisions and the monitoring of their implementation (152).

Based on these observations, this roadmap identifies 5 priority national interventions to strengthen the governance of human resources for health:

¹²⁰ "For the fields of practice of different healthcare professionals to be optimized, for a satisfactory skill mix, for everyone to be able to make the best use of their skills and knowledge, you need to be part of a team. A single, isolated healthcare professional cannot refer a case that does not fall within his or her field of practice, cannot learn from his or her superiors or colleagues, c a n n o t receive constructive criticism of his or her practice, cannot develop professionally and risks becoming discouraged and leaving his or her post". (interview 26).

- Develop/update and implement comprehensive, budgeted national HRH strategic plans, including planning, education, recruitment and retention strategies;
- Establish an evidence-based, multi-year HHR financing strategy, determined by ministries of health in collaboration with other sector ministries, partners and stakeholders, including civil society;
- Accroître national investments (public and private) and improve the effectiveness and efficient use of health-related resources to move towards sufficient and sustainable financing of national HRH plans ;
- Strengthen institutional leadership and governance capacities at all levels, including within dedicated "human resources for health" units in ministries of health, district health management teams, health facility management teams, as well as other organizations or sectors responsible for the employment, regulation and transfer of health professionals;
- Advocate the engagement of high-level political leaders and relevant stakeholders in HRH policy processes at national, sub-regional and regional levels.

47 African countries were surveyed as part of a 2022 study assessing the implementation of these measures, including the creation of national strategic plans for HRH: 32 countries had national strategic plans for HRH, 12 were in the process of developing them, and the governments of 19 countries had committed to increasing the national allocation for the creation and implementation of such a plan. Among the countries where the plan is being implemented, respondents reported the following activities: setting up HHR information systems and registers, developing policies and plans for sub-national levels, improving training capacity and access to initial and continuing training, management capacity-building programs for stakeholders, community health worker programs, creation of national health workforce observatories and development of staffing standards (153).

However, the results of these studies suggest that, despite these positive advances, further effort and investment would be required to implement these plans in a comprehensive and uniform manner in order to achieve the health workforce needed for universal health coverage.

Several issues can be cited here

- The issue of regular documentation of the workforce, including for the private sector, is a central one, necessary for good policy management and comparative approaches. The need to document as reliably as possible the situation of healthcare professions at national or regional level (how many professionals are in post and/or in training for which types of profession) has been strongly emphasized as a priority by the WHO and other global health players, a prerequisite in the perspective of planning for tomorrow and improving HRH governance. The efforts that have been made in this direction systematically testify to the difficulty of taking into account the activities of the private health sector. The data available for the public sector, generally provided by Ministries of Health, are considered much more reliable and complete. The absence of a governance body for the private healthcare sector, and of visibility over the activities of healthcare professionals working solely for the private sector, or for both the public and private sectors, is a real challenge for national or international projections.

The main international databases of the World Bank, WHO and OECD use data supplied by their member states, via "national personnel accounts".

NHWA (*National Health Workforce Accounts*), which comprise 78 standardized indicators on health professionals. Over the past five years of gradual implementation of these national accounts, there has been an improvement in the availability and quality of data on health workers worldwide, but the objectives are far from being achieved. The ILO-OECD-WHO "Working for Health" (W4H) initiative (9) aims to support the production of more reliable data, the development of more appropriate strategic plans, and engagement in a more open political dialogue (one example is Niger's action plan for the 2018-2021 period, supported by this process, which has created 2,500 jobs for community health workers and 5,000 indirect jobs in three regions) ¹²¹ (154).

- The question then arises as to the skills and technical capabilities of the people responsible for interpreting and using these data, as such analyses require a mix of political analysts, demographers, statisticians, computer specialists, etc. The resources allocated to these issues in most African ministries remain low. The resources allocated to these issues in the majority of ministries in African countries remain low. Decisions must also be based on analysis of the socio-economic, political and cultural factors that affect health supply, demand and needs. A detailed understanding of local dynamics is essential to define strategies adapted to the national context. Collaboration with social science researchers could greatly improve the quality of the diagnoses made.
- The issue of steering and coordinating all healthcare players raises the question of links with traditional practitioners. While there is institutional recognition in all countries (generally illustrated by the creation of a department dedicated to traditional medicine within ministries), there is little real cooperation in the field in Sub-Saharan Africa: their inclusion in treatment protocols remains theoretical, and there are many divisions in the field.
- Finally, the question of leadership arises, with the need to rally all the players, who generally have different and sometimes contradictory interests and mandates, around a common program.

6.2 Improve technical and professional leadership at the highest levels of government

Strengthening HRH governance at national level, for which WHO offers countries a set of tools and technical support where necessary, is not just a question of political leadership. Countries need to create positions for qualified managers, administrators, academics, civil society representatives and health professionals trained in institutional leadership, as well as consultative and decision-making bodies to inform political leaders and oversee the planning and implementation of strategic plans. Many institutional players are proposing, for example, to promote the presence of functional multidisciplinary health human resources units within governments, particularly within ministries of health.

According to the European Observatory on Health Systems and Policies, these units must have the following prerogatives in order to have a real impact (155):

¹²¹ The great strength of this program lies in its ability to bring to the negotiating table at national level, at the same time, representatives of the Ministries of Health (who are used to interacting with the WHO) and representatives of the Ministries of Labor and Employment (who are the ILO's privileged interlocutors). To reach national agreements on job creation in the health sector, it is also necessary to exchange views with representatives of the Ministries of Economy and Finance, which is often the case in negotiations supported by the W4H program.

- Define strategic policy, planning and implementation of measures for an improved workforce and quality health services;
- Coordinate, manage and oversee the implementation of the national HRH agenda or strategic plan;
- Improve the motivation and efficiency of healthcare professionals at all operational levels through better HHR management capacity;
- Coordinate and facilitate local partnerships with other sectors such as local government, finance, the civil service, education, civil society, the private sector and various professional bodies;
- Coordinate collaborative work on HHR requirements with other sections of the ministry, including priority health programs, to ensure a more integrated approach to planning and implementing HHR interventions.
in HHR ;
- Coordinate and facilitate the production, analysis and dissemination of HRH information and data for effective decision-making at the policy, planning and implementation levels.

In many Sub-Saharan African countries, Ministries of Health have difficulty in obtaining reliable data on the health professions and those who practise them. The quality of the data available for the public sector is superior to that for the private sector (whether private, faith-based, associative or for-profit), but the necessary data is not the sole responsibility of the Ministry of Health. Whether in terms of training or employment, a multi-sectoral approach is needed to improve the governance of healthcare professions and professionals. With a view to better planning for future needs and organizing to meet them, capacity-building in the administration and management of health data seems necessary to improve the availability of health personnel and the quality of health services in Sub-Saharan Africa.

Box 10: An example of evidence-based cross-sector governance: Ghana's training needs assessment to improve continuing education (150)

In 2022, the *Ghana Health Service* (GHS), a Ghanaian government agency, undertook an assessment of the continuing education and skills needs of its in-service healthcare staff, with a view to developing a training plan more in line with the needs of the population. The assessment brought together stakeholders from all sectors, including Ghana's Ministry of Health and some of its agencies, the 11 GHS directorates, numerous health professional regulatory bodies, associations and the WHO.

Using data from all 16 regions, this analysis tracked the skills and distribution of human resources within the GHS to explore staff training needs in 44 occupational categories, and inform the design of more responsive curricula.

In the course of this process, the GHS identified several factors explaining the lack of competency among country health workers, including the absence of a systematic competency-based training plan and regular assessment of training needs. In this context, the GHS is attempting to bring about a paradigm shift so that decisions on in-service training are based on identified or actual gaps in the skills required to deliver health services at all levels of service provision.

Based on the skills gaps identified (and required to deliver

Conclusion

Most of the dynamics analyzed in this section are not specific to sub-Saharan Africa, but could be applied to many other countries. We have chosen to focus on this region because the challenges in terms of tomorrow's healthcare professionals are particularly acute. Several African countries have made progress in bridging the gap, but resolving the shortage of healthcare personnel remains a difficult task, given the complexity and scale of the problem.

Recent work published on the African region (and the retention of healthcare workers in rural and remote areas) has provided data on 13 categories of healthcare professions (numbers of professionals in post in sub-Saharan Africa, but also minimum thresholds required for a 70% CSU), confirming the trend observed in part 1 to highlight other healthcare professions than just doctors, nurses and midwives, as was the case for the main minimum density figures for healthcare professionals in 2006 and 2016. The importance of other healthcare professions has been highlighted (as in dentistry or pharmacy, for example), as well as essential support functions (such as laboratory technicians or administrative staff). The example of healthcare logisticians in Burkina Faso clearly illustrated that there is a real demand for this type of profession.

Professions that are essential to public health, health promotion, the organization of healthcare systems and the occupational health of healthcare professionals (e.g. public and environmental health professionals, executives and managers) were also mentioned as an essential part of the *skill-mix* required to ensure the smooth running of healthcare systems in Sub-Saharan Africa.

There are two key points to note in terms of the number of health professionals needed in each health profession for today and tomorrow in the WHO African Region: on the one hand, the number of health professionals currently in post is well below all the minimum thresholds calculated for satisfactory health coverage of populations and access to care, and this is due to a lack of training but above all to a lack of financial resources (*fiscal space*) to create jobs; on the other hand, effective *skill-mix* estimates highlight the importance of certain professions in terms of numbers, in particular nursing and midwifery professions, but also community health workers.

While it is still possible to find figures on health professionals that exclude CHWs, almost all the data collected in this study point to a recognition of the key role played by CHWs in health systems in sub-Saharan Africa and the importance of professionalizing their status, while emphasizing the importance of selection methods and the need for CHW training.

Lastly, to tackle the acute shortage of healthcare professionals in sub-Saharan Africa, whatever the profession concerned, a number of innovations have been identified, such as the growing involvement of the private sector in the training and employment of healthcare professionals, which must be accompanied by accreditation, regulation and control mechanisms, or packages of interventions put in place by the region's states to train healthcare professionals more rapidly to work specifically in rural and remote areas, and to promote the attractiveness and retention of professionals in rural areas.

Part 3. Future trends and challenges

After a first part dedicated to the dynamics and recent developments in the healthcare professions worldwide, and a second part devoted to the specific challenges of African countries, this part is more forward-looking. It looks at the main trends and challenges for the future.

The first section looks at current trends in the transformation of healthcare systems and their impact on the healthcare professions: decompartmentalization and despecialization, challenges to the hospital-centric model, emergence of new "intermediary" professions, delegation of tasks, growing importance of the intersectoral approach, etc.

The second part will look at the role of civil society and community players: the rapprochement between the health sector and the *care* sector, the increased role of caregivers, health mediators and community health workers, with all the challenges of training, professionalization and institutional recognition that this poses.

The third section looks at gender inequalities and the need, for the future, to give greater recognition to the role of women in the healthcare professions, to combat professional segregation, the absence of women in decision-making bodies, discrimination, sexual harassment, the pay gap and unpaid work. In this section, we also look at some operational ways of combating gender inequality.

The fourth part looks at the need to combat discrimination within healthcare systems, and the processes underway to promote more inclusive healthcare: promoting diversity, combating structural discrimination, the need to respond to the specific difficulties of researchers in low-income countries, etc.

The fifth part looks at scientific and technological advances, in particular the impact of the development of digital health on the practices of healthcare professionals, and the ethical issues this raises.

The development of training for the healthcare professions will be the focus of the sixth section: how can we ensure that training systems are better adapted to tomorrow's challenges? What new skills should be incorporated into training curricula? In particular, we'll see that one of the challenges is to change our approach, moving from job-based training to skills-based training, and enabling healthcare professionals to acquire new skills throughout their careers.

The seventh section looks at the challenges of international mobility, which must be seen as an opportunity for all: healthcare professionals, countries of origin and countries of destination. To what extent can the tools already in place (WHO code of good practice, healthcare staff support and safeguard list) be useful in the future? What policies should be put in place to regulate/optimize international mobility?

Finally, the eighth section will look at developments linked to environmental issues: what new professions / what new specific skills? How will the "one health" approach change the division of tasks between different professions?

1. The impact of healthcare system transformation on the healthcare professions

We mentioned above the broad definition of healthcare professions we have chosen for this study. Indeed, healthcare professions are not limited to the care professions. In addition to the medical and paramedical professions, many other sectors have a role to play in the smooth running of a healthcare system, including social work, public health, healthcare research, the pharmaceutical and healthcare products industry, logistics, management, public policy-making, and so on. This section looks at how to better recognize the role of these professions and include them in the large family of healthcare professions. In particular, we'll be looking at ways of breaking down the barriers in the healthcare sector, and broadening the scope of "healthcare professionals" to include **other healthcare professions**.

The ageing of the population poses many challenges for healthcare systems, not least the shift towards care and end-of-life services. The reduction in the size of family structures, in parallel with demographic change and the increasing participation of women in the workforce, has led to an erosion in the availability of unpaid care traditionally provided by women in the family(156). Over 50% of the world's elderly have no access to long-term care(114), with an increase in non-communicable diseases and mental health problems. This situation is exacerbated by the shortage of qualified long-term care professionals and the lack of infrastructure for this type of service.

1.1 A challenge to the hospital-centric public health model

Tomorrow's challenges are largely linked to the transformation of healthcare professions and systems, which today are largely focused on hospital and care professions, **towards a much more general vision of healthcare** (including health promotion, support, *care*, research and logistics, etc.). In carrying out this study, we were able to see how little attention was paid to other healthcare professions. For example, in 2010, 72% of studies dedicated to healthcare personnel in rural and remote areas focused exclusively on doctors, even though they represent a much smaller fraction of the total number of healthcare professionals. In 2021, doctors were still the subject of 50% of studies on the subject, showing a trend towards openness, which has yet to be confirmed (157).

Distinguishing between the notions of health system and care system enables us to move away from a restrictive vision of healthcare professions that focuses solely on caregivers. What's more, even the healthcare system, in order to function, requires the involvement of many different professions (logistics and administration, for example). Opinion no. 140 of the French National Consultative Ethics Committee for Health and Life Sciences (CCNE) proposes the following definitions: the notion of "care system" refers to "health establishments, services, administrations and professionals, as well as to the organizational and strategic means linked to the provision of care. This expression therefore encompasses healthcare establishments, medico-social establishments, private, public, private healthcare establishments of collective interest, all forms of medical organization, as well as the coordination mechanisms between these structures, and all the services provided by these structures.

organizations" (3). The notion of "health system" is broader, as it "encompasses the health care system (medical supply) in a broad perspective, extended to the social field and to the determinants of health. It also refers to the reciprocal relationships between the population's needs and demands, which structure public health objectives and policies"¹²². This notion of a "health system" underpins both the concept of health democracy and the notion of accountability, which presupposes both a greater correlation between health needs and training curricula, and greater consideration of the population's demands. The aim is to replace our current medicine, which is essentially curative and reactive, with a new medicine that is more predictive, centered on the individual, and focused on prevention. This means investing in a new range of skills and disciplines, such as physiotherapy, speech therapy, dietetics, optometry and many others (158).

¹²² This proposal is a real plea, a redefinition of what a healthcare system is. Generally speaking, the term "healthcare system" is often used in a very restrictive way to designate the organization of access to healthcare on a national scale, often illustrated by a pyramid representing a hierarchy of healthcare structures (primary, secondary and tertiary), with university hospital centers (CHU) at the top. It is this hospital-centric approach and hierarchy that needs to be challenged.

1.2 The emergence of new "intermediary" professions, delegation of tasks and changing fields of practice

One strategy often adopted in recent decades to make up for the shortage of healthcare professionals is "task delegation". Behind this increasingly maligned and disparaged concept (some prefer the less vertical notions of "cooperation protocols" or "evolution of fields of practice"), we find a multitude of extremely varied realities and initiatives, with highly contrasting results. Task delegation is an important means of improving access to care in situations of shortage. For example, a systematic study carried out in Zambia in 2013 concluded that there was no difference between the effectiveness of care provided by "intermediate level" health workers in the fields of maternal and child health and communicable and non-communicable diseases, and that of care provided by "higher level" health workers (159). In the Netherlands, new professions - assistant doctors or specialist nurses - are explicitly defined to bridge the gap between doctors and ^{nurses}¹²³. Non-physician clinicians generally prove (if they are well trained and can refer cases outside their field of practice to colleagues) to be as effective as doctors, but more importantly, they are more likely to remain in post at the decentralized level (160).

It is necessary to adapt to each context the optimal implementation conditions for an evolution of fields of practice, so that the results are positive for all (patients and caregivers). There are limits to what task delegation can and cannot do to maintain quality care.

Creating new intermediate professions could, however, provide a better response to the *skill mismatches* often encountered in the field, with the prospect of **despecialization**, for example. If it is not possible to urgently train large numbers of professionals who have studied for eight years or more, perhaps we can train healthcare professionals with less in-depth and advanced knowledge, but with enough basic knowledge and cross-disciplinary skills to care for the majority of patients who need it (with the possibility of referring patients they cannot care for to colleagues).

The creation of middle management positions, capable of supervising and ensuring the quality of delegated care, is a central element of this type of system. These ^{coordinating}¹²⁴ and supervisory positions are likely to take on an increasingly important role in the years to come, also as a result of technological developments (telehealth, mobile clinics, etc.).

1.3 The emergence of a more global vision of health

Public health professionals and researchers in epidemiology and health economics have long demonstrated that the care dimension of a healthcare system is not the one with the greatest impact when considering the overall health of a population. Preventive strategies and devices (such as vaccines) and the social determinants of health, for example, or access to drinking water, soap, a balanced diet or a sewage disposal system, play a key role in disease prevention. Yet, for most speakers, the notion of "health professionals" in French still refers to those who provide care.

After decades of raising awareness of other essential aspects of a healthcare system, and of the need to take into account a greater diversity of healthcare professions, both in terms of the diversity of existing training courses and the diversity of healthcare-related jobs that are not (or are no longer) reserved for carers, the Covid-19 epidemic may well have acted as a window of opportunity for greater visibility of non-healthcare professions.

¹²³ Schäfer Willemijn, Kroneman Madelon, Boerman Wienke, Michael Van den Berg Michael, Westert Gert, Devillé Walter, Van Ginneken Ewout (2010), "The Netherlands. Health System Review". Health Systems in Transition ; 12 (1) : VXXVII, 1-228.

¹²⁴ Professionals can leave their original profession to become direct "managers" in healthcare establishments, or continue in their original profession and take further training. In France, for example, nurses with a diploma in coordinating care work in EHPAD (establishments for dependent elderly people).

One example is the current drive by the WHO and numerous partners such as IANPHI, the *Global Network for Academic Public Health* and Tephinet (a network of training programs in epidemiology and public health interventions) to develop a global roadmap, to be implemented in all member countries (161), to train and employ more professionals in public health and ^{health} emergencies¹²⁵. Institutional commitments in support of this drive to develop public health professions are numerous (Rome Declaration 2021, G20 Health Ministers' Declaration of Italy, WHA resolutions, etc.)¹²⁶ and this trend looks set to continue in the decades ahead.

Another suggestion for promoting a vision of health that goes beyond care to the general public would be to make caregivers more aware of the "non-technical" aspects of health. In the UK, for example, the "*beyond pills*" movement is promoting the possibility of "social *prescribing*"¹²⁷ by healthcare professionals. While it would be interesting to have more exchanges between caregivers and non-caregivers within healthcare professionals, healthcare systems and healthcare professions, this idea of adding an additional task to caregivers may also have its limits. On the other hand, with the development of professions such as health mediators and peer educators, it is likely that non-caregivers will increasingly accompany caregivers in providing access to health beyond the provision of care.

Whatever form this conception of healthcare professionals beyond care may take, it seems that a more global vision of healthcare professions will develop increasingly in the decades to come.

1.4 The importance of social dialogue and a cross-sectoral approach.

Since the mid-2010s, it is important to highlight **an institutional dynamic in global health that is moving towards a closer relationship between the ILO and the WHO**, which is reflected at national level by a desire to address issues concerning healthcare professionals in a multi-sectoral ^{manner}¹²⁸. This means that health professions are no longer seen as the sole responsibility of the Ministry of Health, but as a subject that also concerns the Ministry of Labor, the Ministry of Economy and Finance, the Ministry of Higher Education and Research, the Ministry of Foreign Affairs, *etc.*¹²⁹. This multiplication of stakeholders can also enable the expression of different and alternative points of view to those held by traditional Ordres councils.

The **general trend towards precarious employment** in the healthcare sector, including in the public system (use of shorter contracts, informal wages, outsourcing, temporary work, part-time or unpaid work, etc.) and low wages undermine the ability of healthcare professionals to organize and exercise bargaining power⁽¹⁶²⁾.

The political space of human resources for health is occupied by a wide range of players with different and often conflicting interests and priorities. Physician representation systems generally occupy a central place. Yet strong cross-sectoral governance mechanisms (including government ministries, departments and agencies, non-state actors - including the private sector - associations, professional and trade unions, civil society and the community) are needed to promote cooperation and coordination among the different groups. The involvement of citizens is particularly important (163), and can take the form of committees, groups

¹²⁵ For more details on the roadmap, see Part 1, section 1.2.

¹²⁶ Source: <https://www.who.int/publications/i/item/9789240060364> (consulted on 05/08/2020).

¹²⁷ <https://collegeofmedicine.org.uk/beyondpills/>

¹²⁸ This cross-sectoral approach ("*across education, finance, gender, health, labor/employment, and migration sectors*") was at the forefront of the 5th Global Forum on Human Resources for Health organized by the WHO from April 3-5, 2023 in Geneva. ¹²⁹ In France, for example, the WHO Academy project is jointly supported by the Ministry of Health and the Ministry of Education. Prévention, the Ministry of Higher Education and Research and the Ministry of Europe and Foreign Affairs (source: interview, autumn 2022).

These include consultative processes, public satisfaction surveys and "consensus conferences", during which a panel of citizens questions experts and decision-makers in a public forum (164). National health personnel observatories are being set up. They

It is also important that non-healthcare professionals working in the healthcare system, such as IT specialists, engineers, scientists or data managers, are represented in discussion forums (165).

2. Mobilizing civil society and communities

The Covid-19 pandemic recently highlighted the fact that **the involvement of civil society in healthcare is essential to the resilience of healthcare systems**. Actions taken by these actors, particularly when they come from affected communities, generate greater trust, establish lines of communication and reach marginalized groups where official health authorities are unable to do so (166).

Civil society actors are generally categorized into four overlapping groups:

- Non-governmental organizations (national and international) whose mission is generally focused on a specific health problem or type of problem: infectious diseases, malnutrition, sexual and reproductive health, etc. Among them, associations play a particularly important role(167)
- Associations of people affected by a health problem and patient associations.
- Community associations, bringing together people - often vulnerable - with common characteristics, such as sexual minorities, sex workers, minority or religious socio-ethnic groups, etc.
- Unpaid *care* workers, also known as "caregivers"

Box 11: The role of civil society in direct care provision

Some civil society players can be direct providers of care services - in the traditional sense of the term. In France, for example, a number of non-governmental organizations manage care facilities, such as the CASO (Centres d'Accueil de Soins et d'Orientation) run by Médecins du Monde in several major cities, or the Comède (Comité pour la santé des exilés) health center at the Kremlin-Bicêtre hospital.

Numerous civil society organizations also perform this function in low- and middle-income countries, whether they be international organizations (l'Ordre de Malte, Médecins Sans Frontières), or national NGOs (national Red Cross societies, Arcad Sida, ANSS, etc.). Some NGOs, such as Solthis and Santé Sud, also specialize in capacity-building for healthcare professionals.

In Sub-Saharan Africa, faith-based healthcare is particularly important. Faith-based providers (Caritas, Islamic Relief, the Sant'Egidio Community, etc.) have set up extensive networks of hospitals, clinics and other health facilities.

Number of people working in these facilities are already in the healthcare sector

These include "recognized" players in the medical, paramedical, research, advocacy, project management and care sectors. Faith-based players, in particular, play an important role in some countries (167).

With a view to studying future changes in the healthcare professions, we will focus here more specifically on the issues of recognition, training, working conditions and remuneration for these players.

2.1 Bringing health and *care* activities closer together

Care work is a sub-category of care work, and comprises two main types of activity: direct, personal and relational care activities, such as caring for a sick, disabled or elderly person, and indirect care activities, such as cooking and cleaning. **The majority of these activities, which are essential to people's well-being, are carried out by unpaid individuals, over two-thirds of whom are women and girls,** generally from socially disadvantaged groups. The International Labour Organization (ILO) estimates that in 2018, 606 million women - or 41% of those considered inactive (with no formal activity) - are outside the labour market due to their unpaid caring responsibilities (156). Meanwhile, in 2015, the ILO estimated that 2.1 billion people were in need of care (1.9 billion children under the age of 15 and 0.2 billion elderly people). This figure could exceed 2.4 billion by 2023, with a further 0.1 billion elderly people, 0.1 billion children and 110 to 190 million people with disabilities likely to require lifelong care or assistance. In the context of the Sustainable Development Goals, transformative policies based on social justice and gender equality are therefore needed to guarantee recognition, wages and a professional future for carers (145).

In addition to remunerating and creating statuses for caregivers in the first category (direct care), the issue today is to implement social policies that recognize it, reduce and redistribute unpaid care work; promote decent working conditions; and ensure representation, social dialogue and collective bargaining for these insufficiently recognized workers- and this for both categories of *care* (direct and indirect care). In a scenario based on achieving the SDGs, the ILO estimates that investment in the care economy will need to double, which could translate into a total of 475 million jobs by 2030, or 269 million new jobs worldwide (compared to 2015) in the care sector (145).

2.2 Health mediators and community health workers: access to care, health information and prevention for the underprivileged and in medical deserts

We have already discussed the issue of community health workers (CHWs) and the potential they represent in the face of shortages of healthcare professionals, particularly in sub-Saharan Africa (part 1, chapter 6). Here, we will take a more global view to analyze how, across the world, CHWs constitute a new category of health professions essential to improving access to health, information and prevention for the most vulnerable groups.

Mediation in healthcare is a category of ASC, according to the WHO definition. In France, health mediation emerged in the late 1990s. Against a backdrop of social rejection of people living with HIV, sometimes even in the AIDS stage, the need for mediation arose to support patients (particularly migrants) in their care, to guide them in their rights and to act as a link with healthcare providers, whose perceptions were sometimes stigmatizing for their patients (111).

The profession has been regulated by the Haute Autorité de Santé since 2017, and defined by the latter as an interface function provided locally to facilitate: on the one hand, access to rights, to

prevention and care for the most vulnerable members of the public; and, secondly, raising awareness among healthcare system players of the obstacles to public access to healthcare.

(108). In June 2023, a report by the mission on health mediation, led by the Inspection Générale des Affaires sociales, entitled "La médiation en santé: un levier relationnel de lutte contre les inégalités sociales de santé à consolider" (Health mediation: a relational lever to be consolidated in the fight against social inequalities in health) was submitted to the Ministers for Health and Prevention and for Solidarity. In particular, the report concludes that health mediation *"contributes to the reduction of social inequalities in health, thanks to its interface function between vulnerable groups and healthcare players"* and *"constitutes a profitable social investment, since it contributes to the overall improvement in the state of health of individuals and the population, thanks in particular to preventive actions"*. The two institutions recommend, among other things, creating and facilitating access to training in the field of health mediation (both initial and continuing training), creating a bachelor's degree and professional certification, and enshrining the existence of the health mediator profession in the French Public Health Code (168).

The **formalization of CSA professions** is not specific to France or Sub-Saharan Africa. In Europe, we can mention the "integration delegates" at the LVR clinic in Cologne, whose mission is to improve the quality of care for people with a migrant background, or the "integration delegates" at the LVR clinic in Cologne, whose mission is to improve the quality of care for people with a migrant background.

In Belgium, "intercultural mediators" work in healthcare facilities, often via videoconferencing, to help foreign patients by interpreting and also decoding the patient's non-verbal communication (169). In South Asia, UNICEF identifies 18 types of CHWs in 7 countries, ranging from 220 in the Maldives to 110,000 in Pakistan (170). In Latin America, at least nine countries have community health relay programs. In the United States, the Bureau of Labor Statistics estimates that there are 61,300 CHWs working in the country. Although CHWs have been working for many years, particularly in low- and middle-income countries, the global challenge now is to create official status for these workers so that they can become an integral part of health systems.

Box 12: "Nothing for us, without us".

The legacy of the fight against AIDS in community healthcare

The "AIDS years" accelerated the involvement of civil society and community players in the care of patients, who came together under the slogan "Nothing for us, without us", an expression inherited from the 1983 Denver conference, based on a slogan used by people with disabilities: AIDS patients took to the stage to protest against the dehumanizing discourse prevailing in the medical world. This event later inspired the GIPA (Greater Involvement of People Living with HIV in the Response to AIDS) principles of 1994.

Based on these principles, numerous associations of people living with HIV have been set up, becoming key players in the response to the disease.

Last but not least, there is an important dynamic that could influence the evolution of healthcare professions: the gradual empowerment of patients in their own care. This dynamic has been greatly reinforced by the Covid crisis: in many European countries, pulse oximeters are rented out to patients so that they can measure the oxygen saturation of their blood themselves (171), self-administration of treatments hitherto administered exclusively by professionals, the delivery of self-injectable contraceptives in the United States (172), the proliferation of self-tests for HIV screening in Senegal (173), and so on. This empowerment of patients is consistent with health promotion as defined in the Ottawa Charter in

1986 (174), which aims to improve people's ability to influence their own health. However, this health *empowerment* dynamic also requires the support of collectives, communities and patient associations, which are essential for building the capacity of individuals to act on their own health(175).

3. Gender inequalities and the growing recognition of women's role in the healthcare professions

While women are estimated to account for almost 70% of global employment in the health sector, and to provide health services to 5 billion people by 2022, their contribution is undervalued and their decision-making power limited (66). Closing the gender gap in the healthcare workforce - as the Covid-19 pandemic has highlighted - is a *sine qua non* for closing the healthcare workforce gap, ensuring that healthcare systems remain or become resilient, and achieving universal healthcare coverage. This section will look at how gender inequalities are reflected in healthcare systems, and present possible solutions to put an end to these inequalities.

3.1 Gender inequalities among healthcare professionals

The health human resources sector is faced with systemic inequalities between men and women, spanning 4 thematic areas (176):

➤ Professional segregation

Occupational segregation is the phenomenon whereby individuals of a particular gender are concentrated in specific professions or healthcare roles; entraining to an unequal distribution, both horizontal and vertical, of men and women in different healthcare professions. This segregation - due to gendered norms that define care as women's work and present men as more suited to technical specialties - is found in all countries, with geographical variations stemming from historical gender norms, societal expectations and prejudices that influence educational opportunities and career choices for men and women.

Among doctors, for example, the proportion of women worldwide remains lower than that of men in certain specialties, mainly surgery. Research shows that female medical students tend to gravitate towards specialties such as obstetrics and gynecology, pediatrics, pediatric surgery, dermatology and oncology (177). While this segregation applies to every profession, it is also the main reason why women do not enter higher-paying medical specialties or management positions. It also discourages men from entering female-dominated professions such as nursing and midwifery. This confines women to jobs that are less well-paid and less valued by society. As a result of these same norms, women spend between 2 and 10 times more time on unpaid *care* work than men, depending on the country (149).

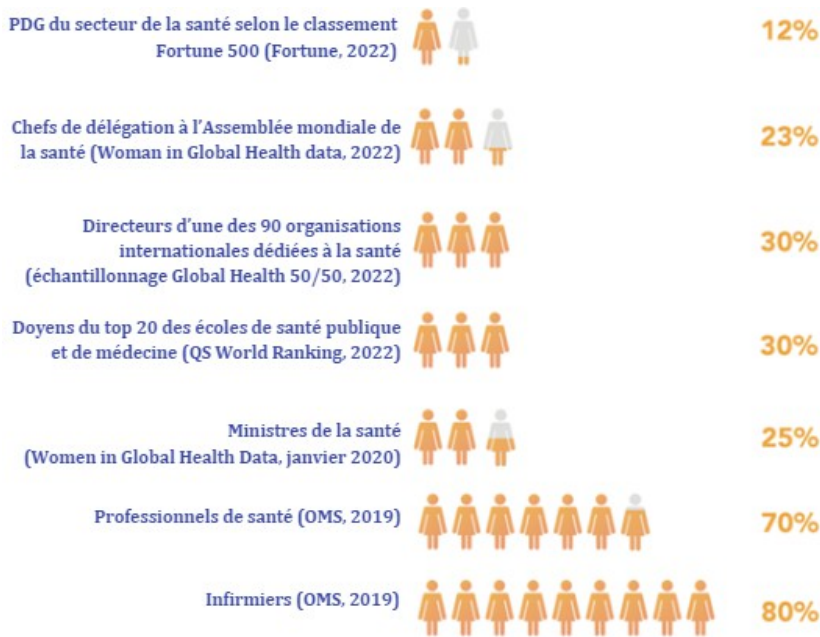
Moreover, because of their over-representation in "front-line" healthcare professions, women have been disproportionately affected by the Covid-19 pandemic (deteriorated working conditions, higher rates of burnout, mental health disorders, etc.) (178).

➤ The place of women in leadership bodies

The majority of management positions in the healthcare sector, and at all levels, - are in the healthcare sphere. from community to global health governance - are occupied by men. While women account for 70% of the world's HHR, they occupy on average only 25% of management positions (heads of large companies, global health organizations, etc.).

This imbalance is intrinsically linked to occupational segregation, and thus to gender stereotypes, power imbalances and discriminatory educational and professional structures that create pathways based on gender. This imbalance is intrinsically linked to occupational segregation; and thus to gender stereotypes, gender power imbalances, and discriminatory educational and professional structures that create gender-based pathways. This lack of opportunity for access to leadership roles is further exacerbated by the intersection with other factors of social discrimination such as race, religion, ethnicity or caste. Several international initiatives have been set up in recent years to document and combat gender inequalities in healthcare, such as "Women in Global Health" (179) and the UK's "Global Health 50/50" movement (180).

FIGURE 14: PYRAMID OF FEMALE REPRESENTATION IN THE HEALTHCARE SECTOR IN 2023



Source : traduit de l'anglais depuis le rapport *Workplaces: worse for women, 2023* de Gender Gap 50/50

There is evidence that women in health leadership positions broaden the agenda, giving greater priority to rights - such as sexual and reproductive health and rights - that apply to all genders and which, when absent, can have the most negative consequences for women's health (181).

➤ **Discriminatory bias and sexual harassment**

A majority of women working in the world's healthcare sector are confronted with discrimination, prejudice, sexual harassment and physical and verbal violence in the workplace; and are more likely to face these problems than men. And this is true regardless of the country's income level: for example, studies show that in Korea and Ghana, over 40% of female caregivers have been victims of at least one form of workplace violence (182). Yet most countries do not have or apply legislative measures to support gender equality in the workplace, or even to protect women from this type of harassment or aggression in the workplace. For women who are victims of such problems, the result is loss of morale, stress and deteriorating mental and physical health.

➤ **Pay differentials**

The gender pay gap in the health and social care sector was estimated at 26% in high-income countries and 29% in middle-income countries in 2022 - higher than in other economic sectors (149). However, this gap is largely unexplained by gender differences in *labor profiles* (i.e., age, level of education, working time arrangements and sectors of occupation). Most of this gap remains unexplained, or is attributed in part to the "maternity gap" (the difference in pay between mothers and non-mothers, *ceteris paribus*) or to the fact that the sector is highly feminized (in most economies, workers in highly feminized sectors receive lower wages on average than workers in non-feminized economic sectors). So, even with the same market profile, women are paid less than men.

➤ Unpaid work

Women take on a large share of unpaid care work, in particular by looking after of their children, the sick or elderly family members. It is estimated that, while women's contribution to healthcare represents around 5% of global GDP, almost half of their contribution is in fact unpaid and unrecognized (115).

3.2 Gender inequality, a subject for analysis and reflection

A great deal of work has been done on ways of tackling the underlying causes of gender inequality in healthcare (176,181,183,184). These include the following:

- Collect and analyze sector-specific salary data on a regular basis, in order to assess changes in working conditions and the pay gap between men and women. Introduce wage transparency and legal instruments to combat wage discrimination.
- Invest in decent jobs in the health and care sector to make the sector more resilient and meet the growing global demand for health services and care work. In particular, this means recognizing unpaid care work carried out in family and community settings, ensuring the transition of this work to formal employment, and taking women's unpaid work into account when analyzing the composition of the healthcare workforce (180).
- Reduce gender segregation by providing equal access to training and upward mobility opportunities for women, by raising awareness among girls and women of the importance of gender equality, and by promoting gender equality in the workplace. women to careers in the sciences, attracting more men to mid-level professional categories, promoting gender-neutral recruitment and hiring practices, and applying positive discrimination measures for positions of high responsibility.
- Intensify efforts to change cultural gender norms and combat stereotypes.

- Finally, to achieve equity, women will need special arrangements and provisions, in particular to ease the burden of their role as caregivers within the family. family unit. Among others, family-friendly policies (family leave policies supporting both mothers and fathers, on-site childcare facilities or subsidies for childcare expenses); or flexible working arrangements (flexible working hours, part-time or job-sharing options to meet the needs of healthcare professionals who also take on caring responsibilities).

Box 13: An example of family-friendly policy - paternity leave

While paid paternity leave contributes to drastically reducing the gap between men and women in the labor market, it is not yet universally available. While the global average length of maternity leave is 18 weeks, paternity leave is just 9 days.

While progress has been made in countries such as Rwanda (where maternity leave is one of the most "generous" in the region, at 12 weeks), where civil society players - particularly feminist organizations - are advocating a minimum of six weeks' paid paternity leave, such leave remains largely non-existent in low- and middle-income countries. And while all OECD countries offer paid maternity leave (with the exception of the USA), only around half offer paternity or parental leave. Even in these cases, take-up remains low in the absence of additional incentives for fathers (financial incentives, non-transferable leave, flexible working arrangements). In Japan, where paternity leave is a minimum of 6 months with no pay cut, only one father in 20 took leave in 2017.

Finally, reducing gender inequalities in the healthcare workforce can lead to better health outcomes for all, through improved access to care, better relations between patients and providers, better health education, greater attention to gender-specific health issues, reduced gender bias, etc. (181). The fight for greater equality between women and men is therefore not just a matter of principle for tomorrow's professions, it is also, as we have seen in this section, a *sine qua non* for meeting the challenges ahead.

4. Combating discrimination within healthcare systems

Recognition of the importance of discrimination and its consequences on the health of the populations who suffer from it is a key factor in the transformation of tomorrow's healthcare professions. If we want to take care of the most precarious people, move towards greater equity in access to care and improve the health of those who suffer most from disease, this aspect is unavoidable.

These discriminations are often unconscious, especially as healthcare professionals have often chosen these professions out of concern for others and their fragility (185). Nevertheless, they do exist (186), and several studies show that care is differentiated according to ethno-racial categories or sexual preferences, in all geographical areas and at all stages of life (187), (188) (189).

Research commissions, publications and recommendations to take better account of this risk of discrimination are multiplying (190)¹³⁰, as are panels at institutional or industry events.

¹³⁰ Examples include: the O'Neill-Lancet Commission on Racism, Structural Discrimination and Global Health, inaugurated on October 21, 2022 for a 3-year period (191); a special issue of the Lancet in December 2022 on ways of

The same is true of scientific research on global health.¹³¹ There is an urgent need for action¹³², within healthcare institutions themselves, in the training of healthcare professionals. As we are unable to delve into all the sources of discrimination, we have chosen to focus here more specifically on ethno-racial discrimination, which is often less well known.

4.1 The impact of discrimination based on ethnic origin on the health of people and groups of people who are victims of discrimination

At the 77th General Assembly of the United Nations in July 2022, the Special Rapporteur on the right of everyone to the enjoyment of the highest attainable standard of physical and mental health, Tlaleng Mofokeng¹³³, will transmit her second report entitled "Racism and the right to health" (194). This report presents the consequences of racism on health discrimination, particularly for black people, people of African descent, migrants, indigenous peoples and minorities. Structural aspects are highlighted, with a review of the legal framework, the history of medicine in relation to colonialism, and the ongoing manifestations of discrimination in the fundamental determinants of health. Finally, the report highlights good practice in public health interventions "aimed at realizing the right to a system of health protection that gives everyone an equal opportunity to enjoy the highest attainable standard of health" (p.2 of the report), and presents examples of reparations due on the grounds of racial discrimination for violations and abuses of the right to health.

Following the presentation of this report to the United Nations General Assembly, the Lancet and the O'Neill Institute for National and Global Health announced the inauguration of a Commission on Racism, Structural Discrimination and Global Health to put forward anti-racism strategies and actions to reduce barriers to access to care and health in populations facing such discrimination. At the commission's launch conference¹³⁴, it was pointed out that racism and structural discrimination have a direct impact on people's health. Many racist or discriminatory prejudices or false beliefs held by healthcare professionals can lead to sub-optimal care, and are therefore deleterious to patients' health (195). Some of these beliefs and practices had their origins in the teaching and training of healthcare professionals. Health professionals are mainly trained on diagrams/models/photos of white bodies¹³⁵.

In short, discrimination has a major impact on people's health. Beyond the social determinants of health, discrimination based on ethno-racial characteristics can endanger patients within healthcare systems. Healthcare professionals are not without racist biases, often unconscious, and these beliefs can also be perpetuated during training for the healthcare professions.

To remedy this situation, we can, for example, propose modifications to training curricula for tomorrow's healthcare professions, and add specific modules to train tomorrow's healthcare professionals specifically in these issues. We can also propose training modules

Advancing racial and ethnic equity in science, medicine and global health; the Lancet Series on racism, xenophobia, discrimination, and health; or the Lancet Global Health editorial in July 2023 entitled: "The way forward in decolonising global health" (192).

For further information on the Lancet special edition and series, see:

[https://www.thelancet.com/journals/lancet/issue/vol400no10368/PIIS0140-6736\(22\)X0051-2](https://www.thelancet.com/journals/lancet/issue/vol400no10368/PIIS0140-6736(22)X0051-2) and

[https://www.thelancet.com/series/racism-xenophobia-](https://www.thelancet.com/series/racism-xenophobia-discriminationhealth?utm_campaign=lancetracehealth22&utm_source=youtube&utm_medium=social)

[discriminationhealth?utm_campaign=lancetracehealth22&utm_source=youtube&utm_medium=social](https://www.thelancet.com/series/racism-xenophobia-discriminationhealth?utm_campaign=lancetracehealth22&utm_source=youtube&utm_medium=social) (consulted 03/08/2023).

¹³¹ See, for example, at the *World Health Summit 2023*, the session "Racism in Global Health, Difficult Conversations", viewable at the following link: <https://www.youtube.com/watch?v=Fkj5HgyzIFg> (accessed 03/08/2023).

¹³² See, for example, the brief article "Racism and health: the need for urgent action" published in the Lancet Global Health in October 2022 (193).

¹³³ For more information on the Rapporteur's mandate, see: <https://www.ohchr.org/en/special-procedures/sr-health> (accessed 03 August 2023).

¹³⁴ The conference entitled "Advancing Health Equity: Time To Address Racism And Structural Discrimination in Global Health", broadcast on October 21, 2022, can be viewed in full at <https://www.youtube.com/watch?v=eQvDGHAXy8s> (accessed August 03, 2023).

¹³⁵ Increasingly, the question of representation of the black patient is at the heart of the issues. A few years ago, a young Nigerian medical student illustrated this invisibilization of diversity by representing a black foetus (191).

to existing healthcare professionals as part of ongoing training, or lifelong learning. Another solution often put forward is to ensure that there are more healthcare professionals from population groups that are victims of racism and discrimination, for example by using quota systems or specific scholarships to promote healthcare professions among these populations. We are also seeing the emergence of observatories¹³⁶ and ad-hoc structures to document aspects linked to the impact of racism on health. Finally, all the healthcare professions that help build bridges between patients' and caregivers' experiences, and bring communities and tomorrow's healthcare systems closer together (community health workers, health mediators, peer helpers and patient association staff, for example) can become opportunities to recognize and target discriminatory attitudes and practices. With a view to greater equality between the various healthcare professions and greater horizontality between healthcare professionals, we can only hope that these voices capable of denouncing discriminatory behaviours, practices or experiences will be heard more loudly, so that appropriate solutions can emerge.

Promoting diversity in the healthcare professions, including race/ethnicity, gender, socio-economic status, rural origin and other minority communities, can help restore confidence in healthcare systems and meet the health needs of the population¹³⁷.

Evidence also suggests that diversity can mitigate prejudice and positively influence practice in areas of high need (197). Evidence-based strategies for improving health workforce diversity include investment in *pathways/pathways* programs to encourage and support future health careers, mentoring, recruitment and admissions practices, student support services and financial support, and diversity accreditation standards. Ensuring diversity in the healthcare workforce remains an ongoing challenge. In the United States, Blacks, Hispanics and Native Americans are significantly under-represented in high-income healthcare professions and, conversely, over-represented in low-wage healthcare professions (198).

In Canada, only 3.5% of medical students identify themselves as being of aboriginal origin, compared with 7.4% of the population, and only 6.4% grew up in a rural area, compared with 18.7% of the population (199). In Australia, the number of indigenous doctors is estimated at 400, representing less than 0.5% of doctors versus 3% of the population (200). The lack of diversity and inequality in the healthcare workforce reflects broader structural inequities that also led to racial, ethnic and socioeconomic disparities during the management of the Covid crisis, and constituted a major obstacle to the eventual rollout of the vaccine (201).

4.2 Global power imbalances

The drive to take better account of structural discrimination in healthcare and inequalities based on ethno-racial origin also has its own declinations in global healthcare, particularly for healthcare professions linked to academic research.

In the mid-2010s, the *London School of Hygiene and Tropical Medicine*, one of the world's most renowned training institutions in global health, organized a conference entitled "*Decolonize Global Health*", highlighting the paradox of having an entire field of research whose projects and objects are mainly in the South ("*Global South*") and whose researchers are mainly in the North (OECD countries). While the phenomenon of "parachuted researchers" is becoming increasingly rare (202,203), there are still

¹³⁶ Examples include the NHS "Race & Health Observatory", to be set up in 2021 (196), and the *Lancet's* in-house *Group for Racial Equity* (see: <https://www.thelancet.com/equity-diversity-inclusion/commitments> - accessed 03/08/2023).

¹³⁷ A developing body of work suggests that racial concordance improves communication and patient satisfaction (193) and has the potential to improve patient outcomes (194).

PRFIs take too little account of the day-to-day difficulties faced by global health researchers.

Global health researchers in PRFIs, whether in the biomedical or social sciences, often face great difficulties in their research or careers, and therefore find it harder than researchers from wealthier countries to participate in the international arena. Opportunities for tenure-track research positions with salaries that enable them to live solely from their research activities are very rare. Many researchers in the biomedical sciences therefore have a dual activity, for example as doctors and researchers, with very long working hours, a large number of parallel projects and a heavy workload. In the social sciences, it is common for researchers to engage in parallel consultancy activities, which are better remunerated than research activities, but sometimes pose major difficulties in terms of epistemological positioning. If these realities are also present for researchers in high-income countries, they are even more frequent in PRFIs.

For PRFI researchers, the lack of resources and funding to carry out global health research is not just a question of salary or professional opportunities, but also a technical issue of access to documentation, with the universities to which they belong not necessarily having the means to pay for subscriptions to scientific journals (sometimes at very high rates) or the most recent books and publications. Even the development of *open access* publications (publications to which anyone can have access without paying) can be a vector of inequality, as the publishers of these publications charge researchers (or rather the research laboratories to which these researchers belong) to publish. Thus, if many researchers have access to the content of *open access* articles, including those in PRFIs, researchers whose affiliates do not have the means to finance publication will lose out on publication opportunities (in an academic environment where the number of publications contributes significantly to the recognition of researchers and to their career opportunities and development).

Faced with these inequalities in access to international bodies, several solutions have been put forward, such as demanding greater diversity in the origins of members of the governance structures of the main global health institutions (204), or encouraging publications by researchers from PRFIs (*Joint Commitment for Action on Inclusion and Diversity in Publishing*)¹³⁸.

5. Advances in science, technology and digital health

When we talk about new technologies in healthcare, we're talking about a large number of advances that fall into multiple fields, such as digital health, biotechnological advances, artificial intelligence and *Machine Learning*, genomic medicine, Blockchain, Big Data and analytics, and many others. Each of these advances aims to strengthen the healthcare sector, by improving access to care, increasing the effectiveness of treatments, reducing costs or enabling a shift towards more personalized and preventive healthcare.

However, these advances also raise major concerns, as well as technical and ethical challenges. It is therefore essential to examine how these developments will transform the practices and training of today's healthcare professionals, and the new skills and frameworks required to harness and control the potential they represent.

5.1 The impact of digital health on healthcare practices and professions

This section explores some aspects of the impact of these technologies on the way healthcare professionals work.

Firstly, they will have an **impact on their relationship with patients, thanks in particular to telemonitoring and telemedicine**, which allow caregivers to remotely monitor patients' vital signs, health data and even certain chronic illnesses using devices.

¹³⁸ To find out more about this agreement, see: <https://www.rsc.org/policy-evidence-campaigns/inclusion-diversity/joint-commitment-for-action-inclusion-and-diversity-in-publishing/> (accessed 03/08/2023).

and sensors, which can improve access to care, particularly in remote or underserved areas (205).

The relationship with patients will also be altered by their **increased involvement in the healthcare decisions that concern them**. Improving people's access to their health data and reliable medical information via digital tools (secure messaging, videoconferencing tools, mobile health apps, wearable devices, etc.) should increase their health literacy and enable them to actively participate in decisions about their care. In low-income countries, telehealth initiatives using cell phones to improve access to care and health education for patients now number in the hundreds (206): for example, the mDiabetes program (207) in Senegal, or MomConnect in South Africa (208). However, these programs have not been sufficiently evaluated, and their effects in terms of genuine patient *empowerment* have yet to be confirmed (209).

These advances will have far-reaching repercussions **on diagnosis, choices and treatment methods**.

Box 14. Mobile telephony for diabetes patients - the mDiabetes program in Senegal

Created in 2014, mDiabète is a Senegalese application stemming from the global "Be He@lthy, Be Mobile" program launched by the World Health Organization (WHO) and the International Telecommunication Union (ITU).

It consists of 4 parts: **1)** mAwareness, for the general public, **2)** mEducation, for diabetic patients, **3)** mTraining, for healthcare professionals, **4)** mMonitoring, for the technical aspects of message delivery.

Through the application, patients receive SMS messages explaining how to manage their disease, what good habits to adopt, and how to liaise with the doctor or healthcare professional who is monitoring them. In this way, patients and those around them can actively participate in their treatment, which has facilitated communication with healthcare professionals (who can then ask their patients what they have understood, if they need further information, or if they have any feedback on their management).

This same program has seen the emergence of a number of national applications, not only for diabetes in India and Egypt, but also for other diseases, such as cervical cancer in Zambia or the fight against smoking in Costa Rica **(3)**.

treatment. For example, the explosion in medical knowledge, the complexity of treatments and the exponential increase in healthcare data sources (ranging from genomic studies to data from connected devices), will increase the use of *data-driven decision making* solutions - enabling treatments to be adapted and personalized - or diagnostic tools using artificial intelligence. Numerous decision support, knowledge management and e-health systems are currently being developed, such as the European "Desiree" program, which supports clinicians in the treatment and follow-up of patients with breast cancer.

Health information systems (such as hospital information systems, computerized patient records or secure professional health messaging) **will change the way care is coordinated**, by centralizing patient information, improving accessibility to this data and coordination between different professionals, and reducing certain administrative burdens. In 2020 in France, the SEGUR du numérique en santé recommended *"generalizing the fluid and secure sharing of healthcare data between professionals and users to provide better care and support"* (210).

However, while a majority of healthcare professionals already use some of these tools in their daily work, many of them question the real added value of the technologies, complain that they hinder them in their work, ask for guarantees against their potential undesirable effects (211), such as confidentiality and security risks, job cuts, dependency or reliability problems, ethical dilemmas, inequalities of access, etc.; or even declare that they do not have the opportunity to acquire the skills needed to use them fully. Visit

France, an Odexa - Uness survey revealed in 2018 that 79% of healthcare students and 73% of healthcare professionals felt unprepared and insufficiently trained on these digital themes(212).

Box 15: How the Covid pandemic accelerated the use of digital tools

With the Covid-19 pandemic, the use of digital technologies in the healthcare sector has become unavoidable, due to increased demand for telemedicine, digital health tools and digital tracking of health information. In Norway, for example, the share of teleconsultations in primary healthcare has risen from 5% before the pandemic to almost 60% during the crisis. In France, the number of teleconsultations approached one million per week in April 2020, compared with around 10,000 per week before March (*OECD & European Observatory on Healthcare Systems and Policies, 2021*).

The pandemic thus gave rise to a number of emergency policies facilitating the use of these tools - leading, in particular, to changes in reimbursement policies, training for healthcare professionals in the use of these technologies, and increased investment in this field. In 2020, global investment in the sector rose by 103% year-on-year, from \$10.6 billion in 2019 to \$21.6 billion in 2020 (*Mercom Capital Group, 2020*).

This sudden, massive use of digital healthcare tools showed that the obstacles to the adoption of these tools before the pandemic were linked to individual, organizational and systemic challenges - rather than technical ones.

5.2 The integration of digital tools and new technologies in the healthcare sector is not simply a question of technical change. It requires complex changes in human attitudes and skills, as well as in the organization of work and the legal and financial frameworks that structure it.

Several global strategic objectives have been identified to guide the development and dissemination of these advances(211,213) (211) :

- **Promote global collaboration** to advance the development and transfer of knowledge on health technologies; in particular for developing countries. low- and middle-income countries, where there are still obstacles linked to fundamental infrastructure issues such as Internet access, interoperability, costs, access to technology and even access to electricity.
- **Ensuring that healthcare professionals and patients have confidence in these advances** while minimizing the risks; establishing national health strategies and technology, advancing assessment and regulatory safeguards to ensure that technologies have a positive impact, and encouraging the design of easy-to-use interfaces.
- **Adapting the organization of health service delivery and the related legal and financial frameworks**; setting up specialized structures within governments to reflect on new approaches and ensure timely revision laws, payment systems and organizational frameworks, matching skills supply and demand, and factoring the digital and technological future into healthcare workforce planning.

- **Enhance the expertise and skills needed to make effective use of technology in healthcare;** by including new digital skills in the core content of healthcare training courses, and creating new categories of professionals with hybrid clinical, technical and prospective skills (115).

With regard to this last point, the French Ministry of Health has developed a reference system "*Base and transversal digital health skills*", which will be made compulsory in the majority of health training courses from the start of the 2024 academic year. The skills listed in this foundation can be extended to other countries: learning to understand and process and exploit health data in compliance with regulations, knowing how to use digital platforms, software and connected tools to better communicate with patients and other professionals, connaître les enjeux sécuritaires et savoir se prémunir des risques associés, respecting good practices in telehealth (214), or simply acquiring the technical skills needed to use new technologies.

These changes in training - both initial and continuing - will have to be based on the results of the 5 major areas of technological research for healthcare, i.e. imaging, technologies associated with drug development, biotechnologies and bioengineering, surgery and other interventional techniques, and technologies associated with digital health(215). Advances in these fields will also give rise to new categories of professionals, including technicians in bioinformatics, robotics or bioprinting, as well as specialists in artificial intelligence, the Internet of Things, regulatory affairs for healthcare technologies, and so on.

Finally, the integration of these new technologies into our healthcare systems will need to be approached with caution and guided by principles of ethics, equity and patient-centered care.

In 2021, the Comité national pilote d'éthique du numérique (CNPEN), which operates under the aegis of the CCNE, published an opinion entitled "*Manifesto for digital ethics*", which reiterated the need to frame the development of these technologies in terms of ethical principles, with particular reference to the social, economic and environmental sustainability of digital developments, the means of respecting people's autonomy and combating the digital divide, and the conditions for exercising our free will in a relationship between human being and machine (216). By framing the development of these technologies with these considerations in mind, it will be possible to harness their transformative power to facilitate the work of healthcare professionals and advance the health and well-being of individuals.

6. Changes in training for the healthcare professions

Worldwide, 2,420 medical schools, 467 schools or departments of public health and an unknown number of post-secondary institutions train around 1 million new doctors, nurses, midwives and public health professionals every year - with major ^{imbalances}¹³⁹. However, a 2010 Lancet-commissioned report on the future of health professional training found that it was plagued by systemic problems: mismatches between the skills of health workers and the needs of patients and the population, persistent stratification of professional status by gender, lack of teamwork, narrow technical focus without broader contextual understanding, episodic encounters rather than ongoing patient care, orientation

¹³⁹In 2010, 26 countries in sub-Saharan Africa had only one or no medical school (120).

predominantly hospital-based to the detriment of primary care, quantitative and qualitative imbalances in the professional labor market and a lack of leadership to improve healthcare system performance (125).

Current training systems are not adapted to the new health challenges of the 21st century, and increasing the number of graduates will not be the only answer to the global shortage of healthcare professionals. It will also be necessary to develop these training courses, to increase not only the quantity, but also the quality and relevance of healthcare professions, in order to obtain the right mix of skills to meet the ever-changing needs of populations worldwide.

Of the nine reforms proposed by the Lancet Commission, three that we feel are particularly important will be explored in detail in this section: 1) the adoption of competency-based curricula that respond to rapidly changing needs, 2) promoting inter- and trans-professional education that breaks down professional silos, and 3) harnessing the power of information technology for learning.

Box 16. Reforms proposed by the Lancet Commission

Health professionals for a new century: transforming education to strengthen health systems in an interdependent world (120)

1. The adoption of competency-based curricula that respond to rapidly changing needs rather than being dominated by static courses ;
2. The promotion of inter-professional and trans-professional training that breaks down professional silos while reinforcing collaborative, non-hierarchical relationships within effective teams;
3. Harnessing the power of information technology for learning ;
4. Adaptation at the local level, but harnessing resources at the global level so as to meet local challenges while making use of globally shared knowledge, experience and resources;
5. Strengthening educational resources, since teachers, curricula, teaching materials and infrastructure are all necessary tools for the acquisition of skills;
6. Promote a new professionalism that uses skills as an objective criterion for classifying healthcare professionals, transforming the current conventional silos;
7. Establish joint planning mechanisms in each country to involve key stakeholders, in particular ministries of education and health, professional associations and the academic community, to overcome fragmentation by assessing national conditions, setting priorities, developing policies, monitoring change and harmonizing the supply and demand of health professionals to meet the health needs of the population;
8. Expanding from academic centers to academic systems, extending the traditional discovery-care-education continuum in schools and hospitals to primary care facilities and communities;
9. Establishing links through networks, alliances and consortiums between educational establishments worldwide, and between allied players such as governments, civil society organizations, businesses and the media.

6.1 Develop training programs to upgrade skills and formalize new professions

On the one hand, training in the "traditional" healthcare professions - medical and paramedical - must evolve to incorporate the new knowledge and skills that will be required in their professions in the years to come. These new skills are numerous (and are the subject of specific sections in this study).

The impact of climate change on health, in particular, will need to be integrated into educational curricula. Between 2030 and 2050, climate change could entrainer around 250,000 additional deaths per year, due to malnutrition, malaria, diarrhea and heat stress (217). Health professionals will therefore need to learn how to mitigate and treat health risks caused by climate change, such as illnesses and injuries caused by extreme weather events, air pollution, inadequate drinking water, sanitation and hygiene (WASH), chemicals, radiation, emerging infectious diseases, and other important environment-related health risks. **The same applies to the "One Health" concept**, which is intrinsically linked to the

climate change, which takes into account the interconnectedness of living organisms and ecosystems, and promotes a global, multidisciplinary approach to health. For this discipline in particular, training courses - which will cover antibiotic resistance, vector-borne diseases, diseases in food-producing animals or water contamination - will also need to be delivered by professionals from a variety of disciplines, and not just human health professionals: veterinarians, epidemiologists, but also ecologists, sociologists, anthropologists, geographers and modellers (218).

As explained in the section on the impact of new technologies in healthcare, **healthcare professionals will need to acquire skills in the five main areas of new technologies in healthcare**: 1) imaging, 2) technologies associated with drug development, 3) biotechnologies and bioengineering, 4) surgery and other interventional techniques, and 5) technologies associated with digital health. The aim will be to encourage the creation of training courses for hybrid professions (nurse-specialist, nurse-technician, etc.), such as surgical robotics instrumentalist operating room nurse, or decision support health assistant (maîtrising tools using *big data* and AI) (219).

The relationship of trust between healthcare professional and patient is essential to the success of treatment and care. It is important to consider that the arrival of these advances will profoundly alter this patient-caregiver relationship, particularly as a result of the development of telemedicine, or the implementation of technological automation or decision-support processes that could replace routine acts currently performed by healthcare professionals: taking medical histories, analyzing medical test results, AI-enabled chatbots that can answer questions and provide advice, etc. So, to compensate for this loss of contact, training courses will need to focus on the "savoir-être" skills that will be essential if this relationship is to remain beneficial. These psychosocial, emotional, social and cognitive skills can be taught (187), for example:

- Know how to communicate and establish an ethical and empathetic dialogue with patients, caregivers, users and other professionals;
- Listening to patients to help them develop informed consent;
- Managing and communicating in crisis situations (epidemics, health crises, critical incidents, etc.).
- Good knowledge of the healthcare system (organization, main institutional players, regulation, etc.);
- Know how to manage, support or take into account greater team autonomy in the organization of their work and their practices.

In order to move away from a predominantly hospital-based training and professionalization, **students will also need to be exposed to and trained in the importance of primary care and local health contexts** (Lancet Commission recommendation no. 8). University systems will need to provide a more balanced environment for training future professionals, enabling them to engage with local communities (for example, through internships), in order to proactively address prevention and population-centered care. This will enable students to be directly exposed to local health contexts and better understand the social determinants of health, the importance of the comprehensive care continuum and the role of context (socio-economic, geographical) in health and disease (220).

On the other hand, the so-called "traditional" caregivers will not be able to carry all of these additional needs. Governments, in conjunction with educational institutions, will be responsible for identifying these new professions, not directly involved in care, which will be needed to spread the workload and meet the new needs; and, accordingly, for developing initial and continuing training opportunities for these new professions (187, 189), linked to the aforementioned challenges:

- Environmental issues: risk manager, HSE (Health, Safety, Environment) or QSE (Quality, Safety, Environment) manager, medical waste treatment technician ;
- Technological challenges: digital intermediation platform manager, e-patient advisor, robotics or 3D printing technician, clinical data attaché ;
- Social issues: health path referrers, health prevention coaches, health mediators, life assistants, etc.

6.2 Breaking down barriers between existing professions

Despite mounting evidence that care delivered by highly collaborative teams leads to better patient outcomes, until recently the education of healthcare professionals was designed to keep the professions separate until the end of the training process. In light of this evidence, interprofessional education has seen a resurgence of interest. It is defined as a process whereby students from different professional programs learn to study and work together during certain periods of their training, without regard to hierarchy. In addition to specific technical skills, this type of teaching emphasizes generic and cross-disciplinary skills, such as analytical, leadership, management and communication skills. Its aim is to enhance collaboration and teamwork, in order to improve patient care (125).

Box 17: An example of interprofessional education Ghent

University, Belgium

During the third year of their professional health training at Ghent University, students in medicine, social pedagogy, sociology and health promotion are exposed to the disadvantaged communities of Ghent, Belgium. Each team explores its assigned neighborhood to observe the characteristics and composition of its population, and then collect medical data, as well as non-medical indicators (e.g. criminological data), on the quality of life in certain neighborhoods.

Students then come together as a group to discuss the information they have gathered and observed; professors have noted that medical students often want to solve problems immediately, while social science students are more inclined to analyze the problem, examine determinants and consider whether the problem can be addressed by their group. Such collaborative work exposes students to different ways of thinking about health problems and the thought processes of other disciplines.

In the same vein, we might consider moving towards the decompartmentalization of the various healthcare professions (recommendation no. 6 of the Lancet commission): moving from a training logic centered on professions to a training logic based on competencies, by creating opportunities for evolution through continuing education and the creation of gateways. In France, for example, the "Ma Santé 2022" includes a section on the evolution of professional promotion that brings together several measures(221):

- Facilitate the career paths of paramedical professionals to enable them to develop their skills throughout their professional lives, particularly in the context of cooperative ventures. cross-industry ;
- Develop promotional ^{studies}¹⁴⁰ by increasing the number of nursing assistants (AS) in nursing training, and by setting up specific funding for advanced practice ^{training}¹⁴¹ and medical training for paramedical professionals, training for managers ;
- Facilitate the professional development of doctors by providing financial support for those who decide to change specialties;
- Organize the identification and personalized support of nursing staff with proven potential for progress (e.g. a nurse capable of embarking on medical studies);
- Preserve but simplify the organization of competitive examinations to ensure effective and rapid career development opportunities (and thus promote access to medical and nursing studies). paramedics to people from other sectors); etc.

In this logic of "decompartmentalizing" knowledge, and to ensure that global health is truly considered a priority on the international agenda, it is essential to train healthcare professionals in the issues and specificities of global governance and health diplomacy. At the same time, it is imperative to reinforce the training of political leaders and diplomats in global health issues (222).

6.3 Using new technologies for learning

Expanding training opportunities and modalities through the use of new technologies is one way to enable access to health training for a greater number of students, particularly in underserved and isolated areas; but also to facilitate the acquisition of basic knowledge, improve the coordination of skills, entrainer to rare or critical events, learn team training, improve psychomotor skills, or relieve overcrowding in the care facilities where students are trained (223) . These new technologies include :

- Podcasts, videos and other multimedia platforms for recording and broadcasting courses;
- Computer-assisted learning: text-based websites, interactive electronic modules (eModules) using virtual clinical cases and graphics;
- Mobile devices: personal digital assistants (used by students for medical questions, patient management and treatment decisions) or applications medical smartphone applications focusing on anatomy, physiology or medical problem-solving, diagnosis and treatment;
- Wearable technologies: smart objects such as Internet-connected glasses with eye-level displays and voice control;
- Digital games: role-playing games that present medical situations and improve hand-eye coordination and reflexes;
- Simulation: the use of virtual reality, computers, mannequins or 3D representations of body parts to mimic real patients, anatomical regions or clinical tasks;

In particular, these new technologies will make it possible to expand online and distance learning opportunities in both high-income and low-income countries, and thus reach more students. Schools located in countries with limited resources or

¹⁴⁰Promotional studies are a scheme that enables healthcare professionals to obtain a diploma or certificate in the health and social sector as part of a career development project, while remaining in their current position, and thus encourage internal promotion.

¹⁴¹Advanced practice enables paramedical professionals (e.g. nurses) to take on more advanced missions and skills previously reserved for doctors alone.

in rural areas join forces with schools in wealthier countries or cities, who share their educational materials via the aforementioned tools. On the other hand, this implies that teaching materials are adapted to the realities of healthcare in resource-limited areas, that schools are equipped with the necessary materials, and that students and teaching staff are trained in their use (224).

The use of these technologies can result in greater educational opportunities for students while improving the effectiveness and efficiency of teaching staff. However, in order not to increase digital and educational inequalities between countries and regions, learning via these technologies in medical education will need to remain a means to an end, rather than an end in itself; as their use requires a certain level of institutional development in terms of human resources and infrastructure that is not always sufficient in low- and middle-income countries.

Box 18: Harnessing new technologies for medical training - the example of surgical simulators in ophthalmology (198)

Ophthalmological surgical simulation enables future ophthalmologists to learn about operations such as cataract and myopia surgery. These virtual reality devices are designed to faithfully reproduce real-life conditions. Under the supervision of a senior surgeon, each student can improve his or her surgical technique, learn to control instruments and manage operating time. Multiple virtual scenarios can be created to learn how to deal with the unexpected, enabling students to optimize their surgical skills outside the operating theatre.

7. Mobility, migration and new opportunities

The mobility of healthcare professionals can be considered in three ways:

- as a potential opportunity for people who want to move,
- as a potential opportunity for countries that are the global recipients of the main migration flows of healthcare professionals,
- as a potential loss for the countries where the main migration flows originate from the healthcare professionals who provided their initial training, in the case of the public sector.

Many factors explain the growing mobility of healthcare professionals: internationalization of training, increased exchanges between practitioners, reinforced systems for diploma recognition, inequalities in supply (particularly in low-income countries) and demand (particularly in the richest countries).

Opportunities for medical training abroad and the interest of individuals in studying medicine abroad is a growing trend. According to the OECD, international medical students account for half of all medical students in Ireland, for example, a third in Romania and a quarter in Poland (160).

All these elements show that the mobilities and migrations of healthcare students or professionals cannot be considered solely as a negative aspect in the more general context of the study and planning of human resources in health. On the contrary, these migratory flows often reflect not only individual opportunities, but also opportunities for the countries of destination, since the mobility of individuals can also lead to an enrichment of practices, a different vision of certain health problems and an alternative way of dealing with them.

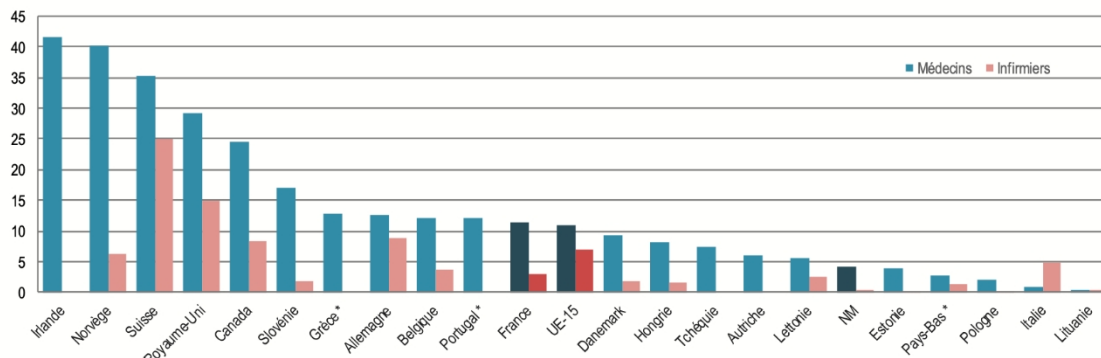
This positive aspect of the migration of healthcare professionals must not, however, conceal certain managerial practices which would result in foreign-trained healthcare professionals being employed below their level of knowledge and competence, thereby enabling them to be paid less than healthcare professionals born or trained in the destination country with equal qualifications. What's more, it was established in the introduction to this report that the simple job title of a foreign-trained healthcare professional provides little information about his or her knowledge and skills, as training in a given profession is rarely standardized: a translated job name may refer to a different reality than in the country of origin.

In order to help establish equivalent recruitment, working and remuneration conditions for all healthcare professionals, whatever their country of origin or training, the WHO introduced a "Global Code of Practice for the International Recruitment of Health Personnel" in 2010 (8).

7.1 The scale of healthcare professional mobility and its impact on healthcare systems

According to the OECD, one in six doctors practicing in OECD countries studied abroad, and the number of foreign-born doctors and nurses rose by 20% in the 2010s, compared with the previous decade (226).

FIGURE 15: PROPORTION OF DOCTORS AND NURSES TRAINED ABROAD IN 2018 (%)



* Données 2017.

Note > Moyennes de l'UE calculées à partir des dernières années et pays disponibles.

Source > OCDE et Eurostat, Statistiques sur la santé.

OECD data show that the inflow of foreign-trained doctors and nurses into OECD countries reached a plateau in most countries between 2010 and 2018. The recent increase in emigration of healthcare professionals can be attributed to the COVID-19 pandemic. Annual flows of foreign-trained doctors and nurses in some OECD countries have risen slightly in recent years

Furthermore, the migration flows of healthcare professionals are often more complex than simple "South-North" flows directed by the notion of *brain drain* alone. The 2019 OECD report cited above shows, for example, that some foreign-trained doctors for countries such as Israel, Norway, Switzerland, or the USA, were born in these countries, obtained their medical degree abroad before returning to their country of birth. Other countries, such as South Africa, are both "exporters" and "importers". "import" of healthcare personnel.

According to the ILO, unmet demand for healthcare workers in high-income countries will continue to increase the migration of healthcare professionals from low- and middle-income countries, which lack the means to put in place the necessary incentives to retain them. A significant number of migrant healthcare workers, mainly women, are following this geographical trend to meet demand in wealthy countries. In general, they

leave their own children with relatives or domestic workers, giving rise to a phenomenon known as the "global care chain", or the "medical carousel" of international migration of healthcare professionals (227).

What's more, the "returns on investment" lost as a result of outward migration are estimated to be substantial for the countries of origin. For example, the migration of doctors from Ethiopia, Kenya, Malawi, Nigeria, South Africa, Tanzania, Uganda, Zambia and Zimbabwe has been estimated at \$2.17 billion in lost return on investment in education (228).

Low- and lower-middle-income countries produce around a third of foreign-trained healthcare professionals. An OECD report revealed that in ten African and Latin American countries, emigration rates for native-born doctors exceeded 50% (229). Looking at emigration rates (the ratio of foreign-trained doctors to the total number of doctors trained in the country), four of the top 20 countries are in Europe (Estonia, Iceland, Ireland and Malta), five in sub-Saharan Africa (Congo, Ethiopia, Ghana, Liberia and Zimbabwe) and the rest in the Caribbean (230).

7.2 The WHO Global Code of Practice for the International Recruitment of Health Personnel

The purpose of the WHO Global Code of Practice is threefold:

- establish a few ethical "rules of the game" to reconcile and maximize the benefits for all (healthcare personnel, destination country, country of origin)
- mobilize all players to invest more in healthcare systems in developing countries facing shortages of healthcare personnel.
- encourage mutually beneficial government-to-government agreements to formalize and frame these mobilities (231).

Two important tools complete this global code of practice: a list of countries requiring special attention because they are particularly vulnerable to shortages of healthcare professionals, and an international platform for international agreements.

In 2020, WHO published a Health Workforce Support and Safeguard List, which includes 47 countries facing the most pressing health workforce challenges related to CSU (24). In January 2023, eight more countries were added to the list, bringing to 55 the number of countries requiring additional protection against active international recruitment (24). The list is dynamic, with updates scheduled every three years, reflecting countries' progress in health workforce density and service coverage.

FIGURE 16: WHO SUPPORT AND SAFEGUARD LIST FOR HEALTHCARE PROFESSIONALS (2023)

Africa (37)	Angola, Benin, Burkina Faso, Cameroon, Central African Republic, Chad, Comoros, DRC, Ivory Coast, Congo Brazzaville, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea Bissau, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mozambique, Niger,
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	Nigeria, Rwanda, Senegal, Sierra Leone, South Sudan, Togo, Uganda, Tanzania, Zambia, Zimbabwe
Latin America	Haiti
Mediterranean oriental	Afghanistan, Djibouti, Pakistan, Somalia, Sudan, Yemen
Southeast Asia	Bangladesh, Nepal, Timor-Leste
Pacific western	Kiribati, Laos, Micronesia, Papua New Guinea, Samoa, Islands Solomon Islands, Tuvalu, Vanuatu

The aim here is not to impose restrictions on the voluntary mobility of healthcare professionals, but simply to draw countries' attention to these issues. The Covid crisis has shown how some countries can take a proactive approach to "canvassing" for healthcare personnel from other countries in times of crisis (229).

An international platform has also been set up by the WHO, ILO and OECD to promote bilateral or regional agreements and safeguard the economic interests of training countries (e.g. the 500,000 Filipino nurses who will be going to work in Germany by 2030) (232).

Another reference text on these issues is the ILO's general principles and operational guidelines for fair recruitment, which cover all economic sectors and all categories of professionals, and identify the potential dangers that can be associated with international recruitment, such as the reduction of the workforce, the lowering of labor standards, wages or working conditions, and the general weakening of decent work (233).

7.3 - Policies implemented by countries

Aware of the issues surrounding the mobility of healthcare professionals, more and more countries are implementing policies specifically dedicated to these questions. The approaches adopted by both sending and receiving countries are highly diversified (115).

On the part of home countries, some have implemented policies to restrict the migration of healthcare professionals, while others capitalize on the benefits it offers. China, for example, has implemented a policy known as "*Young Thousand Talents*" to attract highly qualified Chinese nationals abroad and bring them back to the country (234). Similarly, the Thai government is stepping up initiatives to ensure that medical students trained abroad on government scholarships return to their country of origin (235). Other countries, on the other hand, are banking on the potentially positive spinoffs from the migration of their healthcare personnel (notably remittances from the diaspora sent to families in the country of origin), such as the Philippines, which is the world's leading expatriate healthcare provider.

the world's "supplier" of nurses, with remittances accounting for almost 10% of the country's GDP (236).

The strategies adopted by host countries are equally varied. Measures are often put in place by countries wishing to attract foreign healthcare professionals: lifting of visa restrictions, facilitated recognition of diplomas, points-based migration systems, tax breaks, availability of permanent resident status, etc. (230).

Box 19: An example of an international agreement to facilitate the international mobility of healthcare professionals: Germany's "Triple Win" project

To cope with the shortage (experts predict that around 500,000 additional nurses will be needed in Germany by 2030) and facilitate the international mobility of qualified nurses to Germany, the German government has signed agreements with seven countries (India, Vietnam, Tunisia, Serbia, Bosnia-Herzegovina, Philippines, Jordan).

The aim is to provide a framework for the selection and placement of nursing staff: foreign nurses receive linguistic and professional preparation for their future employment in Germany, as well as integration support. In Germany, they undergo a 12-month procedure to have their professional qualifications recognized. These agreements are known as the "*triple win project*", to emphasize that employers, the country of origin and the nurses themselves are all winners.

Since the program's launch in 2013 and until 2021, more than 4,700 nurses from the countries concerned have come to work in Germany using this scheme.

Source. Website of the Federal Employment Agency (Bundesagentur für Arbeit):

<https://www.arbeitsagentur.de/vor-ort/zav/projects-programs/health-and-care/triple-win>

Some host countries have set up structured training and education schemes for migrant healthcare workers, such as Ireland, whose healthcare system is dependent on

In addition, the Irish government has a high proportion of healthcare workers from Pakistan and Sudan. To reconcile this need with its commitment to the WHO Global Code of Practice, the Irish government has launched a two-year postgraduate training program - the International Medical Graduate Training Initiative (IMGTI) - for Pakistani doctors. The overall aim is for these graduates to gain clinical training experience in the short term that is otherwise inaccessible to them, in order to improve health services in their home countries in the long term (237).

The general idea that emerges from these experiences is that **incentives rather than constraints** should be put in place to address the various imbalances (national, regional, international). The mobility of healthcare professionals is a fact of life, and it seems to us that, overall, it should be seen as an opportunity (capitalizing on different medical cultures, setting up international networks, etc.) and that it is not a question of putting in place new obstacles or seeking to limit this mobility, but rather of accompanying it with incentive measures to re-establish a form of balance during these mobilities. Firstly, to prevent healthcare professionals from being hired below their qualifications and/or with lower salaries and/or worse working conditions than their national colleagues, but also to avoid the paradoxical situation where PRFIs finance the training of healthcare professionals who then go on to practice elsewhere, preventing these states from reducing their own national shortage of healthcare professionals.

8. Health and the environment: professional opportunities and an increasingly recognized urgency, but what new professions?

The links between health and the environment have been studied and taken into account by the international community and global health bodies for over three decades¹⁴² (238)¹⁴³. Within the broad range of health challenges and problems linked to the interaction between people and their environment, several key themes stand out. Firstly, the effects of climate change on people's health: heat waves, natural disasters, population displacements, and so on. Secondly, aspects relating specifically to environmental health: environmental pollution, air pollution, pollution within homes, non-treatment of wastewater or waste, etc. According to the WHO, "at least 12.6 million people die every year as a result of avoidable environmental factors"¹⁴⁴. Finally, the effect of interactions between human health, animal health and environmental health is studied in the "One Health", which focuses, for example, on the emergence of antibiotic resistance or epidemics specifically caused by zoonoses, environmental health determinants and food safety guarantees.

For each of these three main areas of linkage between health and the environment, we present the health professions at work and the future dynamics for health professionals.

8.1 Health and climate change: an emerging theme, but what specific professions?

The links between health and climate change are increasingly well known (217,239-241), recognized and publicized¹⁴⁵, and the various effects of climate change on the health of populations are gradually becoming a global health emergency, as these effects become visible and tangible. Addressing the health effects of climate change through appropriate public policies is also becoming a matter of urgency (242), as climate change asserts itself as the main global public health threat of the 21st century (243).

While strategies are gradually being proposed to organize collectively and try to cope with the effects of climate change on health (244-246)¹⁴⁶,

There don't seem to be any new emerging professions responding to the urgent need to deal with the effects of climate change, and few training modules dealing with the specificities of health and environmental issues have been added to the general curricula of healthcare professionals¹⁴⁷. In terms of healthcare professionals, three groups of occupations will be primarily concerned by dealing with the effects of environmental change on human health. Firstly, experienced health professionals

¹⁴² "The term 'health and environment' [...] refers to the effects on health of the interaction between man and a range of factors present in his physical and social environment. The physical environment includes both natural and man-made elements, consisting of physical, chemical and biological factors. The social environment includes a whole range of factors (values, mores, beliefs, etc.) and structures that condition, for example, access to employment and education, and determine health risks and benefits" (238).

¹⁴³ "The general links between health and the environment are considered in the context of sustainable development, by going beyond the determinants of health present in the physical environment and encompassing the consequences for health of the interaction between populations and all the factors present in their physical and social environment. [...] The main elements of the strategy are: an expanded environmental health promotion program; an expanded chemical safety promotion program [...]; expanded action and collaboration on health and environment issues throughout the Organization; and strengthened partnerships with other international and non-governmental organizations." (238). See also the WHO Health and Environment Commission of 1992, or the United Nations Conference on Environment and Development of the same year.

¹⁴⁴ See the WHO website "Towards a safer and healthier environment": <https://www.who.int/fr/news-room/commentaries/detail/towards-a-healthier-and-safer-environment>, accessed 25/06/2023.

¹⁴⁵ For example, on June 22, 2023, the WHO Director-General appointed Dr. Vanessa Kerry as Special Envoy for Climate Change and Health. See: <https://www.who.int/fr/news/item/22-06-2023-dr-vanessa-kerry-appointed-as-who-director-general-special-envoy-for-climate-change-and-health>, accessed June 25, 2023.

¹⁴⁶ See for example the article in French on the WHO website "Le recueil de 500 mesures publié par l'OMS et des partenaires des Nations Unies vise à faire reculer les maladies dues à des facteurs environnementaux et à sauver des vies": <https://www.who.int/fr/news/item/03-09-2021-who-and-un-partners-compendium-of-500-actions-aims-to-reduce-diseases-from-environmental-factors-and-save-lives>, accessed 25/06/2023.

¹⁴⁷ An example of recent sustainable health training initiatives is the article "Teaching sustainable health care through the critical medical humanities" (247).

(see next section). Secondly, the professions relevant to the "One Health" approach (see section 8.2).

8.2 Environmental health

The emblematic field of environmental health research and action is toxicology. Environmental health is primarily concerned with the links between the environment, pollution and their impact on human health (248). Whether it's a question of occupational health or industrial pollution (asbestos, for example, or more recently glyphosate), exposure to air pollution or electromagnetic waves, zoonoses (such as bovine spongiform encephalopathy, also known as mad cow disease, avian flu, Ebola or Covid-19) or food contaminated by bacteria, environmental health professions are relatively similar to those of public health. Epidemiology, health geography, clinical research, biostatistics, virology, genetics and the social sciences of health are the main disciplinary fields mobilized to monitor and study environmental health problems.

In terms of the dynamics of tomorrow's healthcare professions, it seems that environmental health specialists will be increasingly mobilized, and we can expect a multiplication of training and specialization courses. As epidemics and health scandals multiply, these professions are becoming increasingly visible, and the emergence and development of the One Health approach (see next section) is also a professional opportunity and a source of funding for environmental health professionals in the years to come.

While we can therefore expect to see an increase in the number of opportunities for environmental health professions, we have not identified a trend towards the creation of new professions in this field. In fact, we note that human health and environmental health professions remain relatively separate, even when they are similar. These two fields often evolve in parallel.

It would also be interesting, against a backdrop of growing mistrust of public authorities and environmental health experts on the one hand, and the proliferation on social networks of misinformation and conspiracy theories related to this field on the other¹⁴⁸, to see the emergence of an equivalent of health mediators specialized in environmental health issues. The essential role of civil society and the drive to bring healthcare players closer to communities (described in section 2 of this part) could also include environmental health, in order to provide reliable, informed answers to recent scientific findings to the questions citizens have on these subjects.

Scientific journalism and the popularization of science via various media (television, newspapers, social networks) aimed at communicating reliable information to the general public are professions that already exist, but for which we could think of specific variations in environmental health.

8.3 The One Health approach

The One Health approach, which links human health, animal health and environmental health, and considers the importance of interdependence between these three fields, has developed strongly in recent years. The (theoretical or proven) animal origins of several major global health epidemics in recent years have contributed to the strengthening and visibility of this approach.

While we recognize the value of bringing specialists from these three fields to the table, and encouraging cross-disciplinary research and exchanges between them, there don't yet seem to be any healthcare professions specifically dedicated to the One Health approach. Certain research or public action themes are on the agenda: questions of drug regulation in human and animal health in relation to the emergence of antibiotic resistance are at the heart of the One Health approach. Visit

¹⁴⁸ Think, for example, of the dystopian theories about the supposed links between the Covid-19 vaccine and the development of 5G.

Professional opportunities for experts in these fields are therefore multiplying, and specialized training courses (e.g. Master's 2) could rapidly be set up.

However, it seems that the healthcare professions linked to the One Health approach are still the existing professions in epidemiology, toxicology, biology, demography, health economics, health geography, health sociology and so on. For the time being, there is no momentum for the emergence of new professions specific to the One Health approach.

On the other hand, the necessary "decarbonization of healthcare systems" (249) will require the development of specific skills to build greener, more environmentally-friendly, more sustainable and more resilient healthcare services.

Conclusion

All the challenges analyzed in this third section point to a general rationale for a more general vision of health, in order to meet the societal and health challenges of the coming decades:

- a more general vision in the sense of a **more inclusive approach** to what we call the "healthcare professions", enabling greater articulation with social professions, for example (a growing number of positions will be on the borderline between the health and social sectors.) The aim will be to take better account of all professions, beyond care, to "decompartmentalize" the healthcare sector and broaden the scope of "healthcare professionals" to include not only social professions, but also professions in public health, healthcare research, logistics, etc. The "skill mix" approach is playing an increasingly important role in the literature, promoting the ongoing search for the best mix of necessary skills and the best balance between the number of healthcare professionals to be trained for each profession;
- A more general vision along the lines of **despecializing healthcare workers**, to train more professionals with more cross-disciplinary skills and enable more bridges between the different disciplines. different professions / different statuses. The aim is to challenge the primacy of the triptych "This may involve specific cases of task delegation or cooperation protocols, specialization processes (such as advanced practice nurses in France) or the acquisition of new prerogatives (such as licensed midwives). These may involve specific cases of task delegation or cooperation protocols, specialization processes (such as advanced practice nurses in France) or the acquisition of new prerogatives (such as midwives empowered to monitor pregnancies). They may also involve new training courses and new professions (such as extension agents in Ethiopia, medical assistants in the United States for certain chronic diseases such as diabetes);
- A more general vision in the sense of greater emphasis on **patient- and community-centred care**, with increased recognition of community workers and the civil society. The new profession of "health mediator" emerging in high-income countries can be compared here with the status of Community Health Worker. In this way, the findings and dynamics concerning CHWs (the importance of their training, but also of their integration into the health system, avoiding silo logics with CHWs specialized in a single disease, horizontalization, establishing statutes at national level with a dedicated domestic budget and regular remuneration, creating bridges between the status of CHW and other health professions, etc.) could be used in the case of health mediators.
- A more general vision in the sense of a **more holistic approach to patients**, calling for a new organization of care, and more collaborative work between caregivers (and the creation of a larger number of mid-level managers).
- a more general vision of health, in the sense of the need to **forge closer links with the climate, environment, animal health and life sciences professions**. The aim is to forge closer links with between communities working for better health and those trying to prevent/address the effects of global warming.

Innovation will not only be technological, but should also concern the way systems are organized in the years to come. Several initiatives are proposing **interesting changes in the way tomorrow's healthcare professionals are organized or trained**, all of which point in the direction of intermediate professions between several functions.

Finally, these developments should logically lead us to **rethink** continuous **training** and lifelong learning, so that healthcare personnel can adapt to changes in society and health throughout their careers.

General conclusion

The third Sustainable Development Goal (SDG3) is to "enable all people to enjoy good health and promote well-being for all at all ages". More specifically, UN member states commit to "ensuring universal health coverage, including protection against financial risks, and access to quality essential health services and to safe, effective, quality and affordable essential drugs and vaccines". As we have shown in this study, healthcare professionals are central to this goal. The stakes are immense: without the right people and infrastructure, it is not possible to provide high-quality, effective care that meets the health needs of the population.

The Covid 19 crisis raised awareness of the centrality of healthcare professionals, and of the fragility of our systems for meeting major needs in a context of vocational crisis. The healthcare sector seems to be in crisis all over the world: shortages, maldistribution or understaffing, exhaustion, anxiety,

Sub-Saharan Africa is particularly hard hit: 77% of the rural population has no access to healthcare due to a lack of health personnel. The imbalance between the needs of the population and the availability of qualified healthcare personnel is exacerbated by the "brain drain" phenomenon. In addition, sub-Saharan African countries are confronted with a massification of health problems, due to the double burden that affects them.

While it's important to have a global vision, in order to grasp the scale and evolution of the issues at stake, the responses to be provided must be adapted to each context and vary according to the problems of each region or country. We must therefore avoid "ready-made thinking" and standardized models, and insist on the need to adapt strategies to each context.

All countries are confronted with the same drivers of change: common threats, climate change, the multiplication of health and humanitarian crises, new technologies, the increase in non-communicable diseases, and so on. The current organization of our healthcare systems is not adapted to these new challenges.

In response to current social and technological trends, the healthcare professions are set to undergo major changes in the coming years:

- changes in the division of tasks: the challenge is to break out of the paradigm of specialization in healthcare professions and reverse the logic, by promoting a wide range of professions and skills. more extensive, much less specific, with a holistic approach to health, integrating the bio-medical, social and economic dimensions of each individual's health, with personalized care paths,
- evolutions in the skills mobilized: the challenge is to acquire broader, more varied skills, but also to open up to rapidly expanding competencies (digitalization of healthcare, one health, decarbonization of healthcare systems, team coordination, etc.) and gain in flexibility (with greater opportunities for bridging between different professions).
- changes in relations between healthcare professionals (greater collaboration and cooperation) and between healthcare professionals and patients (who will take on greater responsibility)
- changes in the way training is organized: while initial training will continue to play a central role, continuous training throughout a person's career should be given greater prominence, in order to bring the company's skills up to date. and adapt to changing needs,
- evolution in career management, with the possibility of changing positions, in a vertical logic (gaining skills or responsibility in the same type of position and moving up the career ladder in responsibility) or in a horizontal logic (change of sector, public or private, change of status, change of tasks, etc.).

Supporting and managing the evolution of healthcare professions is a complex process, for four reasons. The first difficulty is to act on all the links in the supply chain. chain (recruitment, training, employment, distribution of tasks, retention, territorial distribution, etc.).

career development, motivation, etc.), taking into account the links and interconnections between these different stages. The second challenge is to get all the players involved. The role of governments will be a decisive factor in this change, but changing the way healthcare professions are organized involves mobilizing numerous ministries: health, finance, research, higher education, labor, justice, etc., and at all levels of responsibility (local, regional, national, international). The third difficulty is linked to the importance of corporatism in the healthcare sector, which is generally conservative in the face of proposals for change. The dynamics of change are the fruit of sometimes contradictory forces: the recognition of new needs, the increasing scarcity of available funding, the primacy of biomedical logic, competition from other issues, the force of "custom" in the organization of work, the demands of trade unions, the injunctions of international organizations, corporatist reflexes, the expectations of patients or citizens, etc. The evolution of healthcare professions is therefore largely a matter of negotiation. The final, and perhaps most important, difficulty in bringing about change in the healthcare professions lies in the duration of the change processes: the transformations required in terms of training and organization of the healthcare professions to enable our healthcare systems to meet current and future challenges will require time and public policy efforts beyond 2030, considering that the training of a general practitioner who begins his or her studies in the year the study was carried out will not have been completed by 2030.

If there seems to be a growing awareness of the importance of what is at stake, this must now be translated into action, and we hope that the present study will contribute to this. Only a high-level policy can guarantee the financial commitment needed to break the vicious cycle of the current crisis.

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Appendices

Appendix 1: Glossary

Among the global health institutions working on the issue of healthcare professions, healthcare professionals and their national or international distribution, there are few French-speaking players, reports, articles or other sources in French, at the time of writing this report. Most stakeholders work and exchange in English, so many of the concepts, acronyms and abbreviations used in this field of global health are in ^{English}¹⁴⁹. To make this report easier to read for a French-speaking audience, we have translated most terms. Nevertheless, this glossary provides the reader with the original expression, to facilitate exchanges with English-speaking stakeholders and the reading of sources for the report - or any other institutional or scientific document on the subject.

¹⁴⁹The notion of *health workforce (HWF)*, for example, omnipresent in work on healthcare professions and healthcare professionals, is difficult to translate literally. The notion of "health workforce" is difficult to understand and does not express the same thing at all. We've chosen to translate it as "healthcare professionals" most of the time, even if this term doesn't include the notion of group and unity found in *health workforce*. For clarification, we sometimes use the expression "healthcare professionals in post", to distinguish between those who are trained and employed, and those who are in training, or those who are trained but unemployed or undergoing retraining.

Expression in English	French expression
Caring for those who care	Caring for caregivers
Competency-Based Education	Competency-based education
Continuing medical education and training	Continuing medical education
Continuing professional development	Continuing professional development
Dual practice	Dual practice (two professions)
Emergency preparedness and response	Emergency preparedness and response
Essential public health functions (EPHFs)	Essential public health functions (EPHF)
Fiscal space	Tax base
Global Code of Practice on the International Recruitment of Health Personnel	The WHO Global Code of Practice for the International Recruitment of Health Personnel
Global health workforce (GHW)	Healthcare personnel worldwide
Global health workforce alliance (GHWA)	Global Health Workforce Alliance
Global health workforce network (GHWN)	Global Health Workforce Network
Health extension workers - HEW	Health extension workers
Health-workforce demand	Demand for healthcare personnel (linked to country capacity)
Health-workforce needs-based shortage	Needs-based shortage of healthcare personnel
Health-workforce supply	Supply of healthcare personnel
M-health	Mobile health (via cell phones, tablets, etc.)
Mid-level health worker	Intermediate-level health workers
NHWA -National Health Workforce Accounts	National health personnel accounts
Public health workforce	Public health professionals
Recruitment and retention of health workers	Recruiting and retaining healthcare staff
Roadmap on the Public Health and Emergency Workforce	Roadmap for public health professionals and health emergencies
Skill atrophy	Atrophy / decline in skills
Skill-mix	Mix of skills needed
Scope of practice	Fields of practice
Técnicos de cirugía	Surgical technician
The WHO Academy	WHO Academy
Working for health programme (W4H)	Working for health" action plan

Appendix 2 - Detailed methodology

To answer our research questions and achieve our objectives, we used three methods typical of qualitative social science studies: documentary analysis (scientific literature, grey literature, newspaper articles and any other relevant document or medium such as videos - institutional or broadcast from scientific or institutional events -, websites, etc.); semi-structured interviews with key players; and observations at political or scientific events related to the study theme.

Literature review and analysis

Throughout the study, we conducted a review of the scientific and grey literature on the main theme of tomorrow's healthcare professions, as well as on each of the sub-themes^{addressed150} (global shortage and unequal distribution of healthcare professionals, professionalization and working conditions of CHWs, shortage of HHR in French-speaking Africa, education and training for tomorrow's healthcare, accreditation of training and recognition of diplomas, prospective analyses of the healthcare job market, attractiveness and retention in rural and remote areas, cooperation protocols and changes in fields of practice, governance and management of healthcare professions, migration of healthcare professionals, healthcare professionals and digital health, new healthcare professions of tomorrow, etc.) in French and English. We used three main databases: Google Scholar, Pubmed and Cairn.

We analyzed over 200 documents, including scientific articles, books and book chapters, press articles and institutional reports.

After identifying the main institutional and associative players in the field of HHR in global health, we monitored social networks (mainly Twitter and Linked In) to keep abreast of publications and events organized on the subject. We also carried out a press review on the shortage of healthcare professionals (mainly focused on the French case), including some fifty newspaper articles and audio or visual reports.

Most of the relevant documentary sources on tomorrow's healthcare professions come from the international HHR literature. Within this literature, certain resources are particularly valuable, and we feel it is important to highlight them:

- The report of the High-Level Commission on Health Employment and Economic Growth and the Global HRH Strategy to 2030 (7,11), published in 2016 and 2017, remain the reference texts for most scientific publications and grey literature on global health HRH and tomorrow's healthcare professions. The preliminary work of these two reports is also very useful (250-255,9).
- The WHO "*Human Resources for Health Observer Series*" includes 26 cross-cutting or thematic reports published since 2009, of great relevance to this study and useful on many key themes: retention in rural and remote areas (n°25 published in 2020), gender inequalities among health professionals (n°24 published in 2019), CHWs (n°19 published in 2020), labor market dynamics in the health sector in OECD countries (n°20, published in 2017) and in resource-limited countries (n°11 published in 2012), etc.
- The scientific journal "*Human Resources for Health*" (from the publisher *BioMed Central*) is of particular interest for this study, with its global health perspective, numerous articles presenting relevant case studies and recent research work that we feel will be of major importance in thinking about tomorrow's healthcare^{professions151}.
- The documents produced for the 5th Global Forum on Human Resources for Health, held from April 3 to 5,²⁰²³¹⁵²

¹⁵⁰ Given the number of sub-themes addressed in this study, we do not claim to be exhaustive on each one, but rather to provide the main references for a good understanding of the subject. Each specific sub-theme or case study has therefore been the subject of a literature review to identify the main publications and players.

¹⁵¹ A number of important publications have recently been released, such as the special collection entitled "*Global Strategy on Human Resources for Health: Workforce 2030 - A Five-Year Check-In*".

¹⁵² The three policy briefs that emerged from this forum were particularly valuable. The forum, entitled "*Protecting, safeguarding, and investing in the health and care workforce*", was an opportunity to take stock of the global strategy, five years after its launch. adoption, <https://www.who.int/teams/health-workforce/about/5thglobalforum-hrh/1>.

- Action plans from the WHO, ILO and OECD "Working for health" program (13,19)¹⁵³ - and videos from the "Global Health Workforce Network" Youtube channel.
- The book published by the *European Observatory on Health Systems and Policies* in 2023 entitled "*Skill-mix Innovation, Effectiveness and Implementation: Improving Primary and Chronic Care*"¹⁵⁴ (256).

Other sources were used on a more ad hoc basis, such as the ILO's sectoral publications on health, with regular updates on HHR, their prospects and working conditions during the COVID-19 epidemic; the publication in the *Lancet* of new global estimates on HHR available in the world between 1990 and 2019 (74)¹⁵⁵; or for part 2 on French-speaking sub-Saharan Africa the 2018 special issue of the journal *Santé Publique*, "Investing in human resources for health in French-speaking sub-Saharan Africa" (257). It should also be noted that a large number of works published before 2016 in scientific journals or grey literature on HRH are listed on the website: "HRH Global Resource Center"¹⁵⁶.

While there are many publications on HHR, particularly in English, there is relatively little specific scientific literature on the healthcare professions of tomorrow. The very notion of a "new healthcare profession" is difficult to translate into English, and the searches we carried out using different keywords yielded few relevant results (see Box 1).

¹⁵³ See in particular Appendix 3 of the 2022-2030 action plan (pp. 41-42), which provides key bibliographical references in global health and by region (19).

¹⁵⁴ This 400-page publication lists a large number of recent innovations in the organization of different healthcare professions and in the management of primary care *and* chronic diseases. It includes numerous international comparisons of national examples from different regions, as well as more global analyses of what works and what doesn't, in which contexts, and how difficult it is to implement. This is a major publication for rethinking and organizing tomorrow's healthcare professions.

¹⁵⁵ This important publication by the IHME (<https://www.healthdata.org/>), based on *Global Burden of Diseases* figures, provides new estimates of the global shortage of healthcare professionals, with precise figures for different regions of the world and different countries.

¹⁵⁶ This site is no longer updated, many links no longer work and many of the documents listed are no longer accessible, but this initiative remains useful for understanding the main themes and key players in global health HHR up to 2016. See the following link, accessed on 01/07/2022: <https://www.hrresourcecenter.org/index.html>

Box XX. "Healthcare profession": a polysemous term that is difficult to translate

In order to present the most comprehensive global health results possible, we have conducted our research on the healthcare professions of tomorrow in both French and English.

Research into "tomorrow's healthcare professions" yielded few results relevant to global health. The main results proposed highly futuristic visions of tomorrow's health, with little relevance to the current health challenges of most low- and middle-income countries (LMICs), and very little documentation. The other results proposed lists, often arbitrary, of the professions that would provide the most jobs "in the future".

Research into "new healthcare professions" has produced a number of relevant results, focusing either on recent or ongoing developments in certain professions, or on the emergence of new functions (e.g. nurse-coordinator within nursing homes), or more rarely on the appearance of new professions (e.g. healthcare mediator). We have included them in the results presented in this report.

The English translation of the term "métier" is tricky. In French, *métier* can refer to a *job* or an *occupation*. A healthcare profession can contain the idea of a possible career development over time, or on the contrary, be a kind of status that limits possible career prospects without further training (or professional retraining).

To reflect these different aspects, we have used the following terms in our research on health professions: "health profession", "health job", "health occupation".

For the notion of new occupations, we have used: "new health occupations", "new health professions", "new type/category of health worker", "new occupations" in health. All these expressions have yielded few recent results in terms of scientific or grey literature on health occupations. (The expression "new health occupations" has yielded only scientific publications from the 1970s and 1980s, for example.)

The term "emerging occupations in health" has yielded satisfactory results in terms of grey literature, mixing occupations for which demand is expected to be strongest in the coming years and new healthcare occupations.

This semantic explanation illustrates the complexity of the scientific research surrounding the notion of We are aware of the importance of "health profession" research on a global scale, and of the need to apply this research on a national scale in order to develop the results. The case of France will therefore often be used as an example in the report, in order to develop certain analyses.

Nevertheless, we should note the publication of an ILO report in 2019 entitled *The future of work in the health sector* (258) and more recently, in 2022, the report by the UK *All-Party Parliamentary Group on Global Health* entitled *Probable Futures and Radical Possibilities: an exploration of the future roles of health workers globally* (259).

Heal, which takes a holistic approach to the question of tomorrow's healthcare professions, from a perspective close to that developed in this study.

Interviews with specialists

We conducted a series of semi-structured interviews (26) lasting around an hour with members of governments or government agencies, members of international organizations (IOs), members of international non-governmental organizations (INGOs), healthcare professionals, researchers and consultants¹⁵⁷. All those interviewed were specialists in global health HHR, or involved in innovative projects to train or organize healthcare professionals to meet tomorrow's healthcare challenges. Considering the various aspects and numerous sub-themes of the subject and the broad definition of healthcare professions chosen for this study, we adapted our interview grid to the specialist fields of each interviewee. A summary table below illustrates the different themes addressed by each type of stakeholder.

We also conducted several group discussions (6 meetings between 5 and 15 participants) at different stages of the survey, in order to compare our interim results with the opinions of specialists. All participants in the study (35 including interviews and collective discussions) were anonymized and designated by a code (i+number) which will be used in the quotations used in the report¹⁵⁸.

The main aim of the interviews conducted throughout the course of the study was to shed light on aspects of the subject that were not covered in the scientific publications and grey literature. They enabled us to :

- Triangulate data during analysis, by cross-checking data from the literature review, interviews and observations.
- To correct the publication bias that encourages authors to highlight innovations in terms of training and organization of healthcare professions that have had a positive outcome. The semi-structured interviews gave institutional staff, researchers and members of NGOs or the private healthcare sector working on these issues the opportunity to share more easily their doubts, failures and obstacles that make innovations or developments linked to healthcare professionals difficult to implement or reproduce.
- To document pilot projects that were not, or were poorly, documented in the grey or scientific literature (either because they were set up by NGOs on a temporary and ad hoc basis, or were the result of local public policies that did not always give rise to publications). Some of our interviews brought to light interesting innovations that had not been documented elsewhere.
- To share data on projects or publications under development (such as the WHO Academy) which are rarely published during the initial implementation phase. The interviews therefore provided immediate information on projects under development or initiatives whose results have not yet been published.
- Lastly, the interviews provided an opportunity to use the so-called "snowball" technique (which consists in asking respondents at the end of the interview if they can think of anyone else who might be relevant to the subject of the study).

Following the first pilot interviews, it was decided that the interviews would be neither recorded nor fully transcribed. The absence of a recorder allowed respondents to speak more freely, and systematic note-taking was sufficient to retain the main points of the interview. The aim here was not to carry out a systematic thematic analysis, but to highlight trends, relevant avenues for development, innovations or obstacles to be taken into account in the training and organization of healthcare professionals over the next two decades.

Observations and participation in scientific and institutional events

We took part in several scientific and/or institutional events related to tomorrow's healthcare professions, throughout the duration of the study. We also watched a number of

¹⁵⁷ For breakdown, see Appendix 1.

¹⁵⁸ The code corresponding to each respondent was communicated to him or her before publication, so that he or she could reread and approve (or correct) his or her statements in direct quotations to avoid any misunderstandings.

number of video recordings of hybrid (face-to-face and remote) or remote events that we were unable to attend live. All events took place between April 2022 and April 2023. A full list of the events concerned is available in the Appendix.

FIGURE 17: TABLE OF INSTITUTIONAL AND SCIENTIFIC EVENTS USED IN THE STUDY

Event title	Organizing institution	Date	Location
World Health Worker Week 2022: Investing in competency based education	Global Health Workforce Network, WHO	20/04/2022	Visio
Health as a lever for action in the face of climate change	Santé Publique France, IANPHI, Ministry of Solidarity and Health	08/04/2022	Visio
Post-Ségur: How to make healthcare professions more attractive?	Eurogroup Consulting	31/03/2022	Visio
1st MSF-OCP Oncology Day	MSF	05/04/2022	Visio
Aging and solidarity: Cuba, Morocco, France.	GED, Condorcet Campus	21/04/2022	Paris, Condorcet Campus
Health and Territories Study Day	Lisa Carayon	18/05/2022	Paris 1 University
Blind spots in medical-social research	IRESP	16/09/2022	Visio
Migration of foreign doctors: how do they fit into the Quebec job market?	EHESS Migration and Health	21/03/2022	Condorcet Campus
Leaving to study, studying to leave: student mobility from, to and across Africa	LPED	01/07/2022	REAF Toulouse

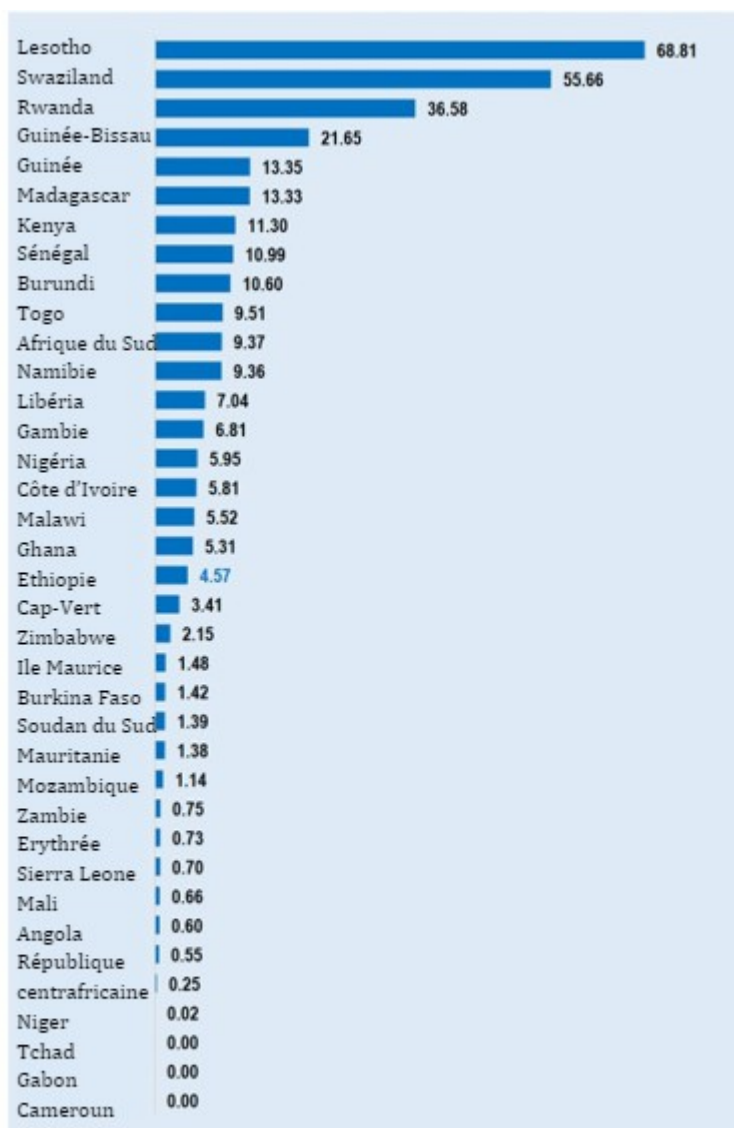
Appendix 3: Indicators used to measure the minimum density of healthcare professionals required by 2030

Indicateur	Classification
Soins prénataux	Santé maternelle et infantile
Traitement antirétroviral	Maladies infectieuses
Cataracte	Maladies non transmissibles
Diabète	Maladies non transmissibles
Vaccination DTP (diphtérie, tétanos, poliomyélite)	Maladies infectieuses
Planning familial	Santé maternelle et infantile
Hypertension	Maladies non transmissibles
Accès à l'eau potable	Maladies infectieuses
Hygiène	Maladies infectieuses
Accouchement assisté par un personnel qualifié	Santé maternelle et infantile
Tabac	Maladies non transmissibles
Tuberculose	Maladies infectieuses

Source : traduit de l'anglais depuis le rapport 2016 de l'OMS *Global strategy on human resources for health workforce 2030*

Here are the indicators used to estimate health needs. Each country had a score from 0 to 12, with one point for each indicator for which 80% of the population was covered. Ex: 1 point if over 80% of the country's population has access to cataract surgery. 1 point if more than 80% of the population does not smoke, etc.

Appendix 4 - Density of community health workers per 100,000 people in 2018 in countries in the WHO Africa region.



Source : traduction en français de la figure 8 du rapport The state of the health workforce in the WHO African region 2021

Acronyms used :

AECID: Spanish Agency for International Development Cooperation (*Agencia Española de Cooperación Internacional para el Desarrollo*)

AOC: West and Central Africa

CCM: *Country Coordinating Mechanism*

CSU: Universal health coverage

FCS: Fonds commun de santé

GF: Global Fund to Fight AIDS, Tuberculosis and Malaria

UNFPA: United Nations Population Fund

GAVI: *Global Alliance for Vaccines and Immunization*

LFA: *Local Fund Agent (Agent local du Fonds mondial)*

NFM: New funding model

OIG: Bureau de l'Inspecteur général (*Office of the Inspector General*)

WHO: World Health Organization **TFP:**

Technical and financial partner **HSS:** Health systems strengthening

RSSH: *Resilient & Sustainable Systems for Health*

SRPS: Systèmes Résistants et Pérennes pour la Santé

TB: Tuberculosis

TERG: *Technical Evaluation Reference Group*

TRP: *Technical Review Panel*

UNICEF: Fonds des Nations unies pour l'enfance (*United Nations Children's Fund*)

HIV: Human Immunodeficiency Virus

Background to the study

The Global Fund was originally created in an emergency context, with the aim of achieving rapid, effective results to contain the HIV/AIDS, tuberculosis and malaria epidemics. During its first decade of existence, the "health systems strengthening" (HSS) or "cross-cutting" component was present, albeit poorly defined and fluctuating over the years in its modalities. This aspect was not seen as a central strategic element, but more as a secondary effect of its main mandate, with funding that remained marginal and little used¹. From the time of the Global Fund's reform in 2014 and the adoption of its new funding model (NFM), HSS was to take on an increasingly strategic role. In 2015, the Global Fund defined seven main approaches to help countries establish "*Resilient & Sustainable Systems for Health (RSSH)*", following its own terminology (The Global Fund, 2015)². In 2016, the Global Fund formalized its future 2017-2022 strategy, listing the implementation of SRPS as one of its four strategic objectives, with the aim of improving results in the fight against the three diseases and more generally in the field of health, strengthening protection and financial equity, contributing to the goal of universal health coverage (UHC) and better preventing potential health crises³. Although it shares similarities with the WHO's normative framework and its six pillars⁴, the Global Fund proposes its own conceptual framework, with a more operational scope, and the addition of a 7th pillar focusing on strengthening community responses and systems.

The Global Fund estimates that it is currently devoting 27% of its investments to building resilient and sustainable health systems (HSS)⁵, and around \$1.1 billion in the West and Central Africa (WCA)⁶ region between 2014 and 2019⁷. The need for HSS is particularly great in this region, which faces major security, institutional, financial and human challenges.

As part of a partnership with Agence Française de Développement (AFD), the [Global Health 2030](#) think tank wanted to contribute to the debate on the evolution of the Global Fund and its positioning on the issue of HSS. It was therefore decided to work with a sociologist, Anne Bekelync, to conduct an in-depth study on this topic.

Study objectives

The study sought to analyze Global Fund support for health systems strengthening, in West and Central Africa, particularly since 2014, when the Global Fund's new financing model was introduced. It was initiated to complement studies/evaluations by the Technical Review Panel (TRP), the Technical Evaluation Reference Committee (TERG) and the Office of the Inspector General (OIG)⁸ published on the subject.

It was structured around 3 lines of research:

Representations of HSS from the perspective of players in the Global Fund "ecosystem"

- How do players in the Global Fund ecosystem define HSR (scope, prioritization of axes, theoretical foundations, etc.), and what are the differences and points in common with those of other international organizations?
- How has the Global Fund's HSS approach been appropriated by players in the Secretariat, beneficiary countries and other international organizations?

Global Fund HSS expenditures: investments, activities and indicators

- What exactly do the expenses labeled "RSS" relate to in terms of concrete activities?
- How are RSS investments decided?

Institutional systems for implementing HSR

- What are the obstacles and opportunities of HSR in terms of operational and organizational constraints, particularly **at the level of beneficiary countries?**

The study was intended to serve as a basis for the *think tank's* recommendations on the overall development of the Global Fund, on the positioning of the various French players, on the articulation between multilateral and bilateral programs, and on the links between the Global Fund and other programs (bilateral and multilateral) aimed at strengthening healthcare systems.

Methodology

This study was initiated in February 2020 until September 2020, lasting 4 months (full-time equivalent). It was conducted from Côte d'Ivoire (the researcher's field of residence) and for the most part, remotely, due to constraints linked to the Covid-19 epidemic. **This research focused on 3 interrelated levels of analysis:** 1) global health actors (international), 2) West and Central African countries (regional) and 3) insights through analysis of certain national issues (the concept note development process in Côte d'Ivoire, the common health fund in Niger, the "stand-alone" HSS grant in Benin) (national).

It was based on a mixed methodology, with :

- A review of the scientific and grey literature (Global Fund documentation, databases, country-level documentation)
- A qualitative field survey
- Semi-structured interviews (46 in total) (see table)

	International	Ivory Coast	Other countries	Total
Global Fund / CCM	10	1		11
Other multilateral IOs	5	2	1	8
French healthcare players worldwide	10	2	1	13
Civil society	2	2		4
Friends of FM	1			1
Consultants	4	1		5
National public players		3	1	4
Total	32	11	3	46

*Interviews conducted as part of the HSS and Global Fund study, 2020.

- Participant observation of a workshop in Cotonou on HSS and the Global Fund organized by Aidsplan and the *African Constituency Bureau* (February 5-7, 2020) and meetings on the development of the NFM3 concept note in Côte d'Ivoire (n= 6).

Key findings

- Operationalizing the strategic objective of HSS remains a **major challenge** for the Global Fund, an organization with a culture and "DNA" of its own. deeply **vertical**
- In contrast to disease subsidies, there are many **areas of uncertainty**. the implementation of HSR. If countries with strong leadership to exploit these opportunities, countries with weaker governance - particularly in West and Central Africa - are more hampered in their strategies.
- Criticism of the Global Fund generally focuses on the **time lag** between the **rhetoric and** stated **ambitions** of HSR and its actual scope and impact. of its actions, which are more akin to support than reinforcement.

Main results

The Global Fund's approach to HSS is necessarily limited in scope, due to its "pandemic DNA" and external constraints.

The integration of HSS as a genuine strategic objective within the Global Fund has taken place in an institution which, for fifteen years, has been focused on the fight against disease, and whose history, operation, internal organization, skills and professional culture are characterized by a vertical approach and the quest for rapid, demonstrable effectiveness. In many respects, the HSS approach as advocated by WHO, i.e. meeting the requirements of sustainability, transversality and leadership left to countries, is at odds with the fundamental characteristics of the Global Fund in terms of temporality, accountability, required skills, internal organization, positioning vis-à-vis beneficiary countries, collaboration with other international organizations, and ultimately, culture. The Global Fund is also largely constrained by its financial resources, which, although substantial (\$4.7 billion/year for the next three years), are not sufficient to meet the estimated needs of the fight against the three diseases (around \$28 billion/year ^{estimated9}) and, a fortiori, to strengthen healthcare systems (around \$100 ^{billion/year10}). These resources are also not assured in a timeframe of more than three years. The low uptake of ^{HSS11} activities, coupled with the risk of funding dilution and the difficulty of demonstrating impact over a three-year cycle, is a major constraint on the Secretariat team, which has to justify its effectiveness on a regular basis in order to maintain donor contributions, continue its contribution to the fight against the three diseases and ensure the organization's survival.

The professional culture of Global Fund staff - characterized by a vertical approach and the technical specialization of individuals - has directly influenced the production of knowledge and the way in which the Secretariat has defined its approach to HSS. The global health players interviewed (both inside and outside the Global Fund) generally characterize its approach in two ways: 1) by its disease-centric scope and purpose, its aim being to remove the bottlenecks that stand in the way of scaling up the fight against the three pandemics in countries, and not to strengthen health systems for their own sake (HSS being more of a positive collateral effect); 2) by its functionalist character, i.e. it's

defined by the various pillars or technical areas. There is therefore no systemic, detailed definition of the Global Fund's HSS approach.

However, four levels of conflicting definitions have been identified, highlighting a lack of uniform understanding of its HSS approach by the players in its ecosystem. Firstly, in the internal documents produced by the Secretariat, the strategic documents adopt a broader scope of HSS, where the ultimate objective is to contribute to achieving universal health coverage (UHC), while the more operational documents are more focused on the three diseases. Secondly, within the Secretariat itself, the sensitivities of the players differ according to their professional skills, cultural background and individual characteristics, depending on whether they have a financial or public health profile, or are experts in monitoring and evaluation, for example. Thirdly, contradictory injunctions can be transmitted to countries between the country teams - which directly guide national players in the elaboration of concept notes - and which promote more a disease-centered HSS approach, and the TRP (*Technical Review Panel*) which is in charge of evaluating them, and which adopts a broader conception. Finally, at the level of national players in beneficiary countries, individuals integrated into the Global Fund mechanism (the "disease players") generally adopt a disease-centric approach, while players who have not been so integrated (Ministries of Health, Finance, Central Directorates, etc.) adopt a broader concept of HSS.

So, while the absence of a systematic definition of HSR gives the various players a degree of autonomy, this lack of common understanding can also generate operational tensions and give the Secretariat's country teams a strong power of normative orientation in beneficiary countries.

Obstacles to implementation of Strategic Objective 2 ("SRPS")

Many players (both inside and outside the Global Fund) recognize the significant efforts made in recent years to move towards greater integration between the three diseases, whether in the context of health services delivered to patients, the reporting system, supply chains or supervision. However, these efforts remain limited from the point of view of an HSS approach as advocated by the WHO, which would be both sustainable and systemic. We have identified three main obstacles to its implementation

Organizational, technical and related to external players



Figure 1: Obstacles to SRPS implementation at the Global Fund

→ **The slow evolution of the organizational set-up: between institutional cumbersomeness and political will?**

While the strategy represented a major step forward in formalizing HSS as a strategic objective, the Secretariat remains hamstrung by its institutional framework, i.e. by its mandate, which remains limited to the three diseases. For example, while the Global Fund in principle authorizes a community health worker to deliver services beyond the three diseases, if it does not finance inputs, nor compel him or her to report data on other diseases, action remains limited in practice. What's more, changes in the Global Fund's professional skills and internal organization are evolving, albeit slowly. Although an HSSR support team has been set up within the Strategy, Investment and Impact Division to support country teams, help operationalize the strategy and develop partnerships with partners, it remains isolated and outnumbered (13 permanent ^{staff¹²}) by the rest of the Secretariat (around 700 people). Although HSS skills are being developed within the Secretariat's other departments, the professional culture of its staff and the Global Fund's internal organization remain predominantly a culture of specialists in the three pandemics, with a compartmentalized approach. In contrast to disease grants, HSS can be perceived by operational staff as a vague object, difficult to grasp, with no precise frame of reference or objectives, and which could jeopardize the results of grants (risk of dilution without impact, absorption difficulties) and therefore of the organization.

→ □ **technical system that is still limited and poorly adapted to the specific features of RSS**

The technical framework currently in place remains insufficient to effectively initiate, or even compel, the various players in the chain to initiate quality programs. Two types of consequences have been observed: on the one hand, it slows down or even paralyzes HSR initiatives; on the other, it generates a scattering and fragmentation of HSR activities.

The inadequacy of the accountability framework and performance indicators, or the lack of evaluation of portfolio managers on this theme, are generally pointed out as the decisive brake on action, being the main incentive for an organization that operates according to the principle of results-based financing. Also, HSS guidelines at country level are often out of step with those for diseases: the absence of a desired or expected amount for HSS in allocation letters is a major obstacle to the establishment of substantial, high-quality grants, and technical guidelines specific to HSS are sometimes non-existent or unfamiliar to national players (e.g. HSS funding landscape, co-financing modalities).

In terms of fragmentation and dispersal, the complexity and standardization of the modular framework, and the Secretariat's preference for allocating HSS interventions in a way that is integrated with disease subsidies rather than "*stand-alone*"¹³, tend to diminish the coherence of the proposed HSS strategies.

This "incomplete" technical set-up - compared to the technical set-up for diseases - can be justified by Global Fund players as a necessity, in order to create room for manoeuvre for countries and foster the principle of ownership - which appears even more fundamental in the context of HSS. As a result, countries with strong *leadership* and technical skills, such as Rwanda, Ethiopia and Benin, have been able to initiate separate HSS grants, taking advantage of the leeway left to them by the Global Fund. However, these areas of uncertainty need to be seen in a broader context, with the Global Fund becoming highly prescriptive in its strategic orientations and demanding in its compliance with complex procedures. In the context of most West and Central African countries, where national leadership in the health sector is not very strong, these uncertainties tend to paralyze - rather than encourage - action, for fear of not being able to benefit from funding.

The internal changes required to fully operationalize the SRPS strategic axis are taking place more or less rapidly, depending on the dimensions concerned (regulatory framework, internal organization, skills, technical and management systems, etc.), which is a major challenge for the company.

characteristic of international organizations. While the integration of the HSS strategic objective into the 2017-2022 strategy represented a major step forward, providing the formal framework necessary for action, other dimensions are evolving more slowly, if at all, and today represent major obstacles: maintaining the mandate centered on the three diseases, the Global Fund's professional skills and culture, which remain essentially vertical, and the still limited adoption of managerial tools and adequate technical and financial procedures conducive to the implementation of HSS programs. While some of the people we spoke to stressed the real technical difficulties involved in developing an appropriate and effective HSS mechanism, and the fact that this is a relatively new issue for the Global Fund, others questioned the political will within the Secretariat to make this issue a priority.

→ **Dependence on external players: national players, technical and financial partners (TFPs) and technical assistance**

The HSS theme reveals and exacerbates the various challenges and difficulties that Fonda Mondiale encounters in countries in terms of collaboration and positioning with national players and technical and financial partners (TFPs).

Even more so than in the fight against pandemics, the issue of HSS needs to respond to needs defined by **countries**, and to be appropriated by public health authorities, so that responses are fair and sustainable, following the logic of respect for national sovereignty, in a balanced relationship of co-partnership. To promote HSS investment, a number of conditions must be met at country level, grouped into three main categories: the country's **political leadership**, with political commitment at the highest level, a strategic vision of HSS, and the ability to negotiate and coordinate with the various technical and financial partners; the appropriate **technical skills** to implement the strategic vision, and the ability to "fit into the matrix" of the Global Fund, in order to exploit its possibilities; and the choice of an appropriate **implementing institution**, i.e. one with a high hierarchical position and financial and programmatic capacities.

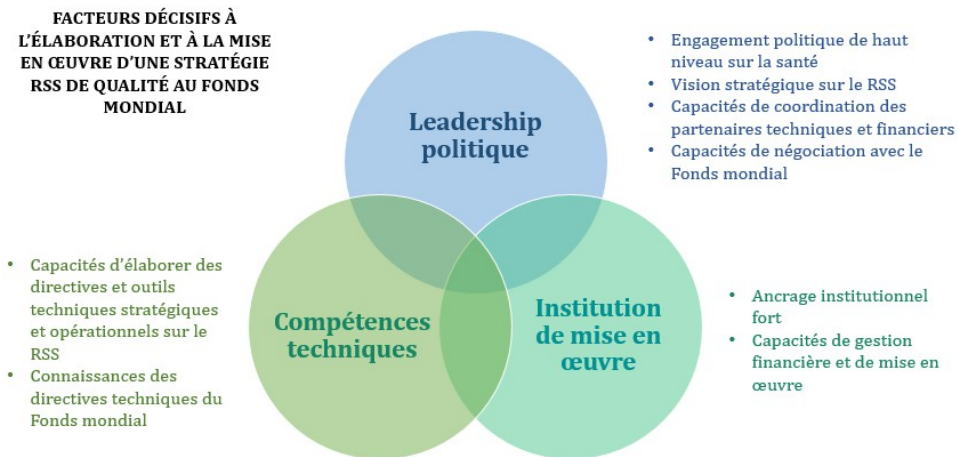


Figure 2: Decisive factors in the development and implementation of a quality HSS strategy at the Global Fund

In return, the Global Fund also has a responsibility to support and optimize national efforts. In many countries, however, national authorities - Ministries of Health, Finance, the Prime Minister's Office, central departments or non-disease programs - have had little or no involvement in the Global Fund ecosystem, either within participatory governance bodies (CCMs) or as recipients of grants. Although the CCMs were originally set up to enable collaborative governance - with a large role for civil society - in practice, they have often..,

The Ministries of Health have been "bypassed", mainly because of fears of misappropriation of funds and lack of efficiency. The frequent use of management units is indicative of the 135

persistent difficulty in using Ministries of Health, for reasons of efficiency, adaptation and trust. HSS puts national health authorities back at the heart of the process. It highlights the unequal relationships that have developed in some countries between *insiders* (pandemic actors) and *outsiders* (non-pandemic health authorities) in the Global Fund system. For example, when a central department of the Ministry of Health is a sub-recipient of a National Disease Program within the framework of HSS activities, or when the Ministry of Health does not occupy a leadership position within CCMs, this can erode their legitimacy and coordination capacities, as well as blocking the implementation of certain activities. Non-pandemic health actors also find themselves at a disadvantage when it comes to mastering the Global Fund's complex technical framework, which contains its own procedures, language and specific requirements.

The Global Fund needs to interact more with the other **technical and financial partners (TFPs)** involved in HSS (who, again, are not always "familiar" with the Global Fund's operations), as the Global Fund can be considered a "small player" in the field of HSS, and its staff do not see their organization as a leader, particularly in pillars such as human resources, governance, financing or the supply chain. TFP coordination is a key factor in the success of HSS strategies. At present, however, coordination with other TFPs is focused more on sharing information and avoiding duplication, than on achieving genuine "synergy" between actions. WHO Africa tends to be criticized for its lack of leadership in this field, and there is a shared difficulty in coordinating TFPs, which today is largely person-dependent at country level, but also closely linked to country leadership and their ability to coordinate their partners. The Global Fund is not perceived as a driving force in TFP coordination, given that its primary focus is on compliance with its complex procedures, financial risk management and accountability requirements. Its lack of local roots also hinders the development of partnerships and collaboration with other TFPs. The example of the Fonds Commun de Santé (FCS) in Niger highlights the Global Fund's difficulty in adapting to common procedures to promote national coordination of PTFs. The Fonds Commun de Santé (FCS) is a multi-donor fund, bringing together the Agence Française de Développement (AFD), the World Bank, the Spanish Cooperation Agency (AECID), UNICEF, the GAVI Alliance and UNFPA, whose aim is to implement Niger's Health Development Plan by channelling partners' resources and stimulating the alignment, harmonization and predictability of actions, under the aegis of the Ministry of Health. In the context of the TB/HSSR grant (2019), important discussions took place between the Global Fund country team and the national authorities, the FSC team and the partners, in order to find an agreement for the Global Fund to integrate the pooled fund. In the end, an incompatibility emerged between the financial management safeguards requested by the Global Fund and the procedures and competencies of the FSC (the Global Fund required, for example, that its local agent (the LFA) monitor the FSC's financial management, or that programmatic monitoring be far more detailed than the FSC had planned).

The complexity of its procedures is thus a major obstacle to collaboration with national authorities and other partners. Although the Board of Directors has affirmed the need for simplification, some of our interlocutors have noted the relative contradiction between Board members who, on the one hand, wish for greater simplification (particularly for HSR) and, on the other hand, always want more indicators to report.

Finally, the difficulty of mobilizing quality **technical assistance** on HSS at the Global Fund, according to several of the people interviewed, makes it impossible to fill these gaps.

A gap between rhetoric and practice

There is a gap between what the Global Fund says about its commitment to HSS and the concrete scope of its actions, in terms of cross-functionality and sustainability.

The Global Fund has adopted an extensive calculation method for its HSS interventions, which its critics may describe as "undemanding", enabling it to post a figure of 27% of its overall budget that would have been allocated to it for the 2014-2019 cycles. In its external communications¹⁴, the distinction between direct and contributory (indirect) investments is not always emphasized or made clear, even though the latter account for two-thirds of funding. These contributory (indirect) investments are calculated retrospectively, following a methodology that selects interventions and financial inputs that may or may not correspond to HSS, "the main selection criterion being the relevance of these interventions for health systems"¹⁵. These criteria are therefore both relative (based on "relevance"), without taking into account the criterion of sustainability, and with an extensive definition of transversality, insofar as an expense is considered "transversal" from the moment it affects more than one disease. In the final analysis, it appears that most of the expenditure labelled as "SRPS" by the Global Fund is more support than reinforcement - as already shown by the TRP, which estimates that support expenditure accounts for 75% of SRPS funding¹⁶.

For some (both inside and outside the Global Fund), the integration of HSS as a strategic objective of the Fund did not mark a real break with the past, but rather a formalization that was necessary for political reasons. They point out that the proportion of funding allocated to HSS has remained relatively stable since the Fund's creation at around 30% of the overall budget - although calculation methods have varied, making a strict comparison difficult - or that the activities actually financed have remained the same, such as supply chains or human resources, as a matter of "course" for program implementation. Others point out that the "leverage effect" often evoked by the Global Fund - i.e., the way in which disease-focused HSS actions lead to a more global strengthening of health systems - is little questioned or well defined.

For the more critical interlocutors, the Global Fund's commitment to HSS is above all initiated for symbolic, instrumental, even what they describe as "demagogic" purposes, with HSS holding a strong rhetorical value, making it possible to silence criticism of the negative impact of vertical health initiatives on health systems, while garnering support (notably financial) from donors sympathetic to the cause of HSS. The Global Fund (and its Secretariat) would thus be in a satisfying in-between position, without the necessary political will to move beyond it. Finally, some critics point to France's stance in favor of more HSS on the Global Fund Board, without any concrete proposals on the priorities to be defended.

Focus on two pillars

Community health systems: the Global Fund's untapped strength?

The "7th pillar", community systems strengthening, represents the specificity of the Global Fund's HSS approach. This specificity is rooted in the very history of the Global Fund, which was created as a public-private partnership and was one of the first donors to include civil society in its decision-making bodies, from Geneva to the CCMs of beneficiary countries (imposing a minimum 40% representation of civil society), reinforcing this attention to the community component by introducing the *dual* track rule (in 2011) and systematically involving a non-governmental actor (generally from civil society) as a co-lead recipient. Unlike the WHO, which focuses on strengthening state capacities, the Global Fund grants

This means paying particular attention to communities as key players in supporting HSS interventions. In the context of West and Central Africa, where health systems are profoundly mixed - public, community and private - and where community health is generally neither recognized nor institutionalized by national public authorities with their hospital-centric culture, the Global Fund can be perceived as an "ally", particularly by national community players. However, there is some confusion as to the meaning of the term "community-based", with the actors interviewed from the world of HIV naturally seeing it in terms of human rights and vulnerable populations, while those involved in formal community health or malaria see it more in terms of primary health care (community health workers, etc.), generating operational tensions, particularly when writing the concept note.

According to the Global Fund's calculation methods, community systems strengthening accounts for only 2% of funding earmarked for HSS. However, this method of calculation undervalues actual expenditure, broken down into other pillars such as human resources, health information systems and the supply chain. This is indicative of the scattered nature of community activities financed by the Global Fund - between HSS sub-pillars, or between HSS and disease grants/modules - which tends to undermine its potential impact. The modular framework - which is highly fragmented - is an obstacle to developing comprehensive, coherent community strategies. Analysis of this pillar thus highlights the risks of fragmentation in Global Fund HSS strategies.

The thorny issue of health human resources

The issue of human resources for health is one of the greatest challenges facing health systems, particularly in the countries of West and Central Africa, where the number of human resources for health is three times lower than in the rest of Africa. The Global Fund's positioning on this pillar is indicative of its more general difficulties in getting involved in HSS. The Global Fund is relatively uneasy (as are other international organizations) about the issue of human resources for health, and all the difficulties associated with HSS are exacerbated: the scale of funding required to solve the problems, the difficulty of programming actions over a long period of time and relying on strong leadership from beneficiary states, the need to coordinate with other donors who are better positioned in terms of skills and country roots in this area, and the fear of taking the place of states by financing salaries. Thus, the Global Fund agents interviewed generally cite supply chains and health information systems as their organization's priority or legitimate areas of action, and rarely human resources, despite the fact that they account for 47% of expenditure allocated to HSS. And yet, while human resources represent the Fund's largest HSS budget item, they are in reality short-term operating expenses, such as bonuses, or what some describe as "disguised salaries"; and very little in the way of structuring and systemic expenditure (initial or qualifying training, curriculum development, etc.), which further illustrates the discrepancies between HSS rhetoric and concrete action.

Conclusion and recommendations

Given the Global Fund's deeply vertical "DNA", **its HSS approach necessarily remains limited in scope**, being essentially focused on the ultimate impact of HSS on the three pandemics. HSS focused on the fight against the three diseases is conceived as a gateway to improving health systems as a whole, although this is not always the case. The concept of "leverage" has yet to be fully developed.

There is no common understanding of its approach, particularly among non-pandemic health actors in beneficiary countries, who tend to conceive of HSS in a broad way, which ultimately generates operational tensions.

The significant gap between the rhetoric surrounding HSS - the Global Fund claims that 27% of its funding is allocated to it - and its concrete practices, which are more a matter of supporting and implementing disease subsidies, is fuelling criticism and polarizing the debate in the world of global health between advocates and detractors of vertical health initiatives. This polarization of the debate prevents us from valuing and supporting the significant efforts made by the Global Fund in recent years, particularly in terms of integrating services across the three diseases.

Recommendations to clarify the Global Fund's HSS approach

- **Think concretely about** how to make the "**leverage effect**" effective so that the current short-term "pandemic RSS" could become a broader RSS in the medium term and long-term
- **Communicate more effectively** with health stakeholders in beneficiary countries outside the pandemic arena on the objective and real scope of the Global Fund's HSS approach, and on how to achieve it.
that can be financed or not (e.g. for co-infections, community health worker service packages, etc.).
- Adjust HSS rhetoric and objectives to be more realistic and pragmatic, so that they are better aligned with **capabilities**.
the Global Fund's current organizational structure.

Although significant efforts have been made since its formalization as strategic objective no. 2 in the 2017-2022 Strategy, **operationalizing HSS remains a colossal challenge**, requiring a major overhaul of the Global Fund (mandate, skills and culture, internal organization, temporality of funding cycles) that the organization and its donors are not yet ready to carry out. The technical tools required for its implementation leave many areas unclear. In theory, these areas should be left open, so as to give **countries a degree of autonomy**, and leave it up to national authorities to direct, coordinate and even implement these strategies according to their own guidelines.

However, HSS takes place in a context where 1) the Global Fund is usually prescriptive, with complex and specific procedures, which tends to destabilize national players; and 2) state governance - particularly in West and Central Africa - is often fragile. The conditions required for high-quality SSR programs - political leadership, technical skills and the choice of an appropriate implementation structure - are rarely in place. Only a few exceptions succeed in "entering the matrix" of the Global Fund, appropriating its rules and procedures to exploit the opportunities offered. The way the Global Fund operates, where financial risk management and the need to be accountable to donors tend to take precedence over respect for national sovereignty and collaboration with other international organizations, remains a major constraint to developing HSS strategies that are coordinated by national authorities, and in partnership with other technical and financial partners.

Recommendations to promote and encourage the operationalization of HSS via the Global Fund

- Identify the technical areas where the Global Fund needs to leave some **wiggle room** in order to foster country ownership, and the areas where it needs to be more proactive.
more directive and improve its tools to encourage action

(For example, regarding strategic orientations, performance indicators and accountability framework, RSS amount defined in allocation letters, modular framework, etc.).

- Better integrate and support **national public authorities** so that they (re)assume a leadership role, particularly in difficult intervention contexts.
(For example, with the choice of a principal recipient reporting to the Ministry of Health (vs. international NGOs and UN agencies) with upstream support to build their capacities; the effective lifting of constraints linked to additional safeguards; the simplification of grant application forms for HSS; the easing and integration of national procedures for HSS; the clear and simplified communication of technical rules and guidelines, etc.).
- Encourage operational and concrete collaboration between **international organizations**, and rethink the SSR co-partnership framework.

Research avenues

This study - necessarily limited by its duration - raised other avenues for reflection that would be interesting to explore:

- Collaboration with other international HSS organizations (from international to national)
- The challenges of Global Fund HSS technical assistance
- Specific case studies on certain pillars (e.g. human resources for health, supply chains or community systems) in individual countries, in order to better describe and analyze the Global Fund's positioning and concrete avenues for collaboration with other partners.
- The Global Fund's relations with the research community

APPENDIX 1: Presentation of Global Health 2030

Global Health 2030 is an independent think tank that since 2016 has brought together personalities who have long been involved in global health issues. Its reflections are part of the Sustainable Development Goals.

OUR COMMITMENT

France is one of the world's largest providers of international healthcare funding but its influence in international bodies is limited.

and health partnership platforms remains limited. We are convinced that France can only be heard and listened to in the international arena of global health when its players succeed in conveying a strong, coherent message, structured around clear, stable objectives and underpinned by values that are attached to the history of healthcare in France. *Our aim is to **formulate recommendations** on France's global health policy, and to **mobilize all players** to ensure that health issues become a strategic focus of France's international aid.*

OUR PREVIOUS NOTES

- 1 - [White paper on global health](#)
- 2 - [Manifesto: Our vision of global health](#)
- 3 - [Health is a priority for the Sahel](#)
- 4 - [Boosting the fight against tuberculosis](#)
- 5 - [The importance of the European Health Commission](#)
- 6 - [Contribution to the preparation of the next Global Fund Replenishment Conference](#)
- 7 - [A European health commissioner is essential for the health of Europeans](#)
- 8 - [The French institutional framework for global health: reflections and proposals](#)
- 9 - [UNAIDS: what challenges, what future?](#)
- 10 - [Representations of French influence in global health in Geneva-based international organizations](#)
- 11 - [Structuring the academic field of global health in France](#)
- 12 - [Support WHO in its role of coordinating the global management of the Covid-19 epidemic.](#)
- 13 - [Inclusion and participation of society as a whole in the response to Covid-19. Food for thought](#)
- 14 - [Anticipating the evaluation of the international response to the first wave of Covid-19: issues, expectations and points of attention](#)
- 15 - [Should we save the OMS soldier?](#)
- 16 - [Rethinking Global Fund involvement in health systems strengthening](#)

OUR MEMBERS

Global Health 2030 brings together personalities who have been involved in health since the beginning of the 20th century. Françoise Barré-Sinoussi, Paul Benkimoun, Michel Cot, Sana de Courcelles, François Dabis, Annabel Desgrées du Lou, Jean-François Delfraissy, Éric Fleutelot, Frédéric Goyet, Mathieu Lamiaux, Michel Kazatchkine, Marie-Paule Kieny, Lelio Marmora, Benoît Miribel, Olivier Nay, Louis Pizarro, Anna-Laura Ross, Benoît Vallet. Stéphanie Tchiombiano is the coordinator.

Global health is a **fundamental human right**. It is also a **global common good**. **Universal access to healthcare** and the construction of sustainable healthcare systems are central to **human development, the economy, the fight against poverty and security**. They therefore make a decisive contribution to

at **inclusive development** from **m** and peace.

Health issues are complex and call for **long-term strategic visions** to meet the challenges posed by globalization, intensifying human exchanges, demographic transitions or climate change.



¹ Russo, Camille (2019) "The prism of 'health system strengthening' for a better cooperation and coordination between AFD, the Global Fund and Expertise France: analysis and perspectives", Master de Santé Publique, EHESP

² The seven areas of work are as follows: (1) Strengthening community actions and systems, (2) Providing support for reproductive, maternal, newborn, child and adolescent health programs, and integrated service delivery platforms, (3) Strengthening country and global procurement and supply management systems, (4) Foster essential investments in human resources for health, (5) Strengthen health data systems and countries' capacity to analyze and exploit these data, (6) Strengthen and harmonize national health strategies and national strategic plans to combat each disease, and (7) Strengthen financial management and oversight, The Global Fund. (2015). Supporting Countries to Build Resilient and Sustainable Systems for Health.

https://www.theglobalfund.org/media/1306/publication_countriesbuildresilientsustainablehealth_report_en.pdf?u=63724454782000000

³ GF/B35/DP04: The Global Fund Strategy 2017-2022: Investing to End Epidemics.

https://www.theglobalfund.org/media/2531/core_globalfundstrategy2017-2022_strategy_en.pdf. Other objectives are to maximize impact on the three pandemics, promote human rights and gender equality, and mobilize greater financial resources.

⁴ World Health Organization (2007). Everybody's business - Strengthening health systems for better health outcomes. WHO Framework for Action. Geneva

⁵ Global Fund, Annual Report 2020, page 50.

https://www.theglobalfund.org/media/10162/corporate_2020resultsreport_report_fr.pdf?u=637375661976700000

⁶ Like the Global Fund's IGO report, we are considering 23 countries in this zone: Benin, Burkina Faso, Cameroon, Cape Verde, Central African Republic, Chad, Congo, DRC, Côte d'Ivoire, Equatorial Guinea, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Mauritania, Niger, Sao Tome and Principe, Senegal, Sierra Leone, Chad, Togo.

⁷ Grant Implementation in Western and Central Africa, the Global Fund:

<https://www.theglobalfund.org/en/oig/updates/2019-05-31-grant-implementation-in-western-and-central-africa/>

⁸ These are "Report on RSSH investments in the 2017-2019 funding cycle" (TRP, 2018); "Thematic Review on Resilient and Sustainable Systems for Health (RSSH)" (TERG, 2019); and "Managing investments for resilient and sustainable systems for health (Audit Report)" (OIG, 2019).

⁹ This is an annual average calculated on the basis of estimated needs of \$83 billion for the three-year cycle 2020-2022, published in the investment case for the Global Fund's 6th replenishment 2019 ("Accelerating the movement").

¹⁰ These are estimates based on the study by Stenberg et al (2017) published in *Global Public Health* on the investments needed in 67 low- and middle-income countries to achieve the health-related targets of the Sustainable Development Goals (SDGs). These costs represent, initially (these scalable), \$134 billion per year, of which 75% should be invested in healthcare systems with human resources and infrastructure as the main expenses (Stenberg 2017). Thus, the investments needed in healthcare systems would currently represent around \$100 billion a year for these 67 countries. (Stenberg et al, 2017, "Financing transformative health systems towards achievement of the health Sustainable Development Goals: a model for projected resource needs in 67 low-income and middle-income countries", *Global Public Health*, Vol5, n°5, E875- E887, DOI:[https://doi.org/10.1016/S2214-109X\(17\)30263-2](https://doi.org/10.1016/S2214-109X(17)30263-2))

¹¹ According to the OIG (2019) report, SRPS activities integrated into disease grants show absorption rates of 67%, compared with 75% for disease-only interventions. The average absorption rate for stand-alone SRPS grants is 56%.

¹² At the time of the survey

¹³ Stand-alone grants represent only 2% of the Global Fund's total investments and 7% of its SRPS investments.

¹⁴ See <https://www.theglobalfund.org/en/resilient-sustainable-systems-for-health/>

¹⁵ See "Tracking the Global Fund's Investments in Resilient and Sustainable Systems for Health" (Global Fund, July 2019).

¹⁶ Including program and grant management costs; without including them, the proportion is 66%, in "Report on RSSH investments in the 2017-2019 funding cycle" (TRP, 2019).