institute of development studies

Pandemic preparedness for the real world

Why we must invest in equitable, ethical and effective approaches to help prepare for the next pandemic

March 2023

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Front cover image: People in need from the Dharavi informal settlement in Mumbai, India queue to collect government-supplied free meals during the second Covid-19 lockdown.
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Institute of Development Studies
Library Road, Brighton, BN1 9RE, UK

www.ids.ac.uk

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About the authors

Annie Wilkinson is an anthropologist and health systems researcher and co-lead of the **Health and Nutrition cluster** at the Institute of Development Studies (IDS). Annie conducts interdisciplinary, participatory and applied research on health and has expertise in: zoonotic disease; epidemic preparedness and control; drug resistance; and urban health. She has worked extensively in West Africa, especially Sierra Leone, and within emergency humanitarian and epidemic response.

Hayley MacGregor trained as a medical doctor in South Africa before completing a PhD in social anthropology. Her current research interests include emerging infectious disease and pandemic preparedness; the anthropology of antimicrobial resistance; and concepts of care and chronicity in responses to lifelong illness, principally HIV. She co-leads the **Social Science in Humanitarian Action Platform (SSHAP)** hosted at IDS, and a Wellcome-funded collaborative project on pandemic preparedness.

Ian Scoones was co-director of the **ESRC STEPS Centre** at the University of Sussex and is Principal Investigator of the European Research Council (ERC) Advanced Grant project **PASTRES** (Pastoralism, Uncertainty and Resilience: Global Lessons From the Margins).

Megan Schmidt-Sane is a medical anthropologist with interdisciplinary training and experience in public health, working with the Health and Nutrition cluster at IDS. Her work focuses on political economy of health, urban health, and overlapping themes of gender, generation, and inequalities. She uses participatory, community-led, and policy-engaged approaches in her research.

Melissa Leach is the Director of IDS. She is an anthropologist by training and has led numerous interdisciplinary, policy-engaged research programmes in Africa and beyond, while engaging with scientific, policy and public debates around global health, sustainability and development. She co-leads SSHAP hosted at IDS, and a Wellcome-funded collaborative project on pandemic preparedness.

Peter Taylor is Director of Research at IDS. He also leads the **Covid Collective Research Platform**, which has supported this publication. Previously he was Director, Strategic Development, at the International Development Research Centre (IDRC), Ottawa, Canada where he was responsible for leading IDRC's strategic planning processes, as well as leading the **Think Tank Initiative** which supported organisational strengthening of policy research institutions in Africa, Asia and Latin America. He has research interests in participatory methods, organisational learning and development, and agricultural education and rural development.

Santiago Ripoll is a social anthropologist with skills and experience in social science analysis, participatory and anthropological methods, in the fields of public health emergencies and food systems. His academic research focuses on the clashes (or alignments) that occur between framings by different social actors (including policymakers) and the realities of people's everyday lives, highlighting them either through participatory or ethnographic research. He has specialised in 'translating' different forms of social science evidence (especially that which emerges from anthropological insights) to different audiences to make it more applicable and operational.

Shandana Khan Mohmand leads the **Governance cluster** and the **Pakistan Hub** at IDS. She is a social scientist whose main area of research is inequality, inclusive politics, and the political economy of public policy and service delivery, especially in fragile and crises-affected contexts. Her research interests also include local governance, women's political participation, institutional trust, and informal institutions. She has contributed to both policy and social science research in South Asia, the Western Balkans, and sub-Saharan Africa.

Syed Abbas is a public health researcher whose main area of expertise is the politics of multisector 'One Health' collaborations around zoonotic diseases. He is currently engaged in conducting research on decreasing health risks from poultry farming in the **One Health Poultry Hub** and in advising the World Health Organization on strengthening implementation of multisector partnerships around zoonotic influenza.

Tabitha Hrynick is a multidisciplinary social science researcher based at IDS where she currently works with SSHAP to provide rapid social science insight for health shocks and other emergencies. She is particularly interested in bridging crisis response with longer-term change to address structural inequalities, and achieve social justice.

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Executive summary

A city worker sprays the streets in the deserted city of Istanbul, Turkey during the Covid-19 lockdown.

PHOTO: © BRADLEY SECKER/PANOS PICTURES

The cost of the Covid-19 pandemic remains unknown. Lives directly lost to the disease continue to mount, while related health, livelihood and wellbeing impacts are still being felt, and the wider ramifications across society, politics and the economy are yet to fully materialise.

What is known about these costs though, is that they have been unequally distributed both within and between countries. Preparedness plans proved inadequate in many settings – especially when it came to protecting those most vulnerable, including those marginalised by geography, poverty, or exclusion along the lines of religion, ethnicity or gender.

The top-down, surge-style, biomedically dominated and technologically driven preparedness approach that has dominated global health thinking and which was propelled into action with Covid-19 was found wanting not only on the grounds of effectiveness, but also of social justice. This presents both a challenge and an opportunity for a convergence of the preparedness and development agendas.

Drawing on a growing body of social science evidence, this report contends that securing health in the face of today's uncertain disease threats in often unpredictable settings means making social, economic and political priorities as core to the preparedness agenda as biological and technological ones.

We present here a framework for a vision of pandemic preparedness for the real world – one that accepts that context is paramount, embraces inclusivity and justice, shifts power centres and rejects simplistic, one-size-fits-all solutions.

We argue for fresh approaches across **five priority action areas** for pandemic preparedness:

Professionals Identifying, supporting and rewarding key people in critical infrastructures introduces much-needed reliability into uncertain and complex contexts. A focus on nurturing reliability prioritises building the capacities and connections of individuals whose knowledge and understanding of the systems within which they work are critical in a health emergency. It sees pandemic programming becoming an ongoing process and as much about horizon scanning, relationship building and empowering people as it is about ways and means to deal with crises.

Knowledge Creating opportunities and building mechanisms to account for diverse knowledge, expertise and evidence facilitates preparedness which is better adapted and more responsive to local contexts and acceptable to communities. Such an inclusive approach welcomes fresh insights into where, how and with what implications disease outbreaks might emerge and unfold to complement bioscientific understanding. It enables the emotional and affective dimensions of pandemic impacts to take their place alongside

the biomedical in preparedness considerations. It means embracing new disciplinary evidence, from social and environmental sciences and humanities; as well as understandings, perspectives and knowledge from a range of stakeholders, including those with vital informal and indigenous knowledge.

Resilience **Redressing the inequitable underlying conditions that leave people and communities vulnerable to crises in the first place is the best route to ensuring they can withstand shocks.** Effective pandemic preparedness builds resilience by looking beyond the impact of single health events to consider long-term structural changes to the systems that leave people impoverished, disenfranchised, marginalised or otherwise susceptible. It supports equitable access to quality health care, education, housing, safety, and economic and livelihood opportunities which benefit communities both within and outside pandemic situations. Such resilience can only be fully enabled and promoted when led by local people who know their communities' strengths, priorities and challenges best.

Institutions **Addressing the crisis of confidence in state institutions is part and parcel of pandemic preparedness.** Politics plays out in pandemic situations in a variety of ways, from reinforcing blame narratives to legitimising misinformation to excluding marginalised groups from health interventions. Working to renew trust in politics and state institutions and rebuild state–citizen relationships is therefore an essential component of preparedness. Decentralising decision-making and ensuring it is both accountable and inclusive at a local level is one way to do this, with benefits for pandemic preparedness as well as long-term institutional equity and social justice.

Ethics **Policymaking and decision-taking for pandemics necessarily embrace a wider set of issues than accounted for by conventional bioethics and its focus on individual rights.** For social justice and equity, a new 'epidemic ethics' must account for a wide range of context-specific societal issues, in particular inequities in power and resource allocation at local, national and global levels. Decolonising pandemic preparedness demands that questions be asked about where investments are made and why. Ethical issues arise in every aspect and at every level of pandemic preparedness. Investment into research and broader debate about epidemic ethics can further a socially just and equitable preparedness to benefit all people.

Introduction

A resident of Klong Toei community in Bangkok, Thailand receives a Sinovac vaccine at a government-run vaccine centre.

PHOTO: © ADAM DEAN/PANOS PICTURES

The world was unprepared for Covid-19. Countries such as the US and UK, top-scorers in globally recognised rankings for preparedness, fared among the worst on infection and death rates for their citizens (Bollyky *et al.* 2022). The uneven distribution of Covid-19 vaccines was glaring. The pandemic wreaked havoc not only with people's health, but also with livelihoods, social cohesion and political stability in ways that will play out for years to come.

Factors contributing to this failure in pandemic preparedness have been identified as a lack of prioritisation and investment, failure to implement previous recommendations fully, weaknesses in global health governance and poor political leadership, all exacerbated by ill-equipped health systems (IPPPR 2021). Consequently, post-Covid-19 recommendations and initiatives are now focusing on a familiar set of issues: improved threat detection and surveillance, data sharing, health system strengthening, research and development for diagnostics, vaccines and therapeutics, global governance and coordination, political leadership and financing (WHO 2021).

However, these explanations and proposed solutions are only part of the story.

Epidemics, the evidence increasingly reveals, are as much social as they are biological. Complex political dynamics play out in outbreak situations and factors such as levels of public trust can be critical in determining pandemic outcomes (Bollyky *et al.* 2022).

Complex political dynamics play out in outbreak situations and factors such as levels of public trust can be critical in determining pandemic outcomes.

To some extent this has already been recognised. Major actors, such as the Global Preparedness Monitoring Board, the World Health Organization (WHO) and the Independent Panel for Pandemic Preparedness and Response (IPPPR) now include issues of equity and trust in their recommendations. But the devil is in the detail and the detail is lacking; vague notions of improved risk communication and community engagement fail to address more fundamental relationships between states and their citizens and the factors underpinning people's vulnerability to crises.

With hindsight we can see that the contours of the crisis were many years in the making: the Covid-19 virus thrived in long-deprived communities; on entrenched inequalities and deepening political polarisation; on precarious work and welfare systems; and in unhealthy populations. Such issues are structural and related to long-term development trends. However, these realities are not immutable.

We offer evidence showing how prevailing biomedically dominated approaches to preparedness fail to deal adequately with the increasing risks of disease emergence and spread, and the related vulnerabilities and crises in social, political, environmental and economic systems. We contend that the key to securing health in the face of uncertain disease threats is to shift thinking and offer a fresh framework for preparedness drawing on the full range of real-world evidence – biomedical of course, but also social, economic and political. If the mistakes of the Covid-19 pandemic are not to be repeated, social, economic and political issues must be as core to the pandemic preparedness agenda as biological ones.

Accounting for unpredictability

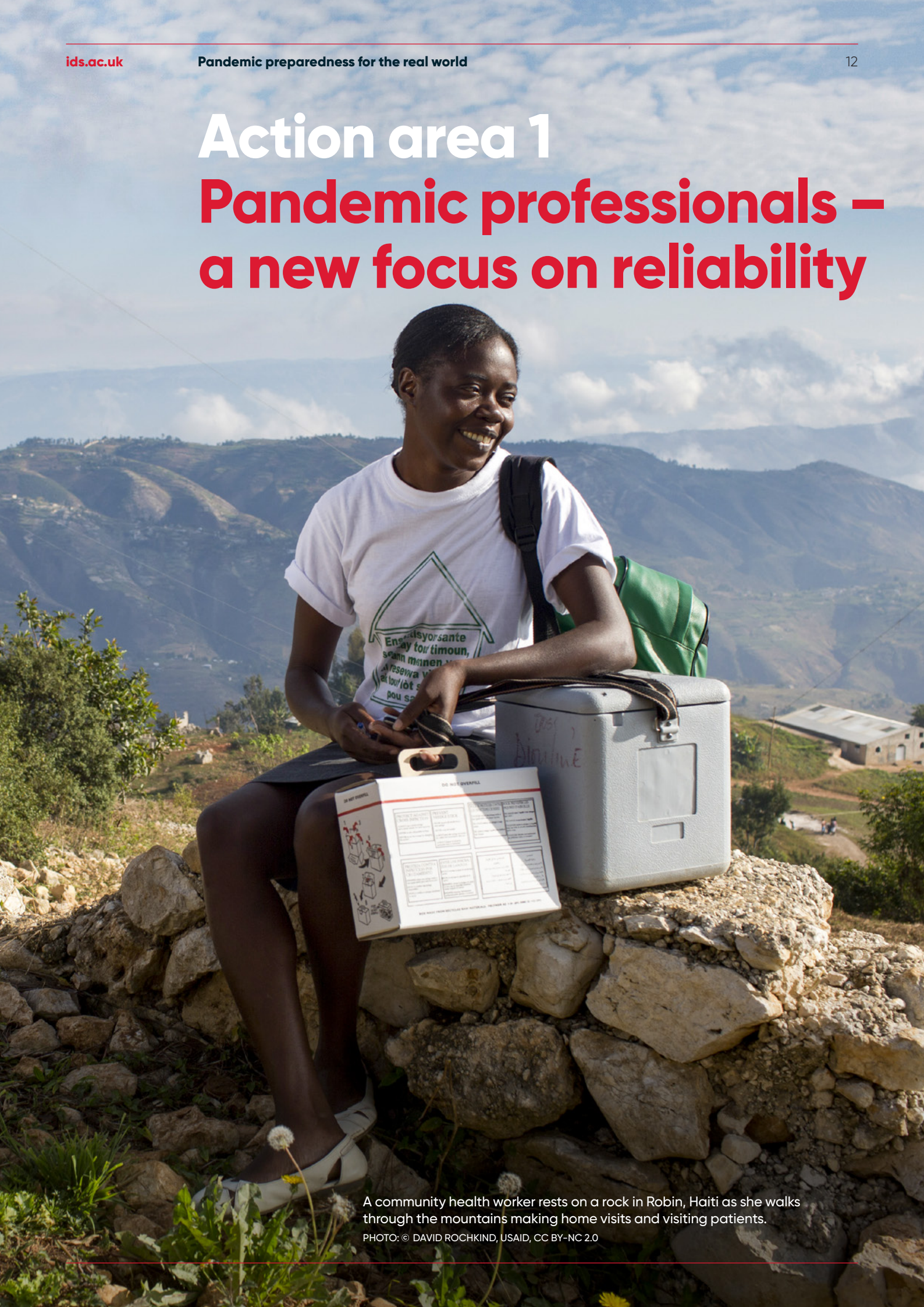
So, what does shifting the thinking on preparedness mean in practice?

Fundamentally, it means taking account of the unpredictable world in which we live – and asking: Preparedness of what? For what and for whom? And by whom? Outbreaks are often framed as involving a sequence of distinct, even discrete, events: emergence, detection, response, recovery – with programmes and funding for preparedness targeting these in supposedly separate phases of an emergency cycle that includes preparedness as the precursor to readiness and response. Yet in the real world, preparedness and response are non-linear. Epidemics, and pandemics in particular, are messy. Linear thinking can deepen artificial and unhelpful separations between 'peacetime', 'crisis' and 'recovery', and between 'development' and 'humanitarian' activities.

Preparedness initiatives need to reorientate and be broader in scope. They need to recognise and leverage connections between development patterns, epidemic emergence and impacts, and approaches to foster resilience in the face of radical uncertainty. To do so they must be localised and context dependent, and inclusive of diverse people, perspectives and expertise. An expanded range of actors at multiple levels need to interact and align their goals and activities.

In this report, we present a framework for pandemic preparedness and show how this new vision can be achieved. It focuses on five areas for action in shifting approaches to preparedness in respect of: professionals; knowledge, evidence and data; resilience; institutions; and ethics and justice. We start by examining how reliability in health systems can be built under conditions of uncertainty through new forms of professionalism. We argue that multiple knowledges from diverse sources are essential for pandemic preparedness. Building resilience in advance of future pandemics requires in turn decentralised institutions, centred on strengthened relationships and trust. A central commitment to ethics and justice is essential and provides a strong cross-cutting theme applicable across the framework.

Action area 1
Pandemic professionals – a new focus on reliability



A community health worker rests on a rock in Robin, Haiti as she walks through the mountains making home visits and visiting patients.

PHOTO: © DAVID ROCHKIND, USAID, CC BY-NC 2.0

Preparedness planning inescapably takes place in a context dominated by uncertainty. No one – not even the best modellers – has a crystal ball when it comes to disease outbreaks.

Conventional bureaucratic and technological approaches to preparedness, such as those adopted by WHO (**see Box 1**) and many national governments, offer neat and appealing solutions. They aim for immediate and effective response to potential health emergencies, such as the coordinated drawing down of stockpiled vaccines or antiviral drugs and the activation of finance mechanisms, such as 'pandemic bonds', to allow for rapid release of funds (Jonas 2019). The prospect of powerful vaccine platforms that can be rapidly customised to emergent pathogens, or a 'silver bullet' solution, is frequently a goal.

Box 1: WHO Strategic Framework for Emergency Preparedness

The **WHO Strategic Framework for Emergency Preparedness** sets out an ambitious demand for a 'whole of government and whole of society approach', investing in governance arrangements, capacity building, and financial and logistical resources for efficient and effective delivery. A preparedness cycle is envisaged that 'starts from assessing risks and capacity, and moves through establishing coordinating mechanisms, planning, financing and implementing, to evaluating and taking corrective action' (WHO 2017: ix).

Such an approach assumes knowledge about risks (in which likelihoods of particular outcomes can be assessed) and a set of capacities across a wide range of state functions that work to manage risks, with sufficient finance. The framework emphasises integrating systems across government and between different hazards, and advocates a 'One Health' approach.

But will such surge-style solutions work in contexts rife with uncertainty – including but also beyond the uncertainty of the disease outbreak itself? In such contexts, health services are weak, livelihoods vulnerable and states distrusted. Ambiguities often flourish, different groups prioritise different aspects of an outbreak and its impacts, and there is a proliferation of 'unknown unknowns' about how an outbreak will unfold. Integration across sectors is limited, capacities are weak and advance finance for emergencies almost non-existent.

Such turbulent social, political and ecological contexts are, of course, the situation in most of the real world.

Over-confidence and lack of attention to context can be dangerous. Abandoning the mirage of control may be unsettling, but it is necessary if reliability in the face of uncertainty, complexity and limited resources is to be achieved.

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Phased programming

In its place, a new focus on reliability would acknowledge that health systems are complex and simple solutions rarely work (Holmes *et al.* 2017; Chapman 2004). It would move us beyond bureaucratic command-and-control approaches and planning for specific sets of preselected risk scenarios. It would emphasise that building the capacities of the individuals who must manage uncertainty, avoid dangers and horizon-scan for potential hazards is at least as important as attention to safety protocols, emergency drills and the like. During the Covid-19 pandemic much effort was expended on centralised management and control-oriented approaches based on predictive models, top-down plans and privatised supply. Yet reliability on the ground frequently emerged in different ways (**see Box 2**).

Box 2: The 'fantasy' of command and control

So there is often talk about a unified command and control system. Yet that is fantasy. In actual situations you have to negotiate the right to lead, whether in crisis or normal business. So in real practice you need to be good at leading amidst complexity. In all the work I have done you have to navigate and negotiate between 50 or 60 actors. You can't do it through protocols. You think you can, so you spend time creating protocols, but in practice someone gets appointed as, e.g., the district Ebola officer and they spend their whole time negotiating. It is not about orders. It is about relationships. People will disobey orders, but if relationships have been invested in in peacetime – if there is a shared set of values and if there is a tradition of sharing information, all developed in peacetime – then you have a chance.

– Dr David Nabarro, WHO Special Envoy on Covid-19

Studies from diverse settings show that reliability in real time emerges through the work of so-called 'high reliability professionals', for example individuals embedded in water and energy supply systems. They must create networks in response to an emergency, have a good sense of the complex system they sit within and, critically, be able to respond in real time through continuous adjustments, negotiations, refinements and adaptations (Roe and Schulman 2022). In short, they must manage 'mess', engage with complexity and embrace uncertainty, while avoiding ignorance and danger.

High reliability professionals frequently have to navigate connections across a highly fractured system, and while networks may emerge through formal, professional connections, informal interactions can be more enduring (Tasker and Scoones 2022). During the Covid-19 pandemic, health workers emerged as high reliability professionals needed for the moment, and it was through their interactions with local government officials, traditional leaders, religious groups and others that communities were able to respond in ways that made sense in their particular social, cultural and political context (**see Box 3**).

While high reliability professionals exist, they may not be recognised or supported. The hollowing out of state functions, outsourcing of provision and limitations on regulation have compromised capacities for generating reliability in many settings. Recognising and supporting the critical roles these individuals play would support greater adaptability, flexibility and equity in pandemic preparedness, and in development more broadly.

Box 3: Resilience through a key individual: a nurse's story

In the far southeast of rural Zimbabwe, a nurse with experience of big-city hospital work took on the Covid-19 response role for his local hospital when local doctors admitted they were both inexperienced and fearful. Linking with local leaders, teachers, church members and others, the nurse had to scan the horizon and understand the local trajectory of the pandemic, as well as mobilise responses within the community as new Covid-19 waves emerged. Different sources of knowledge were deployed, including formal technical knowledge from Ministry of Health training and informal knowledges from local healers and health practitioners innovating around treatments. External support came in the form of vaccines, for example, but for the most part the locals were on their own working with frontline professionals in formal institutions. Crucially, the nurse was given latitude to operate by the hospital authorities (Bwerinofa *et al.* 2022a).

Box 4: Six ways to build networks of high reliability professionals

1. **Identify individuals** Both within and outside health systems.
2. **Identify networks** Connect them across state, private sector, voluntary agency and personal/family spheres.
3. **Stay ahead** Horizon scan and develop scenarios regularly and with use of multiple information sources.
4. **Reinforce networks** Hold regular exercises and simulations between pandemic periods.
5. **Recognise and reward practices** Break down barriers across sectors and hierarchies to facilitate iterative, rapid decision-making.
6. **Support networks in emergency situations** Enable real-time response with decentralised contingency funds to be accessed flexibly and in a timely way (even in advance of an 'official' pandemic being declared).

This more flexible approach to programming and professionals requires, in turn, different approaches to what, and whose, knowledge is recognised, rewarded and mobilised in pandemic preparedness.

Action area 2
Knowledge, evidence and data – embracing uncertainty and diversity

A district malaria surveillance officer visits the home of a family in Zanzibar, Tanzania to re-test and treat them.

'Follow the science' became a mantra during the Covid-19 response. Scientific evidence and data – and capabilities to produce and use them – are rightly seen as central to future pandemic preparedness. But what, and whose, science and knowledge are needed?

In conventional preparedness approaches the biosciences dominate, often linked to narrow risk-based framings. Thus surveillance and the tracking of new and re-emerging diseases rely on 'virus-hunting', virology and microbiology, and on analysis of health data and records. Preparedness planning relies on predictive modelling, informed by epidemiological and other quantitative data which feed into stylised, linear and technocratic scenario and training exercises (**see Box 5**). Vaccine and pharmaceutical preparedness strategies are dominated by biomedical sciences and biotechnology.

Box 5: How influenza models misinformed Covid-19 preparedness in the UK

Covid-19 became 'the big one' when many expected the next major pandemic to be influenza. In 2016 in the UK, planners invested vast amounts in a major, secret exercise to plan for a pandemic flu outbreak. Operation Cygnus involved hundreds of civil servants and health staff in scenario exercises informed by data and modelling framed according to experience with influenza (Pollock and Coles 2021). As the Covid-19 virus spread across the UK and the world, the basic framing and associated modelling for an outbreak response were found to be misplaced.

Even once epidemiological models were better attuned to Covid-19, their assumptions and the plans based on them were confounded as the pandemic unfolded in unexpected ways. For example, class, race, age, occupation and other social dimensions were found to shape people's ability or willingness to carry out physical distancing, and unpredictable new variants and 'long Covid' effects emerged. Planners were ill-prepared to deal with this wider range of uncertainties, and tensions and ambiguities emerged between public health priorities and social and economic goals.

However, pandemics unfold in uncertain ways that vary greatly between places and populations, affected by people's socially shaped responses to pharmaceutical and other interventions. Preparing for this means making context central, accounting for specific social, political and cultural dimensions. It means building capabilities to mobilise a far greater diversity of knowledge and evidence than currently is widely recognised, bringing in the social sciences and humanities alongside the natural sciences, and including the informal expertise of people and practitioners on pandemic frontlines (Leach *et al.* 2022).

Biomedical sciences and health data (including the digital) currently dominate preparedness activities, with accredited experts and specialists prioritised as members of planning and advisory committees. Social science expertise is typically confined to behavioural science that focuses on 'nudging' the public to accept biomedical or public health responses, or to formulate risk communication strategies and mitigate the spread of false or misleading information ('infodemics').

While each of these forms of knowledge has value, together they can reproduce generalised, technocratic and often colonial assumptions. The voices and perspectives of local people, especially people who are poor and marginalised, are ignored. The result is that vital forms of knowledge, data and expertise can be squeezed out – and the same-old actions and development interventions are followed by the same-old unsatisfactory results. Preparing to address the full range of uncertainties in pandemics requires the accommodation of a wider diversity of knowledges.

Shifting power dimensions

A further need is to broaden the narrow focus on preparedness for disease as a set of physical and health events. Preparedness for emotional and affective dimensions, for the social and political dynamics that affect disease transmission and for a wider range of impacts on livelihoods, economy and society need to be brought in. Such a shift would mean acknowledging – and shifting – the power dimensions in relation to knowledge and whose knowledge counts. This would allow different forms of knowledge, evidence and experience to emerge, and to be more integrated into and engaged with pandemic preparedness (**see Box 6**).

Box 6: Community-led innovation: bottom-up knowledge in Mathare, Nairobi

Research into community-led and collaborative responses to Covid-19 in Nairobi's informal settlements (Sverdlik *et al.* 2022) showed that the pandemic was experienced less as a health crisis and more in terms of its extreme impacts on food insecurity, sexual- and gender-based violence, and police brutality. The impact of top-down Covid-19 measures on informal jobs, commodity prices and limited social protections deepened the marginalisation of the poorest residents.

Grass-roots groups collaborated and communities mobilised to address Covid-19 alongside other risks by developing arts-based strategies, mutual care and bottom-up knowledge generation (Wangui *et al.* 2022). This included spatial and household data identifying vulnerabilities and possible isolation centres. Arts-based strategies included murals and videos from local young people with messages such as 'Corona is real', written in Kiswahili and Sheng, the languages most used in urban areas. This helped counter disinformation and mistrust in information from authorities.

Such an inclusive approach to pandemic preparedness should account for diversity in many areas. In disciplines, it should see social science and humanities, as well as ecological and environmental sciences, offering vital insights into where, how and with what implications disease outbreaks might emerge and unfold (Schmidt-Sane *et al.* 2022).

Further, approaches need to go beyond multidisciplinarity and interdisciplinarity to be **transdisciplinary**, including the knowledge and experience of practitioners and societal stakeholders. Informal expertise should be embraced, including local and indigenous knowledges which offer crucial perspectives, as well as valuable experiential expertise on living with and managing multiple intersecting crises (**see Box 7**).

Box 7: Engaging with Brazil's most vulnerable indigenous groups

Covid Collective partner **Saúde Sem Limites (SSL)** in Brazil has delivered a new **Platform for Community-Based Monitoring of the Quality of Indigenous Health Care**, a community-based monitoring platform to inform health systems stakeholders. It makes innovative use of technology to combine qualitative, quantitative and participatory research data in Portuguese and indigenous languages, using audio, video and photographic resources on a geo-referenced platform.

The approach involved indigenous peoples sharing their Covid-19 experiences and views on improving health services, using their own language and cultural perspectives. It emphasised constructive engagement and the value of social accountability and intercultural communication for delivering stated government goals – and is convincing policymakers of the need for a differentiated approach to health service delivery for recently contacted indigenous peoples.

Qualitative, participatory, and creative and arts-based data and evidence collection can elevate expertise based on lived experience. Explicit recognition of how people's background, identity and experience affect their knowledge ('positionality') is needed.

Context, as ever, is key, and local and national conditions and histories, and the specific ways that disease dynamics might play out on the ground, should be considered in addition to generalised or globalised risks and patterns (Rhodes *et al.* 2020).

Above all, embracing diversity requires reflexivity and humility among experts and their institutions as they may need to adjust and undo or re-make assumptions, in particular relating to power relations. These features of science and knowledge for pandemic preparedness may be challenging but they have much in common with the 'post-normal' science now recognised as required to deal with complex problems in other domains.

Box 8: Moving on from one-size-fits-all approaches

The **Social Science in Humanitarian Action Platform (SSHAP)** synthesises contextualised social science and local knowledge from researchers and communities. Its accessible briefings and forms of dialogue and training bring such knowledge to busy planners and practitioners, helping to inform more attuned, sensitive and effective approaches to pandemic preparedness and response. During the Covid-19 pandemic this included adjusting public health measures to the conditions in low-income settlements, engaging with indigenous health practices, shaping strategies to address misinformation and shaping socially sensitive ways to address vaccine anxieties in diverse settings across Africa, Asia, Latin America and the UK. Having such platforms available in advance, to be drawn on as needed, is a valuable part of pandemic preparedness.

Box 9: Four investment opportunities for inclusive preparedness

1. **Inclusive surveillance** Combining health, social and ecological knowledge, and grounded in community-based and participatory approaches, triangulated with disease signals.
2. **Deliberative, dynamic preparedness exercises** At local, national, regional or global levels, relating to a wide range of dimensions of a potential pandemic and its various impacts and incorporating diverse forms of knowledge – aiming to include those who directly experience pandemic challenges in shaping sustainable and contextually sensitive approaches.
3. **Reconfigured science advice** At national, regional and global levels, to include a wider range of disciplines and kinds of knowledge, engaging with local mechanisms such as citizens' deliberative panels and incorporating mechanisms for reflection.
4. **Knowledge platforms** To include research knowledge and capacities across multiple disciplines and interdisciplinary fields, and associated training in social and contextualised knowledge.

Inclusive approaches to knowledge, evidence and experience are also key to widening understandings of what is required to strengthen community-level resilience in sustainable and socially just ways.

Action area 3
Meaningful resilience – moving beyond the crisis lens

Food bank workers sort through donations at Rugeley Community Church, Staffordshire, United Kingdom.
PHOTO: © BEN ROBERTS/PANOS PICTURES

Resilience programming has become an increasingly common element of humanitarian response. However, ways of understanding and 'building' resilience have tended to be narrow in scope, with resilience understood as a characteristic of a person, community or system which can be built, observed and measured. Conventional approaches also focus on 'bouncing back' from an emergency to a status quo, which may itself have been characterised by inequality and vulnerability.

Another pitfall is the common assumption that externally led structures and systems are needed to keep communities afloat during crises, to support recovery and build preparedness. However, this can result in local organising being over-ridden or damaged. The flip side of this may be just as harmful, with community coping strategies romanticised as 'resilient', when in reality they may be unsustainably depleting local resources as they become overwhelmed. The perception that communities are managing well enough on their own can lead to formal responders taking a hands-off approach to the point of 'passing the buck' when only relying on 'community resilience' (Bwerinofa *et al.* 2022b).

Long-term structural change

Vulnerability flows from inequality, chronic poverty, unsustainable economic practices, damaged ecosystems and histories of marginalisation and structural violence. It is not just a feature of emergencies and crises. Further, social difference and power relations ensure some population groups are far worse off than others.

Meaningful resilience is facilitated when these chronic conditions and power imbalances are addressed, and people and communities – especially those most vulnerable – are supported by equitable access to quality health care, education, housing, safety, and economic and livelihood opportunities (Schmidt-Sane, Niederberger and Hrynick 2021). This makes them less vulnerable to crises in the first place, and more capable of mobilising resources when disasters strike.

Calls to 'build back better' following Covid-19 (and previous crises) have amounted mostly to rhetoric. But reframing resilience beyond the individual or community level, and beyond crises, opens new possibilities for strengthening preparedness. This requires resilience – or its absence – to be recognised as resulting from broader social, economic and political structures, processes and relationships. Such a reframing thus focuses on long-term structural change across sectors, systems and levels.

Critically, a reimagined version of resilience building would be led or co-led by people, networks and organisations on the ground. They know their communities' strengths, priorities and challenges best. For example, resilience in the face of uncertainty and disease emergence means people and communities may need to 'navigate sideways' rather than 'bounce back' to where they were before. Communities themselves are best placed to see where such new pathways arise. Policymakers can, through preparedness efforts, support and facilitate the manoeuvres needed to make it happen (**see Box 10**).

Box 10: Scaling up for food security

Before the Covid-19 pandemic, Fareshare Sussex, a distributor of surplus food, regularly delivered to over 160 smaller local community organisations in the city of Brighton and Hove, UK. It had extensive local knowledge and networks. During the pandemic it received support from the UK government's Department for Environment, Food & Rural Affairs (DEFRA and Pow 2020), which enabled it to scale up and adapt activities such as food purchasing, as well as innovate its operations and practices to meet spiralling need.

The pandemic also led Fareshare to rethink how best to provide emergency food aid and respond to increasing food insecurity in an emergency, as well as think more broadly about poverty alleviation, climate change, food waste and sustainability in the medium and longer terms.

Box 11: Four activities to enable and promote resilience

1. **Dynamic vulnerability and resilience mapping** To understand differential social vulnerabilities, and existing capacities, strengths and priorities of people and communities to respond to crisis. Mapping should involve communities, civil society organisations and other stakeholders in participatory and inclusive processes and lead to action-oriented agendas with short **and** long-term goals.
2. **Relationship building** Establishing and nurturing sustainable relationships within and between governmental, response, civil society and community organisations and networks, to support swifter, more coordinated emergency responses.
3. **Community organising** Moving beyond conventional community engagement to promote and support collective action rooted in and led by communities, aiming to build solidarity networks.
4. **Investing in health and social systems** Supporting population health and wellbeing as well as responding to disease outbreaks.

So far, we have focused very much on people at an individual or community level, whether determined by profession, religion, ethnicity or other identity. But in the real world, the ability to act and make change is constrained or facilitated by institutions, themselves often determined by centralising forces and shaped by existing power structures.

Action area 4
Institutions – an overhaul for inclusiveness

Forages in Tanzania: making trade-offs. People from different parts of the value chain including local government share lessons and ideas at an 'Innovation Platform' in the district of Lushoto, Tanga region, Tanzania.

Conventional responses to crises are through centralised and siloed interventions. This renders formal institutional responses inflexible, narrow and unable to adapt to different challenges and contexts. The gaps created are often filled by informal institutions, albeit without much-needed support.

The result, especially where state capacity is limited, is often the exclusion of certain groups. Those who are remote or whose ethnicity, religion, gender, sexual orientation, (dis)ability or immigration status sets them apart are among those whose access to all kinds of public services can be affected.

A major challenge then is to understand the differential impact that formal and informal institutions can have on different population groups, both in terms of their nature and in how they function. During the Covid-19 pandemic, we saw variable state performance. Governments that performed well on containing the spread of the virus (often through top-down restrictions and authoritarian and militarised responses), often performed poorly on providing social protection to those who lost their incomes (**see Box 12**).

Box 12: Just another layer of hardship for informal workers in Lahore

In-depth conversations with informal workers in Lahore during the pandemic revealed the hardship that results when loss of income is compounded with a lack of social protection. Informal workers experienced the pandemic as simply one more layer of adversity resulting from their economic and political marginality, and this had an impact on their health-seeking behaviour almost as much as fear of the pandemic or trust in state institutions. A lack of access to economic resources was also found to be deeply intertwined with the inequitable distribution of care work at home, and that it disadvantaged women in both paid and unpaid work.

Politics shape institutional responses to pandemics in several ways, as clearly seen during Covid-19. First, Covid-19 policies became heavily politicised as parties in power were accused of mixing public health decisions with narrow political imperatives. In India, for example, Muslims were blamed by the ruling Bharatiya Janata Party (BJP) for 'spreading' the virus during a gathering. Second, this 'politicisation' fed into increasing polarisation and crises of confidence in governments around the world. For example, in Brazil, divisive discourse in national politics heightened during the pandemic and posed a significant challenge to public confidence in institutions. Third, right-wing governments (for example, in the US under President Trump) subverted recommendations for Covid-19 control by questioning the role of the state and of experts.

Studies of Covid-19 suggest that trust, both institutional and social, can explain a significant proportion of the variation in infection rates and vaccine hesitancy during a pandemic. Countries with greater trust in state institutions, lower corruption and greater trust across groups had lower infection rates and higher rates of vaccine coverage (where this was adequately accessible) (Bollyky *et al.* 2022; Harring, Jagers and Löfgren 2021).

However, trust waxes and wanes, and is influenced by and dependent on many factors. Trust is often relational, meaning people decide when to trust in institutions based on the perceived intentions of institutional actors. In the Covid-19 pandemic, trust responded to government performance, media coverage and to the spread of misinformation. In Germany, restrictive Covid-19 countermeasures, such as lockdowns, were associated with people's **decreased** trust in formal institutions. In South Korea, both institutional and social trust **increased** in response to proactive state responses to the pandemic crisis. In Pakistan, trust had little to do with why informal workers chose to get a vaccine.

> **Local response efforts were successful when built on histories of collectivisation and mobilising.**

The Covid-19 pandemic also revealed that local response efforts, which often filled in the gaps where the state could not intervene, were successful when built on histories of collectivisation and mobilising, for example in urban informal settlements (**see Box 13**). They were also predicated on the availability of physical and social infrastructures, much of which was informal.

Box 13: Adapting responses during a pandemic in Mumbai

In Mumbai's Dharavi informal settlement, the Society for Nutrition, Education and Health Action (SNEHA), a non-governmental organisation, adapted long-standing programmes on women's and children's health to incorporate rapid Covid-19 response activities, including provision of food and prevention information. A pre-pandemic programme on the prevention of violence against women and children, which included community- and hospital-based counselling centres, also responded to the increase in cases of violence during the lockdown.

In other places, a lack of past efforts at the local level and an absence of the state during the pandemic left groups entirely marginalised (**see Box 12**).

Box 14: Three routes to effective and equitable institutional responses

1. **Decentralise decision-making and resources** Empower local authorities to enable contextualised, flexible and timely responses to local disease 'spikes'.
2. **Strengthen the social contract** Accountable and inclusive decision-making builds trust between citizen and state and reduces polarisation.
3. **Address human rights, power inequities and exclusionary politics** Challenge entrenched interests, short-term thinking and policymaking that marginalise population groups.

Creating inclusive state institutions at both the national and local level that are well resourced and have mechanisms for regular cross-sectoral or cross-departmental coordination is essential for enabling an effective and inclusive response to future pandemics. Further, while it is widely acknowledged that there is a crisis of confidence in institutions and leaders, we do not know for certain whether trust plays a pivotal role in whether public health guidance is followed, or what deeper issues 'mistrust' might mask. Ethnographic and qualitative approaches are needed to improve our understanding of state–citizen relations in both dynamic and context-dependent ways (MacGregor *et al.* 2022).

Action area 5
Ethics and justice – cross-cutting imperatives

Over 1,000 volunteers painted the 150,000 hearts on the National Covid Memorial Wall on South Bank, London England to represent the UK's pandemic death toll.

PHOTO: © ROBERT WALLIS/PANOS PICTURES

The conventional understanding of preparedness can give the impression that responses to a disease outbreak are neutral, shaped only by biomedical knowledge. But, as the Covid-19 pandemic continues to show, significant ethical judgments are implicated, from major policy directions to everyday decision-making.

'Following the science' was inadequate for understanding the range of issues at stake: from decisions on the fair allocation of scarce resources, to considerations of duty of care to health workers, to national policy responses that must determine proportionality when implementing public health measures. This became clearer as the pandemic endured and social and economic harms became as evident as high death rates.

Efforts to improve preparedness must therefore incorporate systematic attention to ethical dimensions of response. The areas of focus for rethinking preparedness outlined in the sections above have emerged from social science research related to diverse experiences in disease outbreaks. However, they could be recast in broad terms as matters of ethics.

An ethical reframing would go beyond the conventional bioethical understanding of 'individual rights', which centres individual autonomy and the concepts of consent and avoidance of harm. 'Epidemic ethics' involves a wider set of societal issues, across scales from the individual to the national to the global.

This includes an understanding that decision-making in epidemic situations plays out differently depending on how societies variously value age, disability or vulnerability, and consider marginalised people. Similarly, countries have distinctive burdens of disease and their own understandings of how resource allocation is best prioritised.

Understanding power and social justice must come into play. Inequities within and between nations became stark during the Covid-19 pandemic. Institutional mechanisms such as COVAX (Covid-19 Vaccines Global Access) failed to address vaccine hoarding by high-income countries, and longer-term health inequities and access to health care shaped the burdens of disease that emerged.

Such examples highlight the hierarchies of power, vested interests and structural violence that continue to shape who is most likely to benefit from technological innovation and where such innovation is centred (**see Box 15**).

Box 15: Expanding sources of technological innovation and knowledge

The ESRC-funded project **Innovation and Complementary Capabilities for Vaccines** is examining the implications of the Covid-19 pandemic on vaccine innovation systems. The aim is to identify the mix of critical capabilities within and between firms and regulators that unlocked the development of new Covid-19 vaccines and enabled market penetration of the ones that became globally dominant. The empirical evidence is based on the experience of a selected group of firms and countries with distinctive levels of capabilities and regulatory, cultural and business contexts – Japan, the UK, Germany, India, Brazil, Argentina, Vietnam and Indonesia.

The research contends that expansion of the sources and types of knowledge and awareness of capabilities contributes to increasing collective resilience to shocks and reduces the risk of dependence upon a few countries for critical knowledge and products. Insights from the project's analysis will contribute to supporting the diversification and expansion of innovation as well as complementary political capabilities across firms and country regulatory agencies.

Importantly, the Covid-19 pandemic has underscored the urgency of decolonising efforts in global health, including examining who is neglected and why with respect to investments in preparedness. For example, are diseases prioritised that are perceived to be a threat to high-income countries while deaths from so-called 'endemic' diseases in poorer countries are neglected? Preparedness investments need to ensure that low- and middle-income countries can respond to outbreaks more effectively, including through health systems strengthening. Issues of social justice and decolonisation reinforce each other.

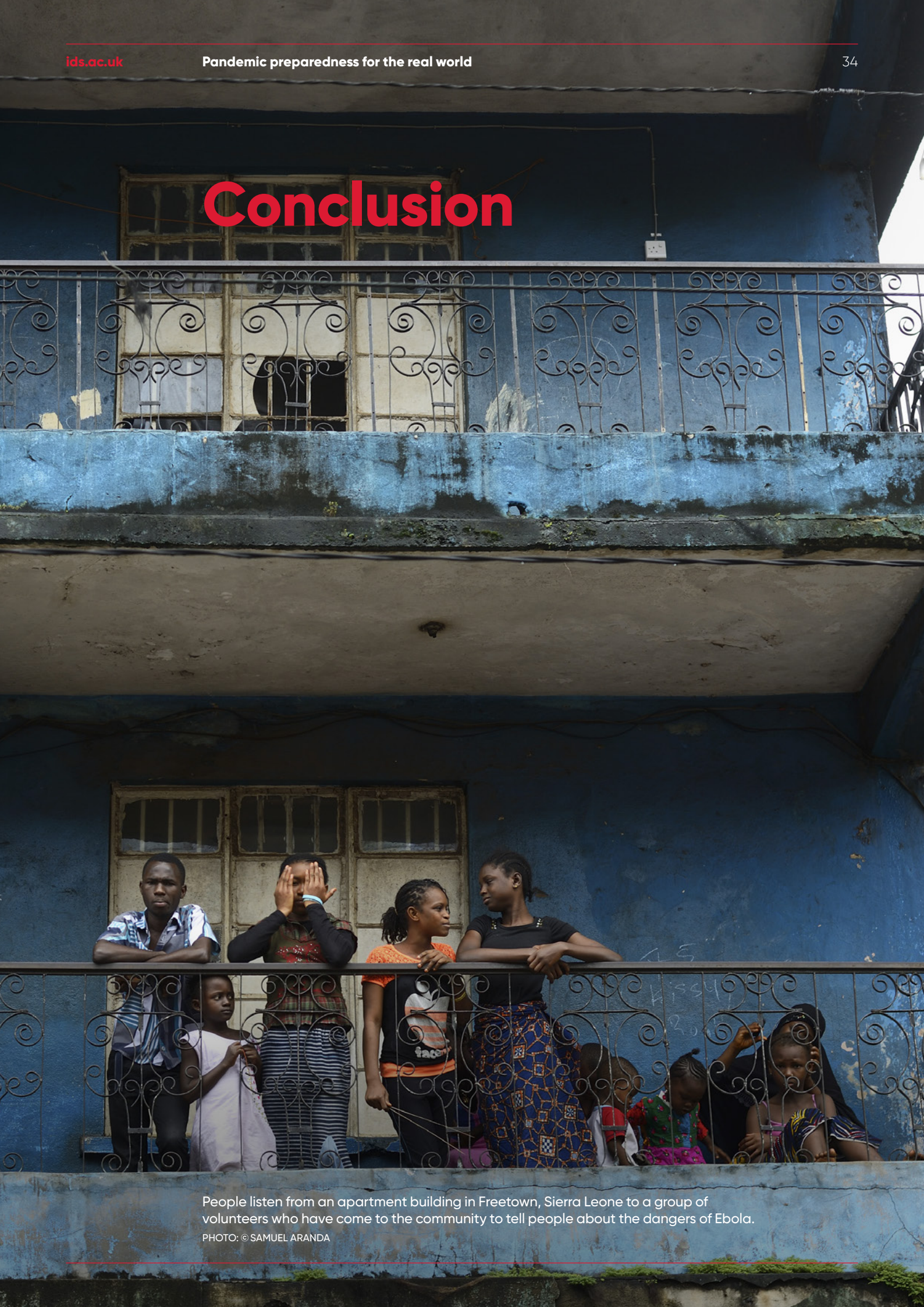
In addition, the association of preparedness with the notion of health security needs to be disentangled so it is not co-opted to sanction authoritarian responses which can trample human rights in the name of public health. Approaches that prioritise care and seek to address marginalisation are more likely to improve citizen–state relations, making the current focus on strengthening trust to improve pandemic preparedness again a matter of ethics.

Preparedness for care, equity and social justice thus extends across scales of responsibility and cuts across all the themes of this report. Such preparedness will demand shifts in thinking and doing which will not be simple to achieve. It will entail broad discussions, a redistribution of power and a restructuring of institutional mechanisms – and require a willingness to make and embrace change at all levels.

Box 16: Three ways to advance the agenda for ethics and justice

1. **Fund research** Bioethicists need to tackle questions of pandemic ethics, researching frameworks to incorporate structured help for the ethical and moral dimensions of policy- and decision-making in pandemics.
2. **Widen ethics discussion** Deliberative processes and assemblies can bring a plurality of experience, knowledge and views into discussions of ethics and values that are attuned to different contexts, reflect a range of experiences and agendas, and can guide action during outbreaks.
3. **Involve institutional actors** They can help to advance equity by shifting the visible mechanisms and structures and the less visible relations and interests that help to drive decisions and actions, including those about resource allocation and who gains from investments.

Conclusion



People listen from an apartment building in Freetown, Sierra Leone to a group of volunteers who have come to the community to tell people about the dangers of Ebola.
PHOTO: © SAMUEL ARANDA

The global response to the Covid-19 pandemic demonstrated the limitations of the ways we discuss and respond to disease outbreaks. Popular discourse around epidemics has been dominated by a technocentric and operational lens that privileges biomedical thinking. Filtered through static and simplistic disease risk models, this constructs outbreak response as a series of operational tasks to be implemented by epidemiologists and bureaucrats.

The social contexts in which epidemics are deeply rooted are missing from the picture.

This report highlights how a nuanced understanding of the differing needs, circumstances and abilities to make change of affected individuals and communities can be used to craft response strategies that go beyond quick-fix, top-down, centralised interventions to develop more relevant, acceptable, equitable, effective and sustainable pandemic preparedness solutions.

So, how do we build a world better able to handle future shocks? And what can such solutions look like?

Complex, socially rooted problems cannot be addressed by simplistic interventions. Instead, better solutions are likely to emerge from inclusive and deliberative decision-making processes that recognise the uncertainties inherent in any single framing. This means negotiating across power hierarchies, including those of disciplines, social class and geographies.

To go beyond approaching disease as purely a public health challenge represents a big shift from the status quo. But it is also an opportunity. When disease preparedness is viewed as a social issue, it becomes easier to develop integrated approaches not just to pandemic-prone diseases but to epidemic and endemic diseases too. Building the knowledge to support such approaches requires combining a far greater diversity of data, expertise and perspectives than is customary, including from communities and practitioners as well as scientists. Building resilience by high reliability professionals and their networks requires investments in skills, relationships and negotiations across health and social systems, in ways that respond to all health challenges – pandemic or otherwise.

Financing 'pandemic preparedness', therefore, requires a flexible approach to mobilising and disbursing funds that goes beyond the existing international risk-based financial instruments. It requires investments in social interventions such as reducing inequalities, increasing institutional accountability and promoting diversity of voices in decision-making spaces.

In such a pandemic preparedness plan, addressing social as well as health systems would be understood as relevant not only on ethical but also on effectiveness grounds.

While aspects of the Covid-19 pandemic were predictable, we do not know what shape future shocks might take and we cannot develop blueprints for future responses. However, we can plan for unanticipated events by building our capacity for developing appropriate solutions. Addressing the limits of our individual understandings requires us to invest in societies and institutions that allow diverse perspectives to come together and develop newer and responsive solutions in changing environments for problems yet to be identified.

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Library Road
Brighton, BN1 9RE
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+44 (0)1273 606261
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