Universal health coverage
UNIVERSAL HEALTH COVERAGE

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Delivering on the promise of universal health coverage

A new initiative to focus on improving healthcare delivery systems

Universal health coverage—the notion that people should be able to access healthcare services regardless of their ability to pay, and do so with financial protection—is a major focus for G7 policy makers and others around the globe. It is an important component of the sustainable development goals, leading many countries to increase their use of scarce public resources to ensure their citizens are covered. The motivation, of course, is compelling. People should not develop or die from preventable or treatable conditions because they are poor, and treatment should not lead to financial bankruptcy.

Simply prioritising universal health coverage, however, will not be enough to achieve its main goals. Even if nations are able to identify the necessary resources, fundamental questions about achieving effective universal coverage remain unanswered. Without these answers, simply pushing for universal coverage may waste precious resources without achieving the important goals of improved health and wellbeing of citizens in a way that is efficient for people and countries.

Although the primary focus is coverage (financing healthcare services, ensuring adequate staff, etc), success depends on the underlying healthcare delivery system. It also requires clarity about the trade-offs. Governments have limited resources but many important priorities. What will not be funded because governments focus on universal coverage? Even in Massachusetts, one of the wealthier US states, investments in achieving universal health coverage for its population of seven million people coincided with substantial reductions in spending on public health, education, and infrastructure.1

If policy makers decide that universal health coverage is worth supporting, they will need better information on how to implement it. How should investments be structured? Should it all be public funding or should governments fund private insurance and private providers? How should governments ensure that there is a legal and regulatory framework to manage the legal rights that such programmes might confer? And, of course, how is it possible to ensure that the coverage that is created is worth having?

As Teerawattananon and colleagues have pointed out, setting priorities early helps nations make decisions about how best to achieve these goals, especially when faced with scarce resources.2

Herein lies one of the largest challenges of universal health coverage. The safety, quality, and efficiency of most healthcare delivery systems (across high, middle, and low income countries) are far from the best they could be. In many countries, especially those with scarce resources, the quality of the underlying healthcare delivery system is so poor that it is unclear whether increasing access to services will do more good or more harm. Conservative estimates put unsafe medical care as one of the top 10 causes of human harm, with adverse medical events affecting 8-15% of hospital inpatients in high income countries and even more in low and middle income countries.3 In some places, patients who visit physicians are more likely to get the wrong diagnosis and harmful treatment than they are to get the right ones.4 5

While we strongly support the idea of universal health coverage, we do not know how to ensure we get the most for our investments. We do know, however, that given the millions of deaths that occur from poor quality care, one way to improve the value of that investment is to improve the quality of the underlying delivery system.

To this end, the Harvard Global Health Institute and The BMJ have produced a collection of articles on effective universal coverage. We agree with the underlying goals—that everyone around the world deserves access to healthcare services when they are ill and encounters with the healthcare system should help people better without bankrupting them. But there is a vast gap between those two goals and our ability to deliver them. That vast gap is mainly due to deficiencies in knowledge about both optimal approaches to financing and effective models for healthcare delivery. So little is known about how to do this well—partly because each nation is unique with a different set of needs and a different path to achieving true, effective universal health coverage. We also know little about how best to deliver what is known to work. But that doesn’t mean that there aren’t generalisable principles, and our hope is that The BMJ can be a vehicle for furthering our knowledge about how to do universal health coverage well.

We are at a critical juncture in global health. The world has increasingly come to realise that we are interdependent and that a poor performing health system in one place is a threat to us all. We must pull together to help nations develop their own healthcare systems and achieve effective universal coverage in ways that are consonant with their history, culture, and values. We can all learn from each other, and learn we must, because good intentions are a start but they are insufficient.

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Rethinking assumptions about delivery of healthcare: implications for universal health coverage

Simply providing more resources for universal coverage is not enough to improve health, argue Jishnu Das and colleagues. We also need to ensure good quality of care.

We are at an inflection point in global health. People are living longer, healthier lives than ever before, and we are rightly celebrating disease focused programmes that have greatly reduced or eradicated diseases such as smallpox and river blindness. Better diagnosis and treatment of HIV/AIDS, malaria, and other diseases have saved countless lives. Yet, as populations age and the burden of morbidity grows more complex, the limitations of programmes focused on single diseases have become increasingly evident.

Policy makers have shifted towards a broader “systems” view of universal health coverage (UHC)—one that seeks to provide all people with access to essential health services without financial hardship—as the defining approach to improve the health of the world’s poorest people. As one of the key focuses of the sustainable development goals, UHC has become a rallying principle for all countries. Indeed, the new director general of the World Health Organization has made UHC his top priority for the agency.

UHC can achieve its primary objective of creating better health, but to do so, patients must have access to services that are of high quality. This idea of “effective UHC” is not new. It has long been recognised that translating healthcare into health outcomes requires that services meet some basic standard of quality.

However, without systematic data on quality, the working assumption has been that adequately trained doctors and nurses with access to infrastructure (such as well equipped facilities and medicines) will be sufficient to guarantee adequate quality. Emerging data suggest that this understanding may be incorrect. For example, even when resources are in place in countries as far afield as Bangladesh and Uganda, health systems are unable to ensure that doctors show up to work, with absence rates ranging from 40% to 60%. And when they do, the services they provide are far below any acceptable standard.

We focus on one aspect of quality—effectiveness, or the degree to which patients receive timely and accurate diagnoses and evidence based treatments for their conditions. Other domains of quality, such as patient safety and patient centredness (table 1), are equally important. However, the effective provision of necessary services is foundational to the performance of health systems; a system that cannot accurately diagnose or manage patients will not deliver the improved health outcomes implicit in the UHC agenda.

Assessing the evidence and identifying the problems

Our synthesis relies on recent studies of the quality of clinical practice and its determinants in low and middle income countries (LMICs). In the absence of administrative data sources or information from patient charts (which are rare or of doubtful quality in many of these countries), these studies have used surveys of healthcare providers (medical vignettes and standardised patients) to measure two related but separate things: what providers know about managing common medical conditions and how they actually practise in clinical settings (see appendix on bmj.com). Three key issues emerge from this evidence and are discussed below.

Without quality, access may be irrelevant

Health policy efforts often invest substantially in programmes that have the primary objective of increasing the use of healthcare services, such as the number of treatment episodes or health visits per patient. But emerging data suggest that this focus on

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Essential elements of quality healthcare (adapted from Scott and Jha)</th>
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<tbody>
<tr>
<td>Domain</td>
<td>Subcategorisation</td>
</tr>
<tr>
<td>Safety</td>
<td>Adverse events—eg, due to medical devices or medicines, including substandard and falsified medicines</td>
</tr>
<tr>
<td></td>
<td>Healthcare acquired conditions</td>
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<td></td>
<td>Cases of hospital acquired pneumonia among inpatients</td>
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<tr>
<td>Effectiveness</td>
<td>Timely and accurate diagnosis</td>
</tr>
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<td></td>
<td>Evidence based treatment, including appropriate follow-up and management</td>
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<tr>
<td></td>
<td>Cases of hospital acquired pneumonia among inpatients</td>
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<tr>
<td>Patient centredness</td>
<td>Patient experience</td>
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<td></td>
<td>Patients reporting outcomes</td>
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getting people in the door may not lead to improved health.

We often begin with the assumption that a key feature of many health systems in LMICs is the lack of access to healthcare services. We measure access by counting the number and proximity of formal healthcare providers who work in official clinics. In reality, in many countries, people may have access to multiple healthcare providers with varying qualifications and connections to the formal healthcare sector. The average village in rural Madhya Pradesh—one of the poorest states in India—has 11 healthcare providers within 3 km of the village, most of whom have no formal training. However, informal providers are often not counted when assessing key measures of access such as the ratio of clinicians to patients.

In other countries, non-physician clinicians are an integral and sizeable part of the state machinery but are often excluded when assessing in human resources. Studies that focus only on formal physicians per location, most of whom are not formally trained. The survey from Vietnam is based on a sample from Madhya Pradesh, includes 199 providers with patients over a day. The sample from Birbhum, is 256 providers in rural Madhya Pradesh (India), doctors in public primary health facilities (similar to primary health clinics) and 171 district hospitals.

Poor quality is often assumed to be due to the large number of informal (ie, untrained) providers who see too many patients and do not have the time to carefully evaluate or manage them may be incorrect. Clinical observation studies show that most primary care providers see too few patients, rather than too many (fig 1). The average healthcare provider working in a public clinic in rural India, who provides services that are free at the point of use, sees 5.7 patients a day, spending only three minutes with each. In Tanzania, Senegal, and rural Madhya Pradesh (India), doctors in public primary health clinics spend a mere 30 to 40 minutes a day seeing patients.

**Qualifications do not equal clinical knowledge**

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providers. However, even fully trained providers with adequate access to infrastructure often fail to deliver high quality care. This weak link between qualifications and quality reflects two related but conceptually separate issues. Firstly, the quality of medical training varies considerably in many countries. Tests of medical knowledge among physicians and non-physician clinicians in India, Vietnam, Nigeria, Eastern Europe, and several countries in sub-Saharan Africa consistently show large variations in within-country knowledge, with sizeable numbers of untrained, non-physician clinicians who are more knowledgeable than their fully trained counterparts.

Figure 2 documents adherence to a medically necessary checklist of questions about medical history and examinations for multiple conditions presented to doctors through medical vignettes in five sub-Saharan African countries. Although fully trained doctors are more likely than nurses to know what questions to ask and examinations to perform, there is considerable overlap between the distributions (fig 2). Within every country, the top 20-50% of nurses are more knowledgeable than the poorest performing 25% of doctors. Even between formally trained versus informally trained doctors, doctors with more formal education may only modestly outperform their informally educated peers (fig 3).

The translation of qualifications to knowledge varies across countries. The mean Kenyan nurse is more knowledgeable than 21% of doctors in Kenya, 78% of doctors in Madagascar, 32% in Nigeria, 25% in Tanzania, and 63% in Uganda (fig 2). There are also wide differences across states in India: informal providers in high performing states like Tamil Nadu are more knowledgeable than fully trained doctors in low performing states like Bihar. The link between qualifications (training) and medical knowledge is surprisingly weak. It is therefore wrong to assume that populations with access to a fully trained doctor in Madagascar enjoy better care than populations with access to a fully trained nurse in Kenya.

Clinical knowledge often fails to translate into clinical practice

Medical knowledge is only loosely tied to actual clinical practice. Providing high quality clinical care requires both knowledge and effort, and when the average clinical interaction lasts 90 seconds, as it does in Delhi’s public sector or Vietnam’s district hospitals, medical knowledge often does not translate into high quality clinical interactions.

A recent systematic review of consultation time, our best measure of effort, across 68 countries and 28 million consultations found that the average consultation “varied from 48 seconds in Bangladesh to 22.5 minutes in Sweden.” In most countries, consultation times averaged less than 10 minutes, and in 15 countries less than 5 minutes. Short consultation times were more prevalent in low income countries, even in contexts where doctors were seeing just a few patients a day.

Short consultation times imply that even when doctors know what to do, they often fail to do it. There is a persistent, often sizeable, gap between what providers say they will do when faced with a hypothetical patient and what they actually do when they see such a patient (fig 4). Emerging evidence finds large “know-do” gaps in countries as diverse as Rwanda, Tanzania, India, China, and Vietnam. This know-do gap can be so large that the providers without any formal medical training can provide higher quality care than fully trained doctors.

The idea that the medical profession “has special knowledge … and will self-regulate” has already been questioned. We are learning that doctors are humans who operate within complex systems. Because they respond to incentives, the same doctors seem to provide more effort (and deliver higher quality care) in private clinics than in public ones, even when structural resources are held equal. In a Beijing hospital, when standardised patients presenting with viral pharyngitis told doctors they would purchase medicines from an external pharmacist (rather than the hospital pharmacy from which the prescriber receives a salary bonus), antibiotic prescriptions fell from 77% to 11%. This 66 percentage point difference suggests doctors knew that prescribing antibiotics was unhelpful but were swayed by financial incentives.

Potential solutions

We have focused on just one component of quality: effectiveness. Understanding whether similar patterns arise for safety and patient-centred care is critical, although there is little reason to believe it would not.

The data come from only around a dozen countries, but they include India and China, where a large proportion of the world’s poorest people live. Although standardised
patients cannot fully capture all clinical scenarios (for practical and ethical reasons), the data that have emerged in recent years suggest the same patterns: big quality problems, a weak link between qualifications and knowledge, and a large gap between knowledge and practice. The evidence suggests that countries need to incorporate quality into their UHC plans at an early stage.

Whether efforts to achieve UHC will translate into better health outcomes depends on how we execute these efforts, and this in turn will determine whether we are able to move from a simple access oriented definition of UHC to truly effective UHC. Emerging data challenge models of care that assume that qualified providers in well resourced clinics guarantee quality. New approaches are needed to ensure that broader investments in healthcare actually lead to better health outcomes, especially for poorer people.

New approaches need to tackle systems that produce medical professionals who are poorly trained, undermotivated, and often assigned to clinics with no peers or mentors and insufficient patient volume to hone skills. These providers consequently leave many patients, particularly those with few resources, receiving care that is unhelpful and often harmful.

This will not be an easy process. But clear examples are emerging where these efforts are bearing fruit: mid-level providers who provide high quality care, whether they are anaesthesia assistants in rural Nepalese hospitals or nurses managing HIV care in large parts of Africa. Initiatives to tackle the availability of doctors in rural areas can focus on non-physician providers and the availability of doctors in rural areas can reduce unnecessary tests and drug diagnoses, drug sales, and laboratory tests that assume that qualified providers for poorer people.

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Similarly, countries are realising that placing doctors in rural areas may mean that they see only few patients a day. An alternative is to bring patients from rural that they see only few patients a day. An alternative is to bring patients from rural areas to urban centres with better facilities, as has been tried with considerable success using ambulance systems in India and medical buses in Brazil.

Unfortunately, there are other systemic design problems where our knowledge base remains low. For instance, evidence shows that when diagnosis and treatment are “bundled” so that healthcare providers can earn higher incomes by ordering tests or prescribing drugs, their tendency to do so increases. Breaking the link between diagnoses, drug sales, and laboratory tests can reduce unnecessary tests and drug usage. How to do so in an efficient manner, however, remains an open question.

**Conclusion**

Task shifting and new approaches to delivery are just two examples of the kind of innovation needed to achieve effective UHC. Reaching the goals of UHC requires not just more money, but better money. We need additional research and policy work that questions baseline assumptions and normative, or prescriptive, frameworks. We must understand the world as it is, not as we wish it to be. Healthcare providers may make errors, but they often make the same errors again and again, and therefore make “predictable” mistakes; these mistakes are indicative of a broken system. If this predictability is recognised and modelled in policies and strategies to improve global health, we can make important advances. Such recognition has the potential to transform how healthcare is delivered in low income contexts, ultimately improving the lives of billions.

Additional material available on bmj.com: Methods for collecting data on effectiveness of healthcare

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Climate change threatens the achievement of effective universal healthcare

Minimising the health harms of climate change and optimising universal health coverage will only be achieved through an integrated agenda and aligned solutions, say Renee Salas and Ashish Jha

The sustainable development goals (SDGs) target many different aspects of human well-being; they are interconnected and some might seem to create tension (such as economic growth in SDG 8 and ecological stewardship in SDGs 12 and 15). These interconnections are particularly clear for universal health coverage (UHC) (SDG 3.8), which will be substantially harder to achieve without climate action (SDG 13). Climate change threatens the very tenets of UHC; the regions of the world most vulnerable to climate change face the greatest difficulties in achieving it.

United Nations countries agreed to achieve UHC by 2030, which requires optimal access to essential, high quality services without sacrificing affordability. This extends beyond merely providing “coverage” and has three main components: a broad set of healthcare services must be accessible, affordable, and of sufficiently high quality to improve health outcomes. To track progress on SDG 3.8, the World Health Organization (WHO) and World Bank created a service coverage index to measure the extent of coverage of “essential health services.” Although coverage has increased globally, only 22 countries currently have a “high coverage” index.

Climate change is already threatening many health achievements of the past 50 years and will continue to do so at an accelerated pace unless we take action. WHO estimates that climate change will cause an additional 250 000 deaths a year by 2030, when taking into account just five exposure pathways (undernutrition, malaria, diarrheal disease, dengue, and heat).

Our understanding of how climate change affects health is still growing, but we know it will have multiple direct and indirect negative effects, including greater heat related morbidity, undernutrition, increasing water and foodborne illnesses, and mental health problems. The largest driver for greenhouse gases globally is the combustion of fossil fuels, and the resultant air pollution leads to an additional seven million deaths annually. Although the health effects of climate change are wide reaching, they can still be mitigated if we take action now.

Beyond direct health effects, climate change will make it more difficult to achieve UHC. The global community has the urgent opportunity to tackle two pressing challenges of our time: UHC and climate change. In this piece, we discuss the pathways through which climate change will create barriers for achieving UHC and how policy makers should mitigate these harms.

How climate change threatens UHC

Achieving effective UHC even in the absence of climate change is difficult. Climate change is a “meta problem,” creating strong headwinds that will make ensuring access to affordable, high quality care more challenging (fig 1). Climate change threatens UHC through five key pathways.

Changes in disease burdens (type and distribution)
The effects of climate change will interact with other forces that affect health (box 1). Non-communicable diseases accounted for 71% of global deaths in 2016, and three of the top causes (cardiovascular disease, chronic respiratory disease, and diabetes) are exacerbated by climate change, as is mental health. Climate change is also increasing the frequency and geographic spread of infectious diseases.

These disease burdens related to climate change pose added obstacles to UHC by increasing overall use and costs of healthcare. As UHC programmes seek to define the essential services that they will cover and to build financial models for their costs, these growing and novel burdens will make appropriate coverage more challenging. In addition, tools used by policy makers for prioritisation in coverage decisions will need to be updated to reflect shifts in disease burdens from climate change.

Population displacement and migration

The number of displaced people is predicted to be 143 million by 2050 in just three regions (Latin America, sub-Saharan Africa, and South Asia), in part because of climate change. Displacement might be driven by property loss, resource shortages, and conflicts. These consequences of climate change occur on the backdrop of broader political and societal issues, such as immigration policies and conflict, showing the complexities of the problem.

Ensuring that a largely stationary population can access a broad set of high quality services is hard enough; delivering UHC to a migratory population is substantially more challenging. Chad, for example, is experiencing increased migration secondary to drought with concerns for strain on public health services and health complications. Displaced populations have distinct health related needs, as they may have different rates of conditions, face mental health problems, and bring novel diseases. The influx of people alone might pose a challenge to
local healthcare systems—particularly in locations with no or low coverage—as they struggle to manage the increased patient volume and provide culturally sensitive care.

Rising poverty

The World Bank estimates that climate change will push 100 million more people into poverty by 2030 due to factors like property loss, increased health burdens, and decreased crop yields. Smaller populations are particularly susceptible to the threats posed by climate change, creating a cycle in which climate change exacerbates existing social and political issues by both creating poverty and trapping people within it.

Worsening poverty will contribute to higher burdens of disease, placing more stress on healthcare systems, and will put greater strains on government budgets for countries seeking to provide affordable, accessible care.

Disruption of healthcare infrastructure and care delivery

Extreme weather events related to climate change, like more intense hurricanes and floods, can cause structural damage or power outages at healthcare facilities (box 2). Even undamaged facilities can be affected by supply chain disruptions—due to factory disruption, increased demand, or transportation disruptions—and subsequent resource shortages.

Infrastructure damage limits a facility’s ability to deliver essential, high quality services. People might be unable to access care due to transportation difficulties, caused by road damage or the unavailability of emergency medical services. Systems might face barriers to maintaining public health and preventive strategies, such as the surveillance of emerging threats. These many obstacles are likely to place additional cost burdens on health systems, which will trickle down to the individual or insurance provider, further exacerbating affordability concerns.

Health workforce disruptions and impairments

There is already a shortage and maldistribution of well trained healthcare workers around the world. This is likely to be exacerbated by climate change, as the workforce is also affected by the forces driving migration. Quality of care is poor in many settings, with high rates of misdiagnosis and inappropriate treatments, which is probably due to inadequate training. As outlined in box 3, the workforce might be further impaired through cognitive effects of climate change and knowledge deficits, causing substantial problems in areas that already lack high quality training.

The healthcare workforce is one of the most important factors in UHC—both the availability of providers and the quality of care they provide. Shortages caused by geographic redistribution of

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Box 1: Effects of climate change on disease burden

**Non-communicable diseases**
- A temperature rise of 1°C is linked to a 3.4% rise in cardiovascular mortality, a 3.6% rise in respiratory mortality, and a 1.4% rise in cerebrovascular mortality.
- High temperatures are linked to a 6% increase in hospital admissions for coronary artery disease; cardiovascular events are also associated with exposure to air pollution—such as byproducts from the burning of fossil fuels (for example, fine particulate matter (PM2.5)) and ozone—which is amplified by temperature changes.
- Higher temperatures, increased intensity of wildfires, more severe and longer pollen seasons, and ground level air pollution like ozone and PM2.5 increase the burden of respiratory disease.
- Early data found that diabetes incidence increases by 0.314 per 1000 people for every 1°C rise in temperature, although more research is needed.
- Extreme weather, forced displacement, and violence can precipitate mental health concerns; extreme heat can exacerbate existing conditions.
- Chronic kidney disease of unknown origin has been linked to increasing heat stress in many regions, especially in agricultural communities.

**Infectious diseases**
- Vectorial capacity for the transmission of malaria has increased by over 20% in higher elevations in Africa since 1950. WHO predicts major future rises in mortality due to climate change related increases in malaria in central and eastern regions of sub-Saharan Africa.
- Since the 1950s, vectorial capacity for the transmission of dengue has increased by 7.8-9.6%.
- Warmer ambient temperatures have been associated with foodborne illnesses, like salmonella.
- A 1°C rise in temperature may lead to a 0.8-2.1% increase in hand, foot, and mouth disease.

**Occupational injuries**
- At higher temperatures, risk of work related injuries and illnesses increases among both indoor and outdoor workers.
- Outdoor workers in particular face increased risk of heat related illness as heatwaves become more frequent and last longer.
providers might hinder access to care, whereas inadequate training might lead to misdiagnosis, ineffective disease surveillance, and, ultimately, harm to patients.

**Vulnerable countries**
The countries that are most vulnerable to climate change are often those that face the greatest barriers to achieving UHC (fig 2). This is not surprising—both are related to the country’s economic strength and availability of resources. Because of the unique challenges they face, these regions have enormous opportunity to take a more integrated approach to their agendas. This would not be easy; given the financial restraints many of these countries already face related to healthcare, they might see tackling climate change as impossible. Implementing and optimising UHC, however, is a key strategy to minimise the health burdens of climate change and will probably be financially beneficial in the long run. Some countries might benefit more than others, but all can make immense gains from taking an integrated systems approach.

**Integrated solutions**
Countries have already taken important steps towards tackling climate change through the Paris Agreement, which was called “the strongest health agreement of this century” by WHO and outlines the benefits of climate mitigation for health and development. Global leaders can and must incorporate climate related threats into their considerations related to UHC (box 4).

**Improved understanding and integrated agendas**
New research to facilitate data driven solutions would be helpful, but we already have sufficient understanding to integrate the UHC and climate action agendas. These two communities need open dialogue with each other—with cross sectorial representation—and to push jointly for bold and innovative solutions.

**Box 3: Effects of climate change on the health workforce**

**Climate sensitive health and travel concerns**
Healthcare workers might provide lower quality of care if they have impaired cognitive function due to climate change (extreme heat, nutritional deficiencies, and infectious diseases). Heat is of particular concern where air conditioning is permanently or frequently unavailable or water for cooling is scarce. Healthcare workers might also have difficulty reporting to work during extreme weather situations, such as when flooding disrupts roadways.

**Climate change and health knowledge deficits**
Climate change alters existing disease burdens through various routes. Although a growing proportion of the healthcare workforce recognises that climate change negatively affects health, there are gaps in understanding around the details. Only 19% of disease control workers in China understood that poor people were at greater risk of climate change related health problems. In addition, only one-third had a good understanding of how climate change affects the transmission of infectious diseases.
Climate change mitigation

A rapid transition to renewable energy, which is both feasible and cost effective, would have direct health benefits now and would minimise health burdens in the future. But we need political will to take the urgent and bold steps necessary. Mitigation must also specifically occur in the health sector, which contributes to a disproportionate amount of carbon emissions. Health professionals can play an important role in advocating for policies that will incentivise this transition.

Adaptation to climate change

UHC is itself a fundamental adaptation intervention as it mitigates the negative health burdens of climate change. Meanwhile, we need investment in research to understand the health risks of climate change in local populations. There then needs to be political and fiscal support to translate this research into interventions and infrastructure that protect the most vulnerable. Another essential component of achieving UHC is the development of a dynamic health workforce that can respond to the changing needs of a region. Healthcare workers will be on the front lines of disaster response and disease surveillance efforts, so appropriate education on local climate health is critical to improve their adaptive capacity.

Health system climate resiliency

As climate change exacerbates existing threats and exposes new vulnerabilities, health systems must introduce forward thinking, data driven resiliency measures that are based on the unprecedented challenges of the future. This mandates global assessments of climate hazards and health system vulnerabilities, which can then be tailored to unique local environments. The results of these assessments can then be implemented into strategic capital investment priorities and appropriate health workforce management. Meanwhile, creative workforce models and integration of technology will further bolster health system capacities.

Conclusions

We are at an important point in time where action—or inaction—on the intersecting issues of climate change and UHC will drive the health of nations for decades to come. Estimates show that we have about a decade to decrease greenhouse gas emissions to avoid the most catastrophic health outcomes. Thus, the opportunities to transform health are enormous, and the time to act is now. As global decision makers aim to improve the health and quality of life for all people, they must not overlook the effects that climate change will have on disease burden and healthcare infrastructure. Only through bold, innovative, and cross disciplinary action can we tackle these unprecedented complex challenges and ensure a healthier world for future generations.

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Fig 2 | A: Global map of climate change vulnerability. This map uses climate change vulnerability data from the Notre Dame Global Adaptation Initiative (ND-GAIN) Country Index, which is based on indicators of adaptive capacity, sensitivity, and exposure and includes health, food, ecosystems, habitat, water, and infrastructure. Countries are categorised by quintile. B: Global map of universal health coverage. This map uses the universal health coverage index of essential service coverage data from the World Health Organization, which is based on indicators for reproductive, maternal/newborn/child health, infectious diseases, non-communicable diseases, service capacity, and access. Countries are categorised by quintile.

UNIVERSAL HEALTH COVERAGE
Box 4: Sample solutions that tackle both the universal health coverage (SDG 3.8) and climate action (SDG 13)

Improved understanding and integrated agendas
- Understand how individuals use healthcare for climate sensitive conditions and determine how different UHC models will affect this
- Gather experts across sectors (as in the One Health approach) to develop an agenda for tackling these issues together
- Develop joint metrics tracking both SDGs (3 and 13)

Novel financial frameworks
- Use carbon pricing that includes climate driven health and healthcare system costs
- Finance UHC from the elimination of fossil fuel subsidies and carbon pricing

Climate change mitigation
- Frame transition to renewable energy around the anticipated health and health equity benefits
- Ensure that transition to renewable energy is urgent and extensive in healthcare facilities, fuelled by advocacy from healthcare professionals and political leaders
- Broad divestment from fossil fuel companies to numerous sectors, especially healthcare

Adaptation to climate change
- Data driven approach to identifying those most vulnerable to heat exposure in a city, how they access care, and how the public health infrastructure can best protect them through adaptation interventions
- Translate data into effective surveillance systems and efficient sharing of emerging health concerns across borders
- Train medical professionals in skills that transcend current specialty boundaries, such as disaster preparedness training for hospitalists, and knowledge of emerging climate sensitive threats, such as new geographic distributions of infectious diseases

Health system resilience
- Map out climate hazards, such as flooding and other extreme weather implications, for local regions using different future climate models (eg, moderate to severe)
- Redesign facilities (eg, protection from flooding), relocate generators (eg, roof placement), and engage with the local health community (eg, coordination between local hospitals)
- Create incentives for strategic geographic placement of the health workforce and use health technologies like predictive staffing models and teledicine

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Achieving universal health coverage for mental disorders

Vikram Patel and Shekhar Saxena discuss strategies for integrating mental disorders, and other chronic conditions, into primary healthcare to achieve universal health coverage

Mental disorders are the leading contributor to the global burden of years lived with disability. The burden and cost of untreated mental disorders is immense for individuals, families, communities, and ultimately the world. A key strategy to tackling this burden is universal coverage of cost effective interventions for mental disorders, one target of the sustainable development goals. We analyse key questions related to this goal: why have countries failed to achieve universal health coverage for mental disorders? How can mental health interventions be integrated in primary healthcare, the foundational platform of delivery of universal health coverage? What are the lessons for integrating other chronic conditions into primary healthcare?

Why have countries failed to achieve universal mental health coverage?

In the context of mental healthcare, all countries are “developing” to some extent. Even in high income countries, the coverage gaps for common conditions like mood and anxiety disorders often exceed 50%; in low income countries, the gap exceeds 90%. Quality gaps (a measure of the effectiveness of the coverage) are even larger. Across all income categories, countries invest tiny fractions of their healthcare budgets on mental health, disproportionately less than the burden of mental disorders. This results in an inadequate number of mental health professionals per capita, a massive shortage of community based mental healthcare, and the persistence of badly run large mental hospitals.

These barriers to supply are compounded by barriers to demand, related to stigma and the discrepancies between biomedical framing of mental health problems and the conceptualisation of emotional distress in the community. Barriers to demand are one of the reasons for the large gaps in coverage observed in well resourced contexts, where universal supply of mental healthcare interventions has been largely attained—such as in the UK with its diverse mental healthcare programmes including community based mental healthcare teams and the Improving Access to Psychological Therapies programme. Further, national averages hide enormous inequities within countries, both geographic and societal—indigenous, minority, rural, and socially and economically disadvantaged communities have much poorer access to quality care. A particularly egregious example is people with severe mental disorders experiencing a loss of up to half their life expectancy relative to the general population, being more likely to experience homelessness and marginalisation, and being denied the basic rights to freedom and dignity through incarceration in hospitals or prisons.

Since the Alma Ata declaration in 1978, the means of improving access to mental healthcare has been to integrate it with primary healthcare. But after four decades of trying, we know that achieving such integration at scale will require nothing short of a wholesale re-engineering of the healthcare system. At the heart of the challenge is the architecture of primary healthcare in most countries, which is simply not fit for the integration of mental disorders (or any chronic condition).

Historically, primary healthcare was for acute or episodic medical events—from cuts to colds, extending to childbirth and the management of acute infections such as malaria and diarrhoea. Anything more complex (involving long term care or requiring a person centred approach to care, beyond a reductionist biomedical diagnosis) was either ignored or passed to secondary care. Attempts to integrate mental health have failed because they have not tackled these fundamental barriers; instead, they have tried to replicate secondary care in primary care—for example, by posting psychiatrists in primary healthcare centres, a strategy that is neither scalable nor necessary.

How can mental healthcare be integrated into primary care?

A key element of the field of global mental health is the design and evaluation of innovative strategies for integrating cost effective pharmacological and psychosocial interventions in primary healthcare. The evidence from this work, from a range of contexts including high income countries, is showing the way to integration.

A theme across this evidence is the placement of non-specialised providers (including peers, community health workers, and nurses) in primary healthcare and community settings to perform diverse roles such as coordinating collaborative care; educating and mobilising the community to increase demand for care; supporting families and patients to tackle proximal social determinants of mental health; and delivering empirically supported psychological and social interventions.

The growing recognition that binary models of diagnosis of mental disorders do not capture the dimensional distribution of symptoms, distress, and disability of mental health problems in the population has important implications for treatment planning. A “one size fits all” approach does not work. Instead, we need a staged approach whereby interventions...
are delivered based on both symptom severity and the effect of these symptoms on distress and disability. This aligns with the notion that most care targeting relatively mild, early, or transient stages of mental distress can be delivered through self-care and by non-specialist providers with appropriate skills. This facilitates quicker recovery for those people while simultaneously identifying those who might need more intensive interventions for referral to specialist providers. This approach, which reduces the emphasis on biomedical diagnoses, is also more likely to be acceptable to the wider population and to be less stigmatising.

The exponential growth of digital health innovations—spanning guided self-care, training and supervision of frontline workers, remote consultations by specialist providers, and remote monitoring of mental health—offers a transformative opportunity to bypass historical structural barriers to enabling task sharing and collaborative care. Several examples of innovative programmes and projects can be found in the Mental Health Innovation Network (www.mhinnovation.net) and the Lancet Commission on Global Mental Health and Sustainable Development.

We have identified five key elements needed to integrate mental health in primary care, which we refer to as the “5C approach” (box 1). Although these elements were derived from innovations seeking to attain universal coverage of mental healthcare, they can be applied to the full range of chronic conditions.

Three key points need to be emphasised. First, integration must cover the full range of mental disorders, in particular ensuring that people with severely disabling conditions—such as schizophrenia, alcohol and drug dependence, and dementia—are not left behind as they are less likely to seek care, less likely to use digital technology, and more likely to experience discrimination, isolation, and premature mortality. Second, coverage must be equity sensitive, recognising that subgroups in the population that experience higher levels of deprivation or exclusion, such as poor people, refugees or ethnic, religious, or sexual minorities, bear a disproportionate burden of mental disorders. Third, integration must emphasise quality of care for both the mental disorder (for example, to abolish coercive, harmful, and abusive practices) and co-existing physical health conditions, which are major contributors to premature mortality.

What are the lessons for integrating chronic conditions?

Mental healthcare has led the development of care strategies for health conditions characterised by a chronic, episodic, or relapsing course. At the heart of these innovations is the transition of delivery of long term care from institutions to the community, with the goal of decreasing disabilities, optimising quality of life, slowing disease progression, and minimising the risk of relapse. Interventions have focused on “recovery” by going beyond the specific symptoms of the disorder to tackle impairments in daily life and experiences prioritised by the patient—the hallmark of person centred care.

Mental health programmes have championed the integration of pharmacological with psychological and social interventions, referred to as the biopsychosocial approach to care: the engagement of family members (where culturally appropriate and agreed with the patient) to support recovery and tackling the needs of caregivers; and intersectoral interventions to promote the inclusion of people with mental disabilities and to promote mental health. Examples of innovative delivery strategies include using non-specialist providers, including peers, to deliver psychosocial interventions; using digital platforms to support guided self-care and training and supervision of providers; and using collaborative care with case managers to manage multiple morbidities. Engaging civil society to increase the demand for care, to tackle stigma and discrimination, and to design, deliver, and hold services accountable has helped reduce barriers to demand while also empowering people with lived experience.

Despite robust evidence from pilot studies and trials, little progress has been made in scaling up these strategies in most countries. Major barriers that remain include financing of non-specialist providers to deliver psychosocial interventions; implementing scalable approaches to training, supervision, support, and quality assurance; and institutionalising collaborative and coordinated care. The goal of improving the recognition of mental disorders and delivery of mental health interventions in primary care remains a distant one for most of the world.

This focus on implementation science is at the heart of the work of the PRIME consortium (sponsored by the UK Department for International Development) and the National Institute of Mental Health’s research partnerships for scaling up mental health interventions in low and middle income countries (https://www.nimh.nih.gov/about/organization/cgmhr/_scaleuphubs/index.shtml). The goal is to show how routine healthcare systems can fully integrate the strategies that have proved effective for the management of mental disorders. A key strategy is integration of care with other chronic conditions. Mental disorders (including substance use disorders), for example, worsen the outcomes of cardiovascular and metabolic disorders, which are major contributors to the premature mortality of people with severe mental disorders. The synergies between non-communicable diseases and mental health problems are recognised in inclusion of mental health in the scope of the World Health Organization’s independent high level commission and the United Nations’ high level meeting on non-communicable diseases.

Conclusions

As the global health community reflects on the role of primary healthcare in this 40th anniversary of the historic Alma Ata declaration, we reaffirm the view that pri-
mary healthcare must be the foundation of the architecture of universal health coverage to realise the goals of reducing the unmet need for mental healthcare globally. Achieving this, however, will require fundamental re-engineering of the way that primary healthcare is conceptualised, organised, and delivered, and this, in turn, will need the full engagement and support of all actors in universal healthcare, not least people who are affected by mental disorders. The rising burden of mental disorders, in all countries, requires immediate and dramatic actions, informed by the rich body of evidence on delivery innovations from diverse contexts. Failure to do so will mean failure to achieve universal health coverage—universal refers not just to coverage of the population but also coverage of the full range of its health needs, and health should be considered comprehensively, to include mental health and social wellbeing alongside physical health.

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The inclusion of universal health coverage as a target in the sustainable development goal for health has boosted the global movement to improve access to healthcare services. To improve health, the services accessed must be of high quality, yet there is mounting evidence that the quality of care delivered to populations in many low and middle income countries is inadequate. Governments must consider strategies that will not only improve accessibility to care for their populations but also substantially improve quality. A priority in achieving universal health coverage is the recruitment, training, and retention of healthcare workers. However, there is widespread concern that healthcare workers are often lower than what they are able to demonstrate in the context of a test or under the watchful eyes of an observer. The existence of such “know-do” gaps shows that standard care cannot be fully explained by low competence or inadequate training. Low quality of care and medical errors occur more often when providers are demotivated, which can be fuelled by inadequate working conditions such as shortages of basic drugs and equipment or staff. Yet, although good working conditions are an important part of delivering good quality of care, they are not sufficient to ensure that health professionals are motivated and adhere to recommended treatment guidelines. Here, we discuss the evidence on different approaches that can be used to increase provider motivation and ultimately improve quality of care.

Financial incentives are not always worth the investment

Economists, managers, and policy makers have long seen remuneration as an obvious lever to influence providers’ behaviour. In high income settings, the use of direct financial incentives to improve quality has been ubiquitous with the aim of maintaining high quality standards while encouraging more efficient spending. In settings where salaries are low and health workers demotivated, similar pay-for-performance schemes have been used, often to achieve a dual objective: to increase remuneration and to provide incentives for improving performance.

Despite the enthusiasm for these schemes, the evidence of their impact on quality of care is lacklustre. Although they have been found to increase adherence to quality of care processes, their overall effects are mixed and, when positive, small. For example, an experiment in Rwanda led to the improvement of some rewarded measures of process of care (eg, iron supplementation for children, urine analysis in antenatal care), but not of others (eg, malaria prophylaxis and tetanus vaccination for pregnant women), and provider effort in antenatal consultations was only slightly higher than in the absence of incentives. This is one of several examples of the mixed results achieved by pay-for-performance schemes in terms of quality improvement in low income settings, which are disappointing considering the investment made.

The global evidence is similarly mixed, with no evidence of significant improvement in health outcomes after the introduction of pay-for-performance schemes. Furthermore, caution is needed to avoid unintended consequences that can be costly or compromise quality. For example, when income is directly linked to drug sales, more unnecessary drugs are likely to be prescribed; when providers are reimbursed differently for inputs with similar health benefits they may choose the more profitable ones at the expense of efficiency. More generally, questions remain about the cost effectiveness of using financial incentives, especially when budgets are tight.

The multiple ways in which financial incentives can be designed, as well as the complexity of the healthcare environment in which they are introduced, may help explain why results have not always been as expected. Incentive schemes can differ in terms of the number and types of performance indicators targeted, the size of the reward in relation to provider’s income, or the extent to which the performance targets are completely under a provider’s control. All of these design choices matter and influence the effect of the incentives. The incentive will also be more powerful if it directly targets individual providers (specialists) rather than small teams (primary care centres) or large organisations (hospitals). If individuals value losses more than gains, penalties for failing to achieve targets will work better than rewards for doing so.

Lastly, providers’ personal characteristics may affect how they respond to incentives. For instance, a recent study found that certain personality traits may predispose some people to respond more to incentives than others. For people driven by factors other than remuneration, financial incentives may backfire. This may be particularly relevant to the healthcare sector, as workers are likely to care about not only their income but also their reputation, their patients, or their job.

Reputation matters in some contexts

Another way to incentivise quality improvement is to publish providers’ performance to the public or to their peers. This approach harnesses the power of another source of extrinsic motivation, concerns for your reputation, which are expected to push individuals to perform better. Many countries have made measures of hospital performance publicly available.

KEY MESSAGES
- Policy makers need to look beyond traditional financial incentives when designing policies to improve care
- Health professionals are motivated by a range of factors, both extrinsic and intrinsic
- Incentives that focus on these other motivations or a combination may be more effective
typically reporting on waiting times or patient experience, and sometimes on measures of quality and safety, such as mortality and complications. Most evidence on the impact of public reporting comes from the US and shows mixed results. For hospitals, public reporting has been linked to small increases in adherence to processes of care but not to reductions in mortality. For individual health professionals, it has been associated with decreases in mortality, but there are concerns about how these reductions are achieved, and in particular the extent to which public reporting encourages patient selection.

In settings where administrative information on provider quality is lacking or less credible, public reporting of provider performance can rely on community based monitoring of service delivery and engagement with providers. Robust evidence on such initiatives is still limited, but in a pioneering experiment in Uganda, when non-governmental organisations distributed reports on use and quality of services to local communities, mortality in children under 5 years old fell by a third.

Public reporting programmes could therefore be a worthwhile strategy to promote quality, but their effectiveness requires careful design and a favourable environment. The information reported has to be credible and salient. To achieve this, it has to come from a trustworthy source; depending on the setting this may or may not be the government. Equally, the information reported has to be noticeable and focused on a few indicators, to avoid being ignored.

Public reporting will improve quality only if providers are held accountable for their performance in some way. Even in the absence of potential reputational or legal consequences, publicly reporting poor practice can have financial consequences in a competitive healthcare market. If providers’ income is linked to the volume of patients, low performers will be automatically penalised as patients will vote with their feet and choose higher quality providers. But to achieve this, patients must be able to both access and use the information reported. In many settings, this may require additional supporting initiatives to help patients navigate a complex environment, or simply use and interpret the data. Conversely, if poor practice does not lead to negative consequences for providers—whether financial, moral or legal—public reporting will be a toothless policy.

Harnessing the power of intrinsic motivation

Intrinsic motivation is known to be a powerful driver of provider behaviours. Two different sources of motivation are identified: the satisfaction derived from undertaking actions that benefit other people or society (sometimes referred to as altruistic or prosocial motivation) and the interest or enjoyment of a task itself.

Evidence is emerging that intrinsically motivated providers display desirable behaviours or attitudes towards patients. Health education research in high income countries shows the importance and long term benefits of selecting people with altruistic values, such as compassion or empathy, into the medical profession. Research in sub-Saharan Africa has found that nurses who are more generous towards patients are more likely to choose jobs in rural and remote areas, and that more generous clinicians provide better quality of care to patients. Yet, few interventions have rigorously explored the extent to which intrinsic motivation can be shaped or harnessed to motivate quality improvement.

Policy interventions that could appeal to this type of motivation fall into two categories, depending on whether intrinsic motivation is seen to be malleable or not. If intrinsic motivation is an innate individual trait, policy makers should try to select more people who display the right type of motivation. On the other hand, if intrinsic motivation is a form of capital that can be depreciated or accrued, specific interventions should be introduced to nurture it. We consider recent examples of both approaches.

Selecting people with intrinsic motivation

Many countries have introduced programmes to select people into medical or nursing training by introducing quotas based on people’s geographical origin in order to increase the rural retention of staff, especially in low income settings, but selection of medical students is still mostly based on academic attainment. There are concerns that this approach is not sufficient to ensure that people with softer skills are selected. A few countries have started to introduce selection procedures to identify medical workers with personality traits and values indicative of intrinsic and altruistic motivation. However, such initiatives are still in their infancy, and controversy remains about the types of non-academic attributes that should be included and the validity of the selection procedures. More research needs to be carried out to determine which attributes are associated with better patient care for specific types of healthcare workers to inform such initiatives.

Selecting the “right” attributes is also critical when recruiting people for specific jobs. As economic theory suggests that people sort into jobs matching their preferences or motivation, employers could attract the “right” people by emphasising certain job characteristics. A non-governmental organisation recently tested this idea in Uganda, exploring whether highlighting particular aspects of the role of community health workers would make the job appeal to more altruistic people. Information about job remuneration was manipulated to suggest to applicants that the main role was either more commercial (selling small products such as salt or soap to households) or more prosocial (providing health advice). When lower remuneration was advertised, potential applicants inferred the social aspect of the job was more important; those who applied showed higher levels of altruism and ended up staying longer on the job and visited households more frequently. Similar success with framing job adverts has been found in other sectors, and it deserves further exploration.

Nurturing intrinsic motivation through feedback

Few policies have sought to specifically influence or nurture the motivational capital of providers. Examples include encouraging quality improvement through educational outreach programmes or audit and feedback, either to promote the definition of shared quality norms among groups of providers, or to highlight the benefits of good quality for patients.

An example of such interventions are physician collaboratives, which have some positive effects on quality of care. This approach uses confidential performance feedback to individuals and then creates opportunities to share lessons in a multidisciplinary setting and agree on high quality standards and practices. The Swedish quality registers are often highlighted as an example that has had a sustained and large effect on quality. Crucial to their success seems to be the fact that they are not part of an external regulatory or performance management process, but that they are driven by physicians themselves, who have promoted a culture of constructive appraisal and commitment to quality.

Whereas physician collaboratives highlight the importance of professional
norms and expectations to foster intrinsic motivation, two other examples show how provider performance can be enhanced by nurturing the altruistic motivation of providers. The first comes from the US, where healthcare professionals in a hospital were more likely to change their behaviour and adopt better practices when a campaign for hand washing highlighted the benefits for patients rather than the benefit to themselves.60 The second comes from a low income setting, where altruistic motivation might be expected to have limited effects given the low remuneration and challenging working conditions. Yet, in a recent experiment in India, community health workers who received regular information highlighting the benefits they were creating for patients increased their performance by 25%, and this effect was strongest for those with high levels of intrinsic and altruistic motivation.61 These examples highlight the need to identify policies that can preserve and nurture such reservoirs of goodwill.

Improving provider motivation

Not everyone is motivated in the same way,62 and the interventions that we have described should not be seen as mutually exclusive. Instead they form a palette of options from which policy makers can choose to design the most relevant solution. This process should start with a needs assessment to identify and understand the local obstacles that limit performance and undermine quality of care. In some settings, preliminary problems might have to be addressed before tackling low motivation. For example, if staff do not have the clinical skills to make a correct diagnosis, no amount of money or feedback will increase technical quality of care. If essential basic drugs and equipment are not available, incentives will not improve the treatments provided to patients.

In other contexts, careful consideration should be given to the broader environment in which health workers operate to understand their behaviour. Maslow’s seminal motivation theory63 states that people seek to satisfy their most pressing physiological and safety needs before they can be influenced by “growth” needs such as reputational concerns or altruism. In other words, if their financial remuneration is insufficient for them to make ends meet, providers are likely to be predominantly driven by financial motives. However, satisfaction of needs is not an “all or nothing” phenomenon.64 Similarly, we have reinforced the importance of bearing in mind that health professionals are heterogeneous in their preferences and the relative weight they place on these sources of motivation.

When designing motivational instruments, policy makers also need to take into account the broader environment. Incentives usually target one aspect of behaviour, but they are introduced into a complex system with an existing set of cultures and constraints that may affect the willingness and ability of practitioners to respond as intended. This makes it difficult to predict the outcome of any intervention, or to generalise about the transferability of findings across systems. For example, in settings where governance is weak, or political will limited, incentives to improve provider performance have failed. Several studies have described incentive programmes that failed to reduce absenteeism because of officials’ reluctance to fully implement the monitoring or incentive systems,65 66 or politicians interfering with bureaucratic sanctions.67 This does not mean that incentives cannot work in some settings but that they require innovative solutions, such as finding trusted entities to hold providers accountable, such as peers or the broader community.

Technology could also provide new opportunities to address these challenges. Mobile technologies provide cheap and flexible solutions to improve information systems and feedback, support clinical decisions, facilitate and monitor delivery of care in remote settings, and eliminate many barriers to payment.68 69 Despite the enthusiasm around and potential of these tools, there have been few credible attempts at evaluating their capabilities to support and increase provider motivation.41

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Epidemics of infectious disease often highlight underlying weaknesses in health systems. The two most recent outbreaks of Ebola virus disease, for example, exposed high levels of distrust that contributed to the spread of disease but also have implications for universal health coverage. By the end of August 2019 just over a quarter of deaths from Ebola in the Democratic Republic of the Congo (DRC) had occurred outside treatment centres.1 Since the treatment protocol includes isolation, this suggests that people were refraining from seeking care when symptoms arise or not remaining in treatment for the suggested duration.

One reason for this is lack of trust in institutions, and specifically health systems. Surveys conducted in North Kivu, the centre of the outbreak, during late 2018 to early 2019 found that people viewed Ebola as a government scheme to marginalise certain groups or as part of a business to profit aid workers, researchers, and government officials.2 These findings parallel those of a similar study conducted in Liberia during the west African Ebola crisis in 2014–15.3 In Liberia the distrust was evident before the crisis, with another survey finding that about half of respondents did not believe that they could obtain needed services for themselves or their children if they became sick.4

Low rates of early care seeking are thought to have increased mortality from Ebola. But early presentation is also fundamental to mitigating unnecessary morbidity and mortality associated with diseases from diabetes to HIV/AIDS. We know surprisingly little about the state of health system distrust or what drives it. We use the Ebola outbreak in West Point, Liberia (the largest slum in the country’s capital city) to illustrate how distrust in the health system undermined care coverage when it was most needed and lay out three strategies to better understand and tackle distrust within the broader context of universal health coverage (UHC).

Distrust in the context of UHC

The goal of UHC is to ensure that the whole population, including the most disadvantaged groups, receives essential health services that are good quality. Tanehashi’s 1978 framework for assessing healthcare coverage sets out five stages from available to effective (fig 1).5 Health system distrust is a mediating factor that may drive down the willingness of people to use health services (“acceptability coverage”). If people find health services to be unacceptable and are unwilling to use them, they may remain uncovered even if services are technically in place.6

Consequences of distrust

In August 2014, the transmission of Ebola in West Point was seen as a potentially insurmountable threat to containing the disease.7 The combined historical challenges of marginalisation, poor public health infrastructure, and poor healthcare had resulted in residents of West Point seriously doubting the health system (box 1).8

A lack of clear expectations, miscommunication regarding what should be expected from the health system, and an inability to deliver quality services under earlier health schemes set a challenging baseline. When Ebola arrived, there was little reason for West Point residents to trust the system when told about a strange new disease that required strict isolation from their families.

Care seeking and cooperation

Distrust in government (including government provided healthcare) and exposure to negative Ebola related experiences were among the most important determinants of care seeking in Monrovia, Liberia, towards the end of the Ebola outbreak.9 In West Point this also extended to life saving medical advice, such as reporting of deaths and comprehensive contact tracing (box 2).

More recently, a population based study in the DRC identified low trust in institutions and belief as being associated with a decreased likelihood of adopting preventive behaviours, including acceptance of Ebola vaccines.10 Similar findings were reported in a survey of other African countries: “A staggering proportion of citizens in most of the sampled countries reported having gone without medicines or medical treatment in the previous year, and going without health care was
Box 1: Health system context in West Point, Liberia before Ebola

Before the 2014 Ebola outbreak and after the Liberian civil war, West Point was known as a strong political base of George Weah, leader of the then opposition party Congress for Democratic Change. Residents of West Point felt that the government was not operating in their interests because of their political support for Weah and a history of low social service provision. The area had inadequate refuse collection, sewage infrastructure, and latrines. The population (about 80,000 residents) was served by only one health centre, a joint government and Catholic run clinic that provided free care.

The Liberian Ministry of Health and Social Welfare (MOHSW) developed its first national health policy and plan in 2007, which was centred on a basic package of health services. The policy was rolled out in about 80% of health facilities. However, communication about what was covered was unclear. The availability of services increased under the scheme, but the experience of residents of West Point was mixed. Although all government health facilities were meant to be free, a survey in 2014 by the Community-Based Initiative, an organisation set up to engage the community in tackling Ebola, found that many community members were paying large sums out of pocket. In addition, when people sought care, the clinic was often unable to meet their needs—for example, drugs to treat postpartum haemorrhage were often not available. Although not well documented, data from the national demographic and health survey suggested that maternal mortality had risen from a baseline of about 770/100,000 births to 970/100,000 in 2013. The poor service delivery was compounded by concerns that people would not be treated with respect when they did seek care.

Most strongly correlated with views on health services. Distrust in the health system, and government more broadly, has been associated with underuse of recommended preventive services. This is relevant for Ebola, where timing of presentation greatly affects chances of survival, and for other acute and chronic conditions. Acceptance of and adherence to antiretrovirals, for example, have been found to be significantly associated with trust in medications, trust in the healthcare system, and a patient’s relationships with physicians and peers.

Box 2: Consequences of distrust in West Point—a personal account

During the Ebola outbreak I worked with the Community-Based Initiative (CBI), an organisation started to mitigate distrust and mobilise communities in the fight against Ebola. In August 2018 the CBI discovered that secret burials were taking place in West Point, and I alerted the WHO representative in Liberia, Nestor Ndayimirije. He proposed a secret meeting outside West Point to gather information and protect people who might provide us with valuable insight into what was going on. These people met us at a private location and confirmed the secret burials. As a result we moved in with the burial team and picked up nine corpses.

We then arranged a meeting with community leaders, youth leaders, and women’s leaders. They told us they did not think Ebola was in West Point. We asked them about the nine bodies we had taken in one day. An elder responded that nine deaths in a day is normal. Our inability to initiate basic public health measures to reduce the disease burden among people in West Point who had major sanitation problems meant that death was normal. Why should they believe that these new deaths were due to a new phenomenon called Ebola? When Ebola services were introduced in West Point, many people interpreted these efforts, such as holding centres, as a government strategy to introduce Ebola to the population because of its political views.

Building trust

Perceptions about healthcare in the Ebola treatment unit began to shift in late October. We had worked on community engagement in West Point through the Community-Based Initiative (CBI), an organisation we started to mitigate distrust and mobilise communities in the fight against Ebola. As people recognised that Ebola was a real threat, there was some reversal of the distrust emanating from West Point, which had previously led to the ransacking of the centre used to treat residents with Ebola.

However, as late as mid-October, we found people were still hiding corpses and secretly taking them out of West Point for burial. We decided to hold a focus group discussion with the elders and community leaders. One of the key reasons people provided for secrecy around burial was rumours that no one ever returned from the Ebola treatment unit alive. They told us they did not think Ebola was in West Point. We asked them about the nine bodies they had taken in one day. An elder responded that nine deaths in a day is normal.

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*Reflections from Mosoka P Fallah based on work conducted with the Community-Based Initiative (CBI) that was founded in 2014 to shift Ebola transmission dynamics and funded by the United Nations Development Programme.

Informal care seeking

A 2008 study in Liberia found that low confidence in the government was correlated with a greater reliance on the informal healthcare sector. In addition, people were less likely to report confidence in the health system if they were in the lowest wealth group. Earlier research found that informal healthcare visits in Liberia decreased with a person’s wealth and satisfaction with the formal healthcare system. These factors may be related—wealthier people may get better care, be more satisfied with that care, and, in turn, be more trusting of the health system. Regardless, high rates of informal care seeking can be challenging for health ministries working to achieve UHC. How many people receive their care through informal sources, and how good that care is, is difficult to quantify. As such, it is rarely accounted for in assessments of coverage.

In addition, when informal care seeking becomes normal, it is difficult to change this behaviour quickly in situations of population risk and acute individual need. Such situations require a centralised strategy to communicate to health providers, coordinate care, and ensure a high level of quality. Although a population may have “contact coverage” or, in some cases, even “effectiveness coverage” through the informal sector, high rates of informal care seeking therefore pose challenges to UHC.

Harm to the health system

In extreme instances, high levels of distrust may threaten health providers. For example, the city of Butembo in DRC saw armed assaults on Ebola treatment centres, the murder of a WHO doctor, and frequent attacks on Ebola vaccination teams. These attacks may have been motivated by misinformation, but high levels of underlying distrust in the health system seem to be an important factor. Responders were forced to pause activities such as active case finding, contact tracing, and even the administration of vaccines. The attacks affected who was willing to work in the area as well as the costs of providing health services.

Similar problems affect other countries that are striving to ensure universal
coverage. Violence against doctors in both east and south Asia, for example, seems to have increased over the past 10 years with doctors in India, China, Pakistan, Nepal, and Sri Lanka all stating concern for their physical safety. The population’s lack of trust in medical institutions has been suggested to be a driver of this violence. In China, physicians have reported high exposure to verbal abuse, threats of assault, and physical assaults, leading to emotional exhaustion and lower job satisfaction, with many intending to leave their role. Nurses are also affected, with 7.8% of nurses in a 2015 Chinese study reporting physical violence and 71.9% reporting non-physical abuse in the preceding year. Most perpetrators were patients or their relatives. As news of these events spreads, there is concern that they may breed more fear and insecurity and contribute to further loss of confidence in the health system.

Looking forward: a health systems approach

Many drivers of distrust in public institutions lie outside the purview of the health system, such as weak state capacity or history of civil unrest and war. It is logical that populations faced with geographical constraint who are poor and consistently neglected by the public sector will have limited trust in government. However, below we focus on historical betrayals of trust committed by or within the health system that could be targeted to help reach universal coverage.

Routinely assess rates of distrust and drivers

Pandemic risk models have begun to quantify the effect of non-epidemiological factors on disease spread. Efforts to assess the potential effect of UHC investments may benefit from a similar strategy. Although trust is often considered a qualitative concept, we do have methods to routinely assess it. In 2013, a systematic review of scales and indices identified 45 measures of trust within the health system. Among validated scales, the group-based medical mistrust scale, medical mistrust index, and healthcare system distrust scale were most commonly used. Table 1 gives some examples of the questions and the different contexts in which they were applied.

Given the prevalence of distrust in historically marginalised populations, it is important to thoughtfully adapt these tools to new contexts and disaggregate data to identify what is driving that distrust. Patient level factors that drive distrust are not wholly predictable or consistent across contexts. Race may be an important factor in informing health system distrust in the US whereas caste or religion may be more relevant in India. Patient level factors can even have varying within countries. For example, in China a population based study found that high education tracked with high distrust, but another study among people who had received care in Shanghai hospitals found that more education was correlated with more trust. It also matters who measures distrust and how. It can be particularly problematic when a distrusted group (eg, government actors in a fragile state) is associated with data collection.

Regardless, we lack a comprehensive picture of what drives distrust in countries that are working to reach UHC. The drivers of distrust are diverse—people may doubt the integrity of a ruling party or may have been harmed when seeking healthcare in the past—and require different strategies. We currently lack the data to disentangle distrust and strategically address the problem.

Encourage efforts to build underlying confidence

Three global reports released in 2018 broadly defined high quality care as safe, effective, and patient centred; the reports highlighted strikingly high rates of poor quality care across low and middle income countries, accounting for between 5.7 and 8.4 million deaths a year. We lack a similar quantification for patient centred care, but studies indicate that disrespect and abusive treatment of patients is common. A study in Liberia found that people with low confidence in the health system were more likely to have been dissatisfied with their last health visit. Traumatic experiences during Ebola treatment were also found to be associated with distrust. Earlier work, such as a 2011 analysis of citizens’ perceptions of health systems in 20 sub-Saharan African countries found that quality of care was strongly associated with public opinion of the overall health system. There are limitations on how accurately patients can evaluate quality of care, but receipt of poor quality care and patients’ experiences of care seem to inform health system distrust.

Improving quality of care offers potential to counter distrust. For example, in Liberia, once people who survived Ebola returned to their communities they shared their experiences, perceptions of the healthcare system shifted (box 3). Simply put, health systems may need to prove their worth more actively. This can be done in various ways, such as providing incentives for known drivers of trust, including provision of correct and safe care and ensuring positive patient experiences. Highlighting success and improving transparency are also important.

Trust patients and engage in true partnership

For populations with low trust in the formal sector, it is critical to understand what patients do trust and why. Informal providers may be more readily accessible to rural populations or people living in slums, and they may also be more “acceptable” because of concerns about disrespect, abuse, or poor quality services. In some contexts, care provided in the

Table 1 | Example questionnaire items that assess aspects of trust in health system

<table>
<thead>
<tr>
<th>Example questionnaire items</th>
<th>Surveyed population</th>
<th>Object of trust</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>“Despite my unfamiliarity with doctors, nurses, and hospitals, I feel very confident about my treatment.”</em></td>
<td>Elderly US population with chronic disease</td>
<td>Treatment</td>
</tr>
<tr>
<td><em>“If you or your child is very sick tomorrow, can you get the health care you need?”</em></td>
<td>General household sample, rural Liberia</td>
<td>Healthcare system</td>
</tr>
<tr>
<td><em>Patients receive high quality medical care from the Health Care System</em></td>
<td>African American general sample, Philadelphia, USA</td>
<td>Healthcare system</td>
</tr>
<tr>
<td><em>“I think my doctor may not refer me to a specialist when needed”</em></td>
<td>General national population, USA</td>
<td>Physicians</td>
</tr>
<tr>
<td><em>“How well is the government doing in providing health care?”</em></td>
<td>General household sample, rural Liberia</td>
<td>Government</td>
</tr>
<tr>
<td><em>“If a mistake were made in my health care, the health care system would try to hide it from me.”</em></td>
<td>General population (jurors waiting at Municipal Court of Philadelphia)</td>
<td>Healthcare system</td>
</tr>
<tr>
<td><em>“Medical decisions are influenced by how much money [my provider] can make”</em></td>
<td>General population: villagers with and without insurance, Cambodia</td>
<td>Healthcare providers</td>
</tr>
</tbody>
</table>
Box 3: Community input to counter distrust*

By October 2014 West Point residents had begun to understand that Ebola was real, but distrust in the system persisted and people still did not go to the Ebola treatment unit when they had symptoms. As Ebola spread, the Community-Based Initiative was faced with a serious dilemma and ran the risk of undermining the trust that we had built over the past two months. We asked residents of West Point whether showing them people from their community who had survived Ebola survivors would change their minds about the treatment unit, and they said it would.

The following week, West Point organised a large town hall meeting with local leaders, youth, women, and children. Eleven Ebola survivors from West Point shared their experience and the role that treatment played in their survival.

The chief who had previously told me he would run away with his relatives instead of going to the treatment unit (box 2) turned to us and said, “Now I see with my own eyes and believe in the unit.” By the end of October, we had made 28 patients with Ebola to the unit by working with the elders and chiefs. They were the last group of confirmed Ebola cases in West Point. For us, this reinforced that access to high quality healthcare with visible results has the propensity to shift distrust in the health system.

*Reflections from Mosoka F Fallah based on work conducted with the Community-Based Initiative (CBI) that was founded in 2014 to shift Ebola transmission dynamics and funded by the United Nations Development Programme.

informal sector may even be of comparable standard to that in the formal sector.19 It is important not to assume that patients are naive in their assessment of, and corresponding choices in, healthcare. Strategies that treat communities themselves as the primary barrier to ensuring care coverage (eg, through behaviour change) may lose sight of fundamental problems with the health system to which the population is responding.

It is critical to engage with communities—not just educate and inform. This should include an honest assessment of where people choose to seek care and why. It should take population concerns seriously and be guided by those who express distrust in the health system. This is challenging in conflict situations, which also highlights the need to more systematically capture strategies that work.

Conclusion

Ebola provides a stark example, but distrust undermines investments in UHC across the care continuum. Health system distrust is not fully understood but seems to be partly driven by the health system itself; it is both historically grounded and highly rational. This should raise concern, but it also provides cause for optimism. We must act on the modifiable causes of distrust if we want to deliver on the promise of UHC, providing not just superficial coverage but the high quality healthcare that people want.

Contributors and sources: LRW and MFP worked on the Harvard-LSHTM Independent Panel on the Global Response to Ebola in 2015 and 2016 as well as related work with the ministries of health from the three most affected countries. Building on this, LRW and MFP conceived of the paper. LRW drafted the paper; MFP reviewed, edited, and oversaw the paper. MFP led Ebola community based initiatives in West Point slum, where he grew up. These activities were run through the Community-Based Initiative that was founded in 2014 to shift Ebola transmission dynamics and funded by the United Nations Development Programme. Some aspects of this work have been described previously.1 LRW worked on the team commissioned by the National Academy of Medicine to generate data for its evaluation of low and middle-income country health system quality in Cross the Global Quality Chasm.

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Global health security and universal health coverage: from a marriage of convenience to a strategic, effective partnership

Global health security (GHS) and universal health coverage (UHC) are frequently regarded as two sides of the same coin,1 or more cynically as a marriage of convenience.2 Yet, there has been little consideration of how these ideals interact, with academics and policymakers assuming that actions for one will also be advantageous to the other. This paper analyses at a macro level where these ideals converge, and where differences lie both conceptually and empirically. We argue both GHS and UHC focus on the mitigation of risk and human rights.Mitigating the risk of individuals who face impoverishment owing to healthcare expenditure is core to UHC. For GHS, the risk is transnational and owing to healthcare expenditure is core to economic, cultural and social rights with civil and political rights.

It is important to address these differences before considering the mutual opportunities offered by their ‘marriage’, to ensure that inherent differences are not jettisoned for pragmatic reasons, risking distortion of local health priorities. We support the link that health system strengthening (HSS) creates opportunity to connect GHS and UHC in a tangible way, with clear policy pathways that can benefit both ideals.

Defining Global Health Security (GHS) and Universal Health Coverage (UHC)
We recognise that the definition of UHC can vary in distinct, but convergent ways.3 A holistic definition is ensuring individuals have access, without discrimination to comprehensive, appropriate and timely, quality health services determined at the national level according to needs, as well as access to safe and affordable medicines, while ensuring that the use of these services do not expose users to financial difficulties.4 However, for the purpose of this paper, we focus within this definition on the extent to which the costs of healthcare are covered.5 We recognise that such a definition is not comprehensive, but we also acknowledge that the two components of UHC (access and risk protection) are in tension when it comes to decision making about provision, particularly in resource-poor settings, as the goal of access would lead to prioritisation of the most (cost) effective services, whereas a focus on financial protection would favour allocation of resources to more expensive interventions.6 However, in stressing the importance of universal access to effective healthcare, and universal financial protection against the costs of this care, the definition is consistent with the United Nations Sustainable Development Goals (SDGs), which includes in Goal 3 “ensure healthy lives and promote well-being for all at all ages” and in particular target (3.8) to “achieve UHC including financial risk protection, access to quality essential health-care services and access to safe, effective, quality essential medicines and vaccines for all”.7

We define GHS activities as those concerned with preventing, detecting and responding to infectious disease threats of international concern to limit any socioeconomic impact of transborder disease, which mirrors the WHO definition.8 Nevertheless, we recognise that GHS is “very much like a chameleon” “essentially contested” and “not adequately defined”.9-12 GHS is underpinned by a legal instrument, the International Health Regulations (2005) (IHR).13 The IHR provide guidance for how states should develop and maintain their national capacities to minimise public health threats. While there is no binding international legal equivalent for UHC, the International Covenant on Economic, Social and Cultural Rights guarantees the human right to health. General Comment 14 on the right to health, which provides interpretive guidance on the IHR, to health, proposes a framework of availability, accessibility, acceptability and quality.14 Moreover, policy initiatives create normative guidance on how to implement UHC, including The World Health Report 2010,2 Making Fair Choices on the Path to UHC and the United Nations General Assembly 67/81.15 Similarly, GHS has the policy and operational work of the Global Health Security Agenda (GHSA), an international partnership launched in 2014 and now comprising over 60 countries, international organisations and non-governmental stakeholders,16 which provides political impetus and international collaboration to meeting IHR requirements.

Current intersections between the two concepts
Five key works have sought to connect GHS and UHC. Jain and Alam highlight that UHC can help advance GHS.17 First, low or no financial barriers to accessing healthcare stimulates demand for health services which facilitates early infectious disease detection. Second, protecting people from catastrophic financial risk reduces an indi-

SUMMARY BOX
What is already known about this subject?
- Universal health coverage (UHC) and global health security (GHS) are frequently being used in tandem by policymakers, recognising that there are synergies between the two parallel agendas.
- UHC and GHS goals are in tension. The research and practice communities that represent these two streams need to engage so that smart strategies can be identified to improve both aims simultaneously using codependent, but distinct policy.
- Risk and human rights are two areas of convergence between UHC and GHS.
- Divergence appears in the conceptualisation of risk at the collective or individual level, and the prioritisation of domestic or global activity.

What are the new findings
- UHC and GHS goals are in tension. The research and practice communities that represent these two streams need to engage so that smart strategies can be identified to improve both aims simultaneously using codependent, but distinct policy.
- Risk and human rights are two areas of convergence between UHC and GHS.
- Divergence appears in the conceptualisation of risk at the collective or individual level, and the prioritisation of domestic or global activity.

What are the recommendations for policy and practice?
- Health systems strengthening can be the policy mechanism which, brings GHS and UHC together, elevating health and mitigating risk for all.
and between financiers and recipients, between governments and populations, in resource-poor settings, they recognise trust. 2 19 This form of trust may exist that movements towards UHC build leverage for financing UHC2 (Yamey echoes instrumentalism in linking these agendas.19)

Moreover, Ooms argued that IHR compliance should reflect states. While this risk pooling is not part of the IHR or GHSA mandate, it can be argued that IHR compliance should reflect the ability to pay while protecting the sick), mirrors the relationship between donor and recipient states for GHS, whereby wealthy states finance outbreak responses in affected states. While this risk pooling is not part of the IHR or GHSA mandate, it can be argued that IHR compliance should reflect the ability to pay while protecting weaker states.19

Moreover, Yates et al highlight that movements towards UHC build trust.2 19 This form of trust may exist between governments and populations, between health providers and patients and between financiers and recipients of health. This trust may foster effective collaboration when an outbreak emerges, improving public compliance with state-led interventions to limit disease spread.20 21 However, Ooms et al are more sceptical of joining the two agendas together, recognising that they are synergistic, but not self-evidently so.2 19 In resource-poor settings, they recognise distinct policy pathways for UHC and GHS; for example, whether to fund development of surveillance capabilities or social health insurance mechanisms, a point we would agree with.

Ooms et al further underscore the instrumentalism in linking these agendas. Tying UHC to GHS may provide greater leverage for financing UHC2 (Yamey echoes this suggestion, that while the world’s gaze is on GHS in the wake of Ebola, associating these can be a tool for getting attention to UHC and the health of populations in low and middle-income (LMIC) settings23). Conversely, GHS advocates may connect with the UHC agenda to gain legitimacy among those who conceive of the security discourse being too focused on high income country (HIC) interests.2 However, Ooms et al conflate UHC and HSS. These are used interchangeably, and this risks unclear understandings of what UHC entails, furthering the potential for misaligned priorities.

The fifth work considers GHS as “collective” security and “individual” security which broadly aligns with UHC.23 Heymann suggests that a difference exists between collective health security concerned with mutual global vulnerabilities posed by transborder spread of acute public health issues, and individual health security which includes access to safe and effective health services, products and technologies.21 Heymann’s argument follows that if there is individual health security, this contributes to collective health security at the community, national and global levels (i.e GHS).

Conceptual convergence: risk

Both UHC and GHS aim to mitigate potential health and economic threats either at the level of the individual (UHC) or the collective (GHS). For UHC, one such risk results from individuals’ exposure to economic hazard as a result of a health event, that is, an individual’s health needs may be met only by incurring impoverishing or catastrophic costs associated with accessing appropriate healthcare.19 This form of individual or familial risk is centred on the cost, rather than the type of illness and can relate to acute to chronic conditions. Any- one may be exposed to this financial risk, the potential exposure is a lifetime, the likelihood of occurrence is high, and the consequences of exposure are disproportionately large for the poor who have insufficient funds to ensure financial resilience when confronted with a health concern.24 However, UHC offers an effective risk reduction intervention: proposing prepayment and pooling mechanisms to reduce both the probability of healthcare-related losses occurring, and the severity of their impacts on household’s budgets when they do. This also enhances individuals’ willingness and ability to access healthcare as opposed to delaying careseeking until they become very ill, thereby driving up healthcare costs for everyone. Accordingly, risk reduction through UHC benefits both individuals and societies. Moreover, reducing risk to any health concern through UHC, including communicable disease, has significant opportunity costs for GHS.

Instead of the ‘livelihood risk’ for UHC, the risk for GHS results from an infectious disease hazard which may result in a large-scale outbreak, threatening a population and/or economic or political stability as a result of opportunity costs lost through interrupted access to international markets, reduced international travel and fear among the population. Despite the IHR seeking to minimise such disruption, there are several examples of factors beyond a government’s control during an outbreak which impact a range of sectors beyond health.25–27 Indeed, President Ellen Johnson Sirleaf argued that the best action the USA could take to support Liberia in the Ebola epidemic was to “not ostracise us via trade”, suggesting that severing economic ties would pose as much risk as the virus itself (Emily Mendenhall, personal communication, 2017).

Accordingly, GHS focuses on future-proofing pandemic risk through preparedness. It does this by contingency planning for a range of disease threats.28 Luckily, large-scale international outbreaks are rare events, nevertheless, the severity of the potential (socio)economic impact of an outbreak leads to considerable investment in risk mitigation. This inadvertently may bias the public’s risk perception, creating potentially disruptive influences on “business as usual” for international travel and trade.12 29 Exemplifying this was the West-Africa Ebola epidemic, which had a relatively low likelihood of ‘anyone in the globe’ becoming infected, because of the low reproductive ratio of the disease. Nevertheless, despite the low actual risk, there was a high perceived risk. Margaret Chan reflected “I have never seen a health event strike such fear and terror, well beyond the affected communities”.30 This fear led to the implementation of expensive policies such as airport screening apparatus in HICs. These were not instrumental in reducing the actual risk of disease incursion but were effective political placebos implemented by governments to reduce perceived risks felt by HIC citizens.

Conceptual convergence: human rights

Heymann’s distinction between GHS as collective security and UHC as individual security allows convergence between the two agendas through the lens of human rights also. Achieving both GHS and UHC require states to comply with their obligations and duties under international, regional and domestic human rights law. Human rights are often conceptualised as matters of individual security, whereby a state fails to respect, protect or fulfil an individual’s human rights. However, even where an indi-

universal successfully seeks recourse against a state for a human rights violation, such decisions have a collective impact, setting precedent that results in the state complying with its human rights obligations elsewhere. This is particularly the case for UHC, where human rights actions launched by individuals have, according to some proponents, addressed underlying systemic failures by governments to take steps to immediately realise the right to non-discrimination and progressively realise the right to health. 31 These latter obligations typically fall within the realm of economic, social and cultural rights. This requires states to progressively realise these rights to the maximum of their available resources, while not regressing from steps already taken for non-discrimination and meeting minimum core obligations. 32 In contrast, much of the dialogue discussing GHS and human rights relates to civil and political rights, such as those codified in the IHR; rights that the state must respect, provide and fulfill such as the rights to life, freedom of movement, and freedom from torture or cruel, inhuman or degrading treatment. 33 While this civil and political rights framing is understandable as it focuses on the short-term and immediate vulnerability of individuals to the state’s actions when seeking to protect the many and/or the economy during an outbreak, the goals of GHS are fundamentally grounded in economic, social and cultural rights, namely, the right to health. The right to health includes the obligation that states take steps necessary for the “prevention, treatment and control epidemic, endemic, occupational and other diseases”. 34 This obligation is congruent with GHS, and is also codified in the IHR, for example, within the core capacity obligations.

As a result, convergence between UHC and GHS can be found through the realisation the right to health, with both UHC and GHS requiring that states address inaction or regression in realising the right to health to the mutual benefit of both ideals.

Conceptual divergence: inward versus outward: individual versus global security

Despite unifying features, there are differences in each with respect to the characterisation, who is identified as “at risk” and what responses have been taken to mitigate risk. We suggest these understandings of risk mirror divergent conceptualisations of security.

GHS has sought to answer two questions: security from what and for whom? 35 We know that the ‘from what’ is different in the case of UHC and GHS, as outlined above, but so too is the ‘for whom’. For UHC, at risk is the everyday person who may be affected by ill health and the associated costs, or the inability to access health services due to other non-financial barriers. For GHS, however, the global population is at risk as their chances of contracting an infectious disease are reduced through ensuring GHS. Others have argued that the referent object for GHS is the economy or national security of a particular state fearing the socioeconomic impact of an outbreak on trade and travel. 36 According to GHS, predominantly mitigates risk from the top down, and UHC may mitigate risk from the bottom up, although infrastructure and support is required from the state to support individuals in risk pooling behaviour.

Both UHC and GHS risks are mitigated by financial investment in health. For UHC, the investment reduces the-time people delay care-seeking due to the financial burden of paying for health. Through GHS, the investment is in pandemic preparedness; strengthening surveillance and response mechanisms to respond to infectious disease outbreaks under IHR (2005). Consequently, the rationales and methods for mitigating against these risks—from the household to state levels—are quite different.

While private and non-profit actors are vital in global health, we argue that states alone play a fundamental role in the convergence of the two risks identified in this paper. However, a distinction emerges between mitigating a state’s risks which are domestic priorities, and those that are globally focused. For instance, state priorities that are domestically focused may involve prepayment schemes to reduce the financial risks posed to citizens (UHC). On the other hand, states prioritising GHS focus on implementing the IHR (2005) to reduce the risk of severe economic impact in the case of an acute public health event (Wenham, Examining Sovereignty in Global Health, PhD, 2016). These risks are fundamentally different, although the policies deployed may carry opportunity costs for both UHC and GHS goals. Governments, particularly in resource-constrained settings must decide whether to prioritise their global or domestic responsibilities, based on which risk they consider the most important. National leaders may prioritise one agenda over the other, aligning with political and economic priorities; for example, they may prioritise UHC when fighting an election as it is popular with the domestic electorate, yet focus on GHS when looking to attract donor dollars.

Practical convergence: HSS

We argue that HSS can be the policy mechanism which brings GHS and UHC together, elevating health and mitigating risk for all. This echoes Kutzin and Sparkes who argue, “health system strengthening is what we do: UHC, health security and resilience is what we want”. 37 A health system can be defined as the ensemble of all public and private organisations, institutions and resources involved in the improvement, maintenance or restoration of health. 38 HSS refers to policy and programmatic activity designed to apply systems thinking to health, to improve overall performance. 39 The WHO framework for HSS encapsulates six building blocks: service delivery, health workforce, health information systems, medical products, health financing and leadership and governance. 39 The health system shapes many people’s health by determining how s/he accesses medical care, from whom s/he receives medical care, what medicines are available and accessible, what technologies are affordable and available for testing and diagnostics and how s/he is expected to pay for it, and as such contains many of the tenets of UHC.

For UHC, functioning health systems organised around people, institutions and resources leads to improved access, quality, sustainability and affordability for individuals. 37 For GHS, successfully functioning health systems underpin countries’ ability to detect and respond to disease threats. 38 In this way, a response to a health emergency (GHS) should be embedded within an existing health system, involving Farmer’s interweaving of “stuff, staff, systems and space” to address the needs of an epidemic and population health. 40 Kluge expands this, providing suggestions for how to interlink these concepts, noting that investing in HSS improves GHS, so that systems become resilient to health crises and can respond when needed. 41 By investing in health systems, this increases the resilience of states to respond to outbreaks of disease that spread across national borders, thereby investing indirectly in GHS. 42 HSS therefore is a common road to both UHC and GHS.
UNIVERSAL HEALTH COVERAGE

and HSS based on policy metrics. As these concepts are embedded within key pieces of global policy, it seemed appropriate to use these indicators to ascertain whether there was practical as well as conceptual convergence between goals. We mapped GHS, using the first edition of the Joint External Evaluation Tool indicators as a proxy, and UHC, using SDG indicators 3.8.1 and 3.8.2, to measure health service coverage and financial protection and HSS, using the six WHO Building Blocks. As these indicators link to each policy aim, where we see convergence is a direct evaluation of how the concepts overlap. Figure 1 shows a tepid synergy between UHC and GHS. Although UHC indicators explicitly include reference to GHS, in a catchall “Health Security IHR Core Capacity Index”, it is not a key component of the index. Convergence appeared in financing, health workforce availability and capacity and access to medicines. There was not even overlap between the “infectious disease” indicators of UHC and those of GHS. However, despite limited overlap between GHS and UHC, there is considerable overlap between HSS and both GHS and UHC, with each of the six building blocks finding a comparable indicator with the other two agendas, and all three goals focusing on health workforce, access to medicines and financing/financial risk protection.

Concerns linking these agendas

Synergising GHS and UHC raises several red flags. For UHC focusing on health through prepayment risks prioritising curative clinical services at the expense of individual

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Figure 1 | Synergy between global health security (GHS), universal health coverage (UHC) and health systems strengthening (HSS).
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that includes both GHS and UHC means an approach to HSS, promoting an HSS model which was introduced as a means to support of selective primary healthcare in the country with limited resources. Like Unicef's does not address health inequities within a leave the door open for an emphasis on GHS UHC can be considered within this.

Conclusion

UHC and GHS are increasingly linked in global health policy. This paper illuminated the potential synergies between the two parallel agendas, but has considered the inherent tensions of a joined up UHC-GHS framework. We consider risk as being a unifying conceptual tool; the risk of the international spread of infectious disease on a population and national/economic security is fundamental to GHS. For UHC, the risk centres on the threat of financial impoverishment due to catastrophic health expenditures. However, these agendas are not comprehensively aligned. We recognise divergence between these frameworks; between the individual and the collective and between domestic and international priorities. Empirically, we show there are some overlapping indicators between GHS and UHC, but there are also a number of indicators outside this synergy. To that extent, the UHC and GHS goals are in tension. The research and practice communities that represent these two streams need to engage so that smart strategies can be identified to improve both aims simultaneously using codependent, but distinct policy. We suggest HSS as a method to achieve both and in doing so build more “equitable and sustained improvements across health services and health outcomes”. We caution that this is not panacea, but a meaningful step to bringing these global health agendas together in a more comprehensive mechanism.

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and population health promotion and prevention.34 This leads to more healthcare services but worse outcomes overall and distributed benefits less equitably.34 For GHS, the limitation is its focus on national and economic security and the threat of infectious disease amid trade routes. This prioritises diseases which affect dominant trading networks of HICs, creating a quasi-postcolonial power imbalance denoting which diseases are considered globally important.

There remain health issues which fall outside of both GHS and UHC (and HSS) priority setting. Recognising the conditions that are systematically excluded from both agendas is equally important. For example, road safety, improvement of Water, Sanitation and Hygiene (WASH) facilities, pest control and neglected disease which are core to improving human health, but neglected in both UHC and GHS.4 Yet, many donors expect discrete funding priorities that can be easily measured, such as treatment for the big three. Indeed, addressing the potential economic threats to national labour force through a multitude of further health burdens may be one way to align the concept of “risk” between UHC and GHS.

A further challenge is resource allocation: in healthcare systems worldwide, there are gaps between available funding and possible health interventions leading to priority setting.3,11 What are the ethical, political and socioeconomic implications of prioritising GHS, which may threaten HICs, as well as LMICs, rather than addressing Non-Communicable Diseases (NCDs) relating to the growing tobacco epidemic in Africa or ultraprocessed food in South America? Priority setting implies difficult choices have to be made and raises important ethical and equity considerations. UHC requires decision makers to agree on criteria and establish transparent and fair priority setting processes.15 Further elaboration is needed to understand how concerns for GHS and UHC can be considered within this.

Additionally, open definitions of “health systems” and how to measure their strength leave the door open for an emphasis on GHS and entire disease areas (such as NCDs) that do not address health inequities within a country with limited resources. Like Unicef’s support of selective primary healthcare in the 1980s—which was introduced as a means to simplify and actualise primary healthcare goals—and the Gavi and Global Fund approach to HSS,35 promoting an HSS model that includes both GHS and UHC means

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How moves towards universal health coverage could encourage poor quality drugs

Universal health coverage depends on affordable medicines. But pushing down prices without also investing in quality assurance will increase the sale of substandard and falsified drugs, warns Elizabeth Pisani

Many governments in middle income countries are working hard to deliver on political promises that all their citizens will have access to quality health services, without being impoverished. They are finding that universal health coverage (UHC) doesn’t come cheap.

Indonesia’s national health insurance scheme, for example, has given out 223.4 million health cards since its inception in 2014. Nationwide, 73% of households said at least one household member had some health insurance in 2018, up from 52% in 2013. Yet the scheme has been in permanent deficit; by 2018 it had a shortfall of 23 trillion rupiah (£1.3bn; €1.5bn; $1.6bn).

Such deficits lead to belt tightening. Globally, about a quarter of all health spending is on drugs. In poorer countries the proportion is higher, and patients typically foot more of the bill. As governments move towards UHC, they increasingly pay for drugs that used to be paid for by patients—and look for ways to push prices down.

Cheaper drugs should mean more people effectively treated for the same budget, taking countries towards UHC. There’s plenty of room for belt tightening. Generic and branded drug makers often charge whatever they can. Inefficient procurement and plain old corruption push prices up; some poorer countries pay 30 times more than the international reference price for basic generic drugs.

But countries with under-resourced health budgets seeking to push down prices should be careful what they wish for. Recent research in China, Indonesia, Romania, and Turkey found evidence that drug manufacturers and distributors react quickly to keep profits as high as possible, potentially leaving patients exposed to substandard drugs, and creating opportunities for criminals to sell fake drugs.

The downside of cheap drugs

One way to maintain profits is to cut production costs—for example, by shifting manufacturing to cheaper locations or increasing worker productivity. Some manufacturers also mentioned more worrying measures, such as switching to cheaper ingredients or packaging, or skipping some quality assurance steps.

The result can be drugs that are so sloppily made that they don’t dissolve properly in the body; that degrade before the patient takes them, sometimes because of cheap but inappropriate packaging or handling; or that are dangerously lacking in active ingredients. Similar problems have been reported from India, one of the biggest producers of cheap drugs.

Drug regulators are supposed to spot this kind of corner cutting before procurement agencies buy them—and they do, but only if they have the right people, money, technology, skills, and incentives. Our study found that Turkey’s drug regulator, which employs over 3000 well trained inspectors, is widely considered to provide effective oversight.

But in the mad dash to reach UHC on a shoestring, many middle income countries underinvest in developing regulatory capacity. Other forces are at play, too. Domestic drug makers are sometimes protected by local authorities, who have made promises to voters about jobs. Regulators in China and Indonesia told us that politicians, unwilling to sacrifice votes or tax income from industry, have discouraged thorough inspection of factories or warehouses.

And there’s no effective way to ensure that imported products are well made. The global drugs market operates on a “buyer beware” system—national medicines regulators don’t have to assure the quality of products for export. Most imported drugs are waivered through with paper based assurances; well resourced regulators only test a tiny fraction of imported drugs.

Around 30% of countries globally, according to the World Health Organization’s latest count, don’t have the capacity to regulate drugs properly, even at home. They take what they are sent, and it is not always first rate. A 2017 WHO summary of studies going back a decade estimated that one in 10 anti-infective drugs sold in low and middle income countries didn’t meet minimum quality standards.

Filling the vacuum

The most efficient producers probably can’t cut production costs much further without compromising quality, and many aren’t prepared to do that. But most are not prepared to disappoint shareholders by reducing profit margins either.

Procurement officials in the health ministry might decide that costs plus a 10% profit represents a “fair” price, but many drug producers and distributors of innovator and generic drugs calculate globally. They compare that margin with what they can make on other products or in other markets. If procurement practices drive prices down in one market, multinational companies just pull (or stay) out of the country. Domestic producers, who often have higher costs, sometimes stop making comparatively underpriced products entirely.

The Romanian government, struggling with large deficits in its national health insurance programme, in 2009 introduced a system designed to cut drug prices to the European minimum or below. After a radical revision of the price caps in 2015, prices fell by 16-25% overnight, while European Union rules allowed drugs purchased in Romania to be resold in other countries. As a result, manufacturers withdrew about 2000 of 6200 authorised medicines from the Romanian market. Patients in Romania now look for those drugs on the internet, and doctors have reported using smuggled products.

Vacuums left by product withdrawal are easily filled by repackaged expired drugs or stolen or smuggled products that avoid taxes, import duties, or registration costs—and bypass regulatory oversight. The gap may also be filled by fakes, which cost almost nothing to make. WHO reports fakes in all classes of medicines, worldwide.

High prices can also effectively create shortages for uninsured patients if they can’t afford to buy a drug. In theory, UHC should reduce this risk, by covering the cost of more drugs. But even well resourced health systems restrict access to drugs people need or want. In England, for example, the NHS does not cover pre-exposure prophylaxis for HIV or the latest treatments for cystic fibrosis. In poorer countries, health insurance cards may facilitate access to health services but leave patients to pay for the most expensive prescriptions.

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“Affordability shortages” help drug falsifiers in two ways. Firstly, falsifiers seek to maximise profits, and higher prices mean more profits for similar outlay and risk. Secondly, falsifiers are criminals, and patients who can’t afford the prices at regulated outlets chase bargains on the internet, in street markets, or in buyers’ clubs, which are harder to police.

**Selling the idea of quality**
Changes in health financing in efforts to achieve UHC in middle income countries may also eat into the revenues and profits of health providers serving insured patients. Less scrupulous providers may choose to top up their earnings by encouraging patients to buy drugs “off plan,” often in the name of quality. This can increase patients’ risk of getting falsified products.

An example comes from Indonesia, where in 2016 over 1000 children received fake vaccines, supposedly made by multinational producers GSK and Sanofi. Domestically produced, WHO prequalified vaccines were universally available free but earned doctors only a tiny fee. Paediatricians at some private hospitals preferred instead to offer imported vaccines at up to $40 a shot, exploiting public tendency to consider high cost an indication of quality. To maximise earnings, some doctors bought the vaccines at cut price from roving salespeople. In fact, these fake vaccines were made in a garage in a Jakarta suburb.12

**What’s the damage?**
Most fake drugs contain little or no active ingredient, and many contain toxic substances. These will obviously fail to cure and may harm. It’s harder to assess the damage done by substandard drugs. Occasionally, drugs will be so badly made that they will poison and kill people, but that’s mercifully rare.13 Generally, substandard drugs simply fail to prevent, treat, or cure disease as they should. Money is wasted, and patients are weakened and may die unnecessarily, though death is usually blamed on underlying illness and the role of poor quality drugs often goes unrecognised.

If the disease is infectious, prevention failure and longer illness can mean more transmission. Subtherapeutic doses of anti-infectives contributes to antimicrobial resistance, which can spread globally, thus reducing the effectiveness of quality assured drugs in well regulated markets.14

These concerns don’t seem to ignite high profile, activist led campaigns. We know neither the prevalence nor the distribution of poor quality drugs. The logic of the market, and information from regulators, suggests that falsifiers more often target high value (often branded) drugs. Limited field surveys suggest substandard and degraded drugs are more often found among lower cost generics, especially where regulation is weak.15

Generics are essential to every national health system, and most work just fine, even in less regulated markets. No one wants to risk undermining public confidence in the pharmaceutical bedrock on which UHC must be built. But unless quality assurance is strong enough, patients and doctors, who have no way of knowing what’s actually in a pill or a vial, will continue to rely on sometimes unreliable signals of quality such as price and brand.

This creates a headache for governments striving to achieve UHC. Delivering better quality assurance requires investment in technology and skills, which countries need to build into budgets and practice. It’s an inescapable part of achieving UHC.

**Access to drugs that work**
The market for quality assured drugs is disrupted by a mismatch between a largely socialised demand side, and an almost entirely capitalist supply side. In countries aiming for UHC, most decisions about buying drugs are made by governments aiming to minimise spending while protecting local jobs and revenues. These goals are often internally incompatible and certainly don’t align with the aims of drug companies: to maximise global profits. Until that changes, substandard and falsified drugs will continue to flourish.

Existing efforts to change incentives for drug discovery, production, and procurement may improve access to affordable, quality assured drugs, but will take time.14 Three interim measures might help protect drug quality in the meantime.

Firstly, national discussions about fair prices should consider the globalised market. Recent efforts to promote open pricing could narrow the price difference between markets, especially if countries also share medicine registration and procurement mechanisms. But expect resistance from politicians or bureaucrats (claiming national sovereignty) who see in UHC an opportunity for kickbacks from national procurement contracts.

Secondly, increase regulatory resources in countries that export to low and middle income markets. This will also ruffle feathers, including among regulators in importing countries who worry about sovereignty and lost revenue. There are successful precedents, however. WHO’s prequalification programme has increased quality assurance at source for drugs to treat HIV, tuberculosis, malaria, and reproductive health, for example. In the aviation industry, the 1944 Chicago Convention requires countries to accept flights from other nations only if their regulatory and safety procedures meet standards set by the International Civil Aviation Organisation. It also allows for cross national inspection, quality assurance, incident reporting, and investigation.17 There’s no sign that national sovereignty has suffered as a result.

Thirdly, countries should adjust health budgets in response to other policy choices. For example, few nations can produce quality assured drugs as cheaply as the great exporting powerhouses, so if a country decides to promote local jobs by buying medicines from domestic producers, it have to pay more. Similarly, stricter environmental rules for factories will push up production costs, and thus prices. If countries want to pursue such policies and deliver UHC, they’ll have to increase budget allocations for drugs.

Taking account of the price of quality in policy and procurement decisions will not increase access to drugs, but it could help to ensure that the drugs that are on the market actually work as intended.

Elizabeth Pisani is an epidemiologist who researches the interaction between politics, human behaviour, and health. She currently focuses on the political and economic drivers of substandard and falsified medicines, with a particular interest in countries that are rapidly scaling up access to health services. This essay is informed by research in four countries, supported by the Wellcome Trust and Erasmus School of Health Policy and Management.

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Universal quality health coverage—committing to a healthier and more productive society

High quality healthcare can be achieved in all settings with good leadership, robust planning, and intelligent investment, say Jeremy Veillard and colleagues

Improving access to care, especially for poor people, through universal health coverage is not enough to achieve better health outcomes. This is the simple and powerful reminder from a new report coauthored by the World Health Organization, the World Bank Group, and the Organisation for Economic Cooperation and Development. It is the first global report coauthored by the three multilateral organisations.

The report calls for urgent action from governments, clinicians, patients, civil society, and the private sector to help rapidly scale up quality healthcare services for universal health coverage. To start with, governments should develop national quality policies and strategies that address the foundations of quality health systems. Building quality health services requires a culture of transparency, engagement, and openness about results, which should be promoted in all societies. National quality policies and strategies should ensure that healthcare workers are motivated and supported to provide quality care; that healthcare services are accessible and well equipped; that action is taken to ensure that medicines, devices, and technologies are safe in design and use; that information systems continuously measure, monitor, report, and drive better quality care; and finally, that the way healthcare providers are paid for encourages and enables quality of care.

High quality healthcare for all might seem ambitious, but it can be achieved in all settings with good leadership, robust planning, and intelligent investment. In Canada, for example, a model involving citizens and communities in the design of healthcare services has improved a range of indicators, including a 33% reduction in child mortality. Costa Rica has also achieved remarkable improvements in primary care quality through a carefully planned, implemented, and resourced improvement strategy focused on quality.

Around the world, lessons abound on what works and what does not, providing a rich foundation from which to rapidly scale up a quality revolution. For the first time, the report reviews evidence available for 23 distinct interventions that governments, managers, and clinicians can use to improve quality of care. Among those, several categories of interventions stand as priorities: changing clinical practice at the frontline; setting standards; engaging and empowering patients, families, and communities; information and education for healthcare workers, managers, and policy makers; use of continuous quality improvement programmes and methods; establishing performance based incentives (financial and non-financial); and legislation and regulation.

Each country requires different sets of interventions to improve quality of care—depending on its quality baseline, resources available, capacities and capabilities, and needs and expectations from the populations served. The report describes how four countries with vastly different contexts—Canada, Ethiopia, Mexico, and Sudan—are doing so systematically.

Of course, quality care requires some investment, but it is affordable, especially when the costs and consequences of poor quality are considered. Many of the interventions to improve quality—think of checklists or basic hygiene, for example—are inexpensive and within reach for all countries. The returns are plentiful—better individual and population health, more productive workers, and pupils that perform better in school and will contribute better to the economy. In other words, investment in quality healthcare contributes to growth in human capital and economic development. So striving for universal quality health coverage is not just an investment in better health—it is a commitment to building a healthier and more productive society.

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Non-communicable diseases must be part of universal health coverage

As the world’s leading cause of preventable morbidity and disability, non-communicable diseases are central to achieving universal health coverage, says Sania Nishtar

The move towards universal health coverage (UHC) has been spurred on by the risk of a pandemic and the premise of the sustainable development agenda. But, as countries move towards UHC, their frame of reference often converges around services focused on maternal and child health and infectious diseases. This is likely to be because of the programmes that were established in the era of the millennium development goals. Non-communicable diseases must be part of UHC frameworks—they are the world’s biggest killers and the leading cause of preventable morbidity and disability. This does not mean a vertical solution. Opportunities exist to negotiate policy space for non-communicable diseases in each health system’s six “building blocks,” and therefore in UHC plans.

In terms of service delivery and financing, where free at the point of delivery measures are being adopted to achieve UHC, non-communicable disease services must be included in UHC entitlements. Where insurance schemes are being used to finance UHC, non-communicable diseases must be included in the public benefits package. And where social protection programmes are the instrument of UHC, they must acknowledge that much of the risk of catastrophic health expenditure is derived from non-communicable diseases.

Primary healthcare must be reoriented towards chronic care. This can be done readily in settings where HIV chronic care platforms have been established, as these provide an opportunity to jumpstart nascent non-communicable disease programmes. A recent partnership between the US President’s Emergency Plan for AIDS Relief and AstraZeneca, aimed at offering HIV/AIDS and hypertension services in an integrated manner, is a step in the right direction. Recent initiatives, such as the Defeat NCD Partnership and Resolve, can help accelerate the integration of non-communicable diseases into primary healthcare.

Drugs for non-communicable diseases should be included in national essential drug lists and national drug procurement systems. Access to disease preventing vaccines is a key component of UHC. The human papillomavirus (HPV) vaccine, for example, is a cost effective measure to prevent cervical cancer, a non-communicable disease that needlessly kills over 270 000 women each year. HPV vaccination is being rolled out from Australia to Rwanda. Coupled with increased screening, HPV elimination is now feasible and, with support from countries and organisations like Gavi, the Vaccine Alliance, the vaccine can be accessible across the globe. Similarly, the hepatitis B virus (HBV) is the cause of 43% of deaths from liver cancer globally. Liver cancer rates tend to be highest in countries with minimal vaccination programmes. If administered early, the HBV vaccine can save lives.

Complexities in the diagnosis of non-communicable diseases necessitate surveillance of risk factors rather than diseases. This can be integrated with existing population based surveys such as the Living Standards Measurement Survey, Demographic Health Survey, or the Multiple Indicator Cluster Survey. These are routinely conducted in over 100 countries. Integrating surveillance of non-communicable disease with these surveys would remove the need for standalone surveys. This could be supplemented with cancer registries and non-communicable disease sensitive metrics in service management information systems.

The inclusion of training modules on non-communicable diseases into the curriculums of ongoing education for health workers can help prime professionals in the new realities in public health. Community health workers and nurses have critical roles in giving lifestyle advice and support in reducing stigma and discrimination, which is especially important when it comes to mental health. Partnerships with the nursing community can be rewarding. The Nursing Now project is looking at ways to further leverage their strengths, including collaboration with the non-communicable disease community.

Technological innovations ranging from telemedicine and mobile health to artificial intelligence and the internet of things, as well as personalisation and on-demand healthcare, are largely drawn on non-communicable diseases. As health systems of the future are shaped with these changes, and UHC plans draw on them to make health systems more efficient and effective, the integration of non-communicable disease care will become more feasible. But there must be political will to do so.

Integration with UHC is critical for closing the services gap in non-communicable diseases and tackling the rates of unnecessary deaths, disability, and illness. Although essential, however, it is not enough. Non-communicable diseases are uniquely responsive to changes in the environments in which people live. Factors that contribute heavily to non-communicable disease risk factors—such as unhealthy diet, physical inactivity, tobacco and alcohol use, and air pollution—are beyond the purview of the public health system, hence the urgent need for multisectoral action.

Prevention strategies, such as the WHO recommended “Best Buys,” and more recent initiatives, such as WHO’s move to remove trans fats from the global food chain, are critically important in tackling non-communicable diseases. They could help save 8 million lives by 2030. To be successful, governments must unbundle the term “multisectoral.” More broadly, an overarching change is needed so that governments choose to prioritise long term sustainability over short term gratification and to calculate the true cost borne by societies in the future instead of just the price of actions and policies today.

The global community has a responsibility to facilitate this transformation. Countries have become accustomed to the politically attractive clear “asks,” fiscal envelopes, and hand holding of the millennium development goal era. There should be no escaping a strong
global push to tackle non-communicable diseases. A strong institutional base, a clear strategy, and adequate funding are critically needed.

Non-communicable diseases will be profiled at the United Nations General Assembly high level meeting in September. Never has there been a wider chasm in public health between our knowledge about the burden of disease coupled with evidence of what works on one hand, and inaction on the other. We must act decisively to bridge that. The future will hold us accountable for our actions. Words are not enough.

Sania Nishtar is co-chair of the WHO independent high level commission on non-communicable diseases.

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Building more effective health coverage in Argentina

Argentina needs to provide actual rather than aspirational universal health coverage, says

Adolfo Rubinstein

Argentina, an upper middle income country, has a developed healthcare system that performs well compared with other countries in Latin America. Health outcomes lag behind the country’s potential, however, considering it is one of the leaders in the region in terms of health spending per capita, which is 10% of its gross domestic product.1

The United Nations has set universal health coverage (UHC) as a target for sustainable development goal 3.8, to be achieved by 2030.2 The dimensions of UHC run along three axes: the population that is covered by pooled funds; the proportion of direct health costs covered by pooled funds; and the health services that are included.3

Although everyone in Argentina is entitled to receive healthcare, free of charge, in public facilities, UHC is nominal and implicit rather than actual and explicit, which does not necessarily translate into effective or quality care. In reality, two thirds of Argentina’s population of 45 million also have social health or private insurance. This leaves another third (an estimated 16.5 million people) with no explicit coverage. Therefore, the public sector, funded by taxes, serves as a sort of re-insurance for the whole population.

Many of the shortcomings of Argentina’s healthcare system come from its segmented and highly fragmented system. The social health insurance sector, which is dominant in Argentina, is composed of around 300 different funds (“obras sociales”). These vary in scope and size and are mostly managed by trade unions, white collar personnel, and civil servants at a federal level and in the provinces. Five million older people are covered by a social health insurance fund for retired workers. Overall, social security provides healthcare coverage to 60% of the population. The private sector covers approximately six million people, of which four million come from obras sociales, contracting private supplementary plans to about 200 prepaid plans.4 To harmonise coverage among funds, there is a mandatory health benefit plan, which is guaranteed for all beneficiaries of social or private insurances, and a reimbursement fund for costly healthcare technologies. But healthcare coverage in Argentina is unequal: more than 60% of the poorest 20% of the population have no insurance, compared with less than 10% in the wealthiest 20% of the population.5

We are now working on a strategy to advance the integration of healthcare coverage among subsectors. This reform faces many challenges to achieve effective UHC and to accomplish the outcome improvements that the UHC goals set out to achieve.6 We are focusing on four key issues.

Firstly, we are setting up provincial public insurance schemes by creating subsidised plans for uninsured people at a provincial level. We are relying on one of the national programmes that offers a good platform from which to launch this strategy. The SUMAR programme, sponsored by the World Bank, has made huge progress in advancing UHC strategy in the public sector, by strengthening the public insurance schemes in a traditional supply driven public healthcare sector.

Secondly, we are creating a transparent process for setting priorities for a health benefit plan between the national level and the provinces. These priorities will be based on clinical effectiveness, cost effectiveness, feasibility, budget impact, opportunity, and social preferences. The package should eventually converge towards the health benefit plan of social security. In this regard, the imminent launch of a federal agency for health technology assessment will help set objectives and transparent and explicit criteria to define the health benefit plan across the different health sectors.

Thirdly, we aim to reduce disparities in effective coverage. Health disparities are, in part, a consequence of the fragmentation of resource pools and poor redistribution mechanisms. The national average infant death rate, for example, is 9.7 per 1000 of the population. But there is a twofold difference between poor and rich provinces.6 The maternal death rate has a national average of 3.4 per 10 000 of the population and an eightfold difference between poor and rich provinces. Once we have reached a consensus on which conditions should be included as priority health problems, we can set clinical care pathways with indicators and quality targets across all sectors.

Finally, we are building a primary care oriented healthcare system. Argentina has a hospital centred model, which is poorly focused on primary care. There is strong evidence to support the positive effects of primary healthcare on improving health quality and outcomes.7 Our plan, inspired by Brazil’s family health strategy, is based on identifying the population served in each primary care catchment area and assigning a defined population to core family health teams.8 The process will be leveraged through specific financial and non-financial incentives for population empanelment, achieving quality targets, and enforcing adequate referrals through local and regional integrated networks of healthcare.

Although Argentina has achieved nominal UHC, it still needs to work on achieving effective UHC. This milestone is one of the current government’s national priorities. Our ultimate goal is to provide actual rather than aspirational UHC, improving not only health outcomes, but also its distribution among different groups, thereby ensuring better quality healthcare and equity for every Argentinian.

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Investing in community health workers accelerates universal health coverage

Wilhelmina Jallah and colleagues discuss Liberia’s successful community health assistant programme

Illness is universal, access to healthcare is not. The 71st World Health Assembly will be the first since the World Bank and World Health Organization released findings showing that over half of the world’s 7.3 billion people, including a billion in remote rural communities, lack access to essential health services. These include prenatal care, vaccinations, and malaria treatment. Compounding this crisis is a massive shortage of healthcare workers, which is forecast to grow to 18 million by 2030.

Investing in community health workers, alongside more nurses and doctors, can help close this gap. Expanding the coverage of evidence-based healthcare interventions through community health workers in the 73 countries with 97% of the world’s preventable maternal and child deaths could save at least 2.5 million lives each year. But community health worker programmes vary widely in quality. Many don’t reach full potential because they lack proper investment—especially payment. The majority of community health workers are either volunteers who receive no pay or semi-compensated cadres.

We have seen this first-hand. Approximately 60% of rural Liberians lack access to healthcare or live more than 5 km (one hour’s walk) from the nearest clinic. In response, Liberia’s ministry of health initially trained a national cadre of community health volunteers. But, because they were unpaid and under supported, many dropped out or were ineffective in practice. Data showed very low coverage rates of essential health services. In one study, the proportion of children in rural areas receiving treatment for acute respiratory infection remained at 6.6%. This inequality places us all at risk. The lack of paid, well-supported community health workers helped fuel the spread of the 2014-16 Ebola epidemic from rural communities into cities, claiming thousands of lives.

In 2015, as the Ebola epidemic was brought under control, we enacted bold reforms. In addition to keeping primary healthcare free of charge, Liberia’s health ministry revised its National Community Health Services Policy. We decided that community health workers should be paid and that they should be managed by clinic-based supervisors, such as nurses. We decided to increase the numbers of community health workers in “last mile” communities more than 5 km away from a clinic and that they should be trained more comprehensively in evidence-based services. Finally, we strengthened the systems supporting them, including the supply chain, logistics, and health information.

In July 2016, Liberia’s ministry of health led a coalition of non-governmental organisations and donors to launch the National Community Health Assistant Programme. That coalition consisted of organisations including the International Rescue Committee, Last Mile Health, Partners in Health, Plan International, the Clinton Health Access Initiative, and funding partners including USAID, Unicef, the Global Financing Facility, the Global Fund for AIDS, Tuberculosis, and Malaria, and leading philanthropists.

We have seen remarkable progress. As of March 2018, Liberia has hired, trained, and equipped nearly 3000 community health assistants and over 300 supervisors (primarily nurses) across 13 of 15 counties—reaching 70% of the goal. These health workers have carried out over 340 000 home visits; treated over 61 000 childhood cases of pneumonia, malaria, or diarrhoea; screened nearly 75 000 children for malnutrition; and supported 30 000 pregnancy visits. They’ve also identified over 1700 potential infectious disease trigger events. At our 2017 national health conference, multiple counties reported increases in children receiving treatment for malaria, pneumonia, or diarrhoea of over 50%, and facility based deliveries in one remote district increased from 55% to 84%.

We continue to optimise the programme by focusing on quality. We are developing a national performance management system called the Implementation Fidelity Initiative (IFI). This is part of the global Integrating Community Health Programme led by USAID, Unicef, and the Bill and Melinda Gates Foundation, and it monitors the strengths and weaknesses of the community health assistant programme.

The IFI focuses on key metrics such as timeliness of community health assistant payments, restocking of supplies, quality of clinical supervision, and community health assistant competency. Each quarter, partners convene to review these data, translating new insights into quality improvement activities. The IFI system improves accountability and adaptability, helping to maximise return on investment in the programme.

Paying and investing in community health workers isn’t just the right thing to do; it’s the smart thing to do to accelerate universal health coverage. Liberia’s community health worker policy reforms echo successful experiences in Bangladesh, Brazil, Ethiopia, and Rwanda, among others. More countries should adopt similar reforms. Together, we can realise the health-for-all vision articulated in the Declaration of Alma Ata 40 years ago. No one has to be left behind, if we’re willing to go as far as it takes.

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Will artificial intelligence help universalise healthcare?

Satchit Balsari explains how artificial intelligence has the potential to deliver healthcare to the billions of people who currently lack access.

Health and wellness centres are opening across India—soon there will be 150,000 of them. As part of the government of India’s ambitious goal to extend insurance coverage to 500 million citizens, thousands of rural and urban clinics are being transformed. I visited one such clinic in July, not far from Bengaluru, India’s IT capital. We were greeted by freshly painted walls covered with symbols depicting various services offered at the clinic. The telemedicine screen in one such symbol hinted at the central role that digital services will play. The “mid-level healthcare provider” staffing the clinic, was a member of a new cadre of non-physician providers, continuing India’s long tradition of successfully shifting the delivery of basic care to community health workers.

This combination of task shifting and technology is a recognisable sign of primary healthcare delivery anywhere in the global south. Providers at such clinics across Asia and Africa continue to see untenable numbers of patients, with each interaction lasting no more than a few minutes. This fleeting visit, sometimes at the cost of a day’s wage, is the patient’s only hope of being correctly screened, receiving a diagnosis or treatment, or being referred. The success of universal health coverage depends on the optimisation of care in these interactions.

Frontline providers are faced with state mandated data entry requirements, using only tablet computers and few other resources at their disposal. Despite the growth of point-of-care devices and teleconsulting services, few governments have managed to test and successfully integrate portable technologies into longstanding clinical pathways. Even a reliable list of current diagnoses, drugs, and laboratory results—information that most clinicians would consider very basic—is seldom available. That most patients and physicians, in most countries, cannot access basic clinical data collated from disparate sources is remarkable. With limited time, and even less information, practitioners are left prescribing placebo combinations of anti-inflammatory, analgesics, and antibiotics in lieu of meaningful care.

Virtual assistants, predictive algorithms, customised care plans, and home based nudges (interventions that change behaviour), all powered by artificial intelligence (AI), could offer a solution for delivering care to those with little to no access to healthcare. But for this vision to be rolled out globally—to reach the billions of people who do not have the most basic access to care—we need more than Silicon Valley hubs and Wall Street speculation.

Deep neural networks—the complex, multilayered, self teaching models that are expected to eventually aid and nudge physicians—will only be as good as the data that power them. The more structured and labelled the data, the easier it is for machines to ingest them. The most successful examples of AI being integrated into healthcare are in areas where the data are the cleanest, such as radiology images or pathology slides. Algorithms attempting to predict survival, re-admission to hospital, or risks for infections are messier and highly dependent on the quality of data (and their accompanying biases) captured in electronic health records.

Clinicians are familiar with the problems of these context laden algorithms. Clinical parameters considered “normal” in European men should not have driven clinical decision making around the world, as they did for as many decades. Similarly, successful clinical trials often cannot be replicated when validation is attempted in entirely different populations. Services whose deep neural networks have been powered by data rich populations might not be applicable or useable in low and middle income settings. Many applications might transcend population heterogeneity, but those that will be used to decide, deny, or delay care must have contextual intelligence to be relevant and fair. Where technology is most needed, the data do not exist.

A drive to promote digitisation over other aspects of care will, however, do harm. Low resource settings can hardly afford to burden overstretched providers with the responsibility of feeding algorithms. The clinician as data entry operator ought to become as anachronistic as the stenographer. Companies have begun to leverage voice recognition technologies, natural language processing, and deep neural networks to extract texts from physician-patient interactions to populate electronic health records. Making these advances accessible in local languages and dialects, to liberate hundreds of thousands of healthcare workers from their keyboards, might be one of the most important contributions that AI can make towards expanding access.

We need a thoughtful reconnaissance in the global south, of what problems need solving (first), what data are needed to solve them, and how best technology can be leveraged to collect these data. Clinicians should be at the forefront of this rapidly changing landscape steering developers and investors towards solving the most basic yet pressing challenges of care delivery today.

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