Syndemics 3

Syndemic vulnerability and the right to health

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This is the third in a **Series** of three papers about syndemics

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Investigators working both in syndemics, a field of applied health research with roots in medical anthropology, and in the field of health and human rights recognise that upstream social, political, and structural determinants contribute more to health inequities than do biological factors or personal choices. Syndemics investigates synergistic, often deleterious interactions among comorbid health conditions, especially under circumstances of structural and political adversity. Health and human rights research draws on international law to argue that all people deserve access not only to health care, but also to the underlying determinants of good health. Taking the urgent matter of migrant health as an empirical focus, we juxtapose the fields of syndemics and health and human rights, identify their complementarities, and advocate for a combined approach. By melding insights from these fields, the combined syndemics/health and human rights approach advanced here can provide clinicians and other key stakeholders with concrete insights, tools, and strategies to tackle the health inequities that affect migrants and other vulnerable groups by: (1) mapping the effect of social, political, and structural determinants on health; (2) identifying opportunities for upstream intervention; and (3) working collaboratively to tackle the structures, institutions, and processes that cause and exacerbate health inequities. Undergirding this approach is an egalitarian interpretation of the right to health that differs from narrow legalistic and individual interpretations by insisting that all people are equal in worth and, as a result, equally deserving of protection from syndemic vulnerability.

Introduction

At the edge of the European continent, just kilometres from the tunnel linking France and the UK, as many as 10 000 migrants[1] from 15 nationalities lived in abject squalor in the open air encampment at Calais until it was razed by the French authorities in late 2016. Initially established after France shuttered the infamous Red Cross shelter at Sangatte, the tent city at Calais—which was variously described as a tolerated zone, the new jungle, and France's first state-sanctioned migrant slum[2]—sat atop a former waste dump.[3] As in similar camps across Europe, hunger among the residents abounded. Gastrointestinal disorders were common as well, which was no surprise since food was in short supply, and available food and water were rife with bacterial contamination due to inadequate refrigeration, limited supplies of running water, and inadequate toilet facilities (just one toilet per 75 residents). Overflowing sewage and accumulated refuse attracted flies, mice, and rats. Other factors facilitating the spread of infectious disease included overcrowding (in tents or unstable, makeshift huts exposed to the elements), scant access to washing facilities (either for people or for clothes and bedding), and the presence of pests like bedbugs and lice. Cooking on open fires posed risks of smoke inhalation, carbon monoxide poisoning, and burn injury. Inadequate night-time lighting left many residents, especially women, anxious and vulnerable to sexual violence. All of these risks were aggravated by the weather—extreme temperatures, rain, snow, mud—and, in some cases, by non-communicable diseases. According to Doctors of the World, which had an active clinical presence at Calais from 2003 until its closure in 2016, the camp was "a blight on Europe", which "should and can do better".[4]

Not all migrants face conditions as harsh as these, but many face precarious circumstances, violence, and disease risk both en route and in their new places of temporary and permanent residence. Even in more hospitable circumstances, physical risks are often overlaid on mental health conditions. Many migrants experience anxiety, depression, or post-traumatic stress disorder stemming from exposure to war or political

Key messages

- According to international human rights standards, all people have an equal right to the highest attainable standard of physical and mental health, which includes access not only to health care, but also to the underlying determinants of good health
- Refugees and migrants are especially likely to inhabit environments of syndemic vulnerability—environments in which upstream social, economic, political, and structural determinants put certain people at risk of concurrent and deleteriously interacting forms of health adversity
- An egalitarian understanding of the right to health, which diverges from more traditional legalistic and individualistic understandings, insists that all people are equal in worth, hence equally deserving of protection from harmful environments of syndemic vulnerability
- A combined syndemics/health and human rights approach offers a principled, evidence-based foundation for strategic collaboration between clinicians, public health professionals, policy makers, civil society actors, and other stakeholders who are committed to tackling health inequities by working to advance structural and political change

conflict, risks and dangers while in transit, and uncertainty about the future—including the possibility that one's temporary residence might be evacuated or razed.[5,6] In many settings, none of these health needs can be adequately assessed or treated. Whether or not treatment is available, such physical and mental health risks can interact in mutually exacerbating ways.

The health circumstances of migrants, especially those in transit, can be described in terms of a humanitarian crisis, or wide-ranging human rights violations. From a health standpoint, however, we can also describe these circumstances as dangerous environments of syndemic vulnerability. Syndemics emerge when two or more health conditions co-occur in environments of aggravated adversity and interact synergistically to yield worse health outcomes than each affliction would likely generate on its own.[7–12] The concept of syndemics highlights the negative feedback loop[11] among comorbidities and upstream factors that often are overlooked in routine clinical interactions—factors that include the social, economic, political, and structural determinants of health. Such negative feedback loops are not unique to settings like Calais, or to migrants. Any meaningful effort to tackle the "deleterious clustering and interaction of diseases"[8] faced by migrants, refugees, or other populations at risk must begin by mapping out the upstream determinants that interact to put certain individuals and groups in positions of syndemic vulnerability. Often, the most influential of these determinants are structural and political.[13]

In this Series paper, we advance the understanding of syndemics by approaching it as both a field of health research and what can be characterised as an idiom of social justice mobilisation for health:[14] a concrete strategy for melding scholarly insight and ethical values with the goal of promoting social justice in the health domain. We begin by considering various fields that can themselves serve as idioms of social justice mobilisation for health, among them social medicine, social epidemiology, health equity, and others. We then juxtapose two such fields, syndemics and health and human rights, and propose a combined approach that embodies their shared commitments and complementarities. We conclude by showing how this approach can strengthen responses to one of the most complex and multifaceted health challenges of the present era: migrant health.[15–18]

The combined syndemics/health and human rights approach to confronting health inequities bears three hallmarks. First, following Amartya Sen, health can be defined as "the physical and psychosocial status that allows for the full development of each person's capabilities, … and the absence (or significant diminution) of suffering, pain, and disability".[19] Second, we advance an egalitarian interpretation of the right to health that differs from narrow legalistic and individualistic interpretations by insisting that everyone's life is equally important.[20,21] If all people are truly equal in worth, then all are equally deserving of protection from syndemic vulnerability. Finally, a combined syndemics/health and human rights approach provides a strong foundation for strategic collaboration that is principled, evidence-based, and designed to achieve structural and political change.

A rights-based approach grounded in a syndemic sensibility can provide clinicians, public health professionals, civil society actors, and members of vulnerable groups, among others, with a variety of resources and strategies for combating health inequities. These include tools for: (1) understanding the origins and effect of social, political, and structural determinants on health; (2) identifying opportunities for upstream intervention; and (3) working in focused and collaborative ways, and at multiple levels, to change the structures, institutions, and processes that exacerbate health inequities—or cause them in the first place. By mapping environments of syndemic vulnerability and leveraging new insights in striving for structural and political change, the right to health can be advanced in its fullest form—as the opportunity for all people to develop their full range of human capabilities and have an equal chance to live a flourishing life.

Defining health inequity and mobilising for social justice

There is no doubt that "ethical obligations are deeply rooted in the practice and traditions of the health professions".[22] Some of these obligations stem from distinct historical legacies, including the Hippocratic Oath. Other obligations were born in the wake of grievous violations like the perversions of Nazi medicine[23] and the US Public Health Service Syphilis Studies at Tuskegee[24] and in Guatemala.[25] Some obligations are owed by clinicians to their patients, or by health researchers to their research participants. Other obligations apply primarily at the population level, even if their effects are palpable for individuals. These ethical obligations are especially weighted in favour of patients and populations who face heightened vulnerability, which can be defined as exposure to a "set of conditions that render individuals and communities more susceptible to disease or disability".[26] Vulnerability has many forms, and it can be layered and multidimensional.[27–29]

Public health researchers and ethicists have characterised the concentration of health adversity in vulnerable populations in three distinct ways. Health inequalities refer to differences between more and less advantaged social groups that favour "the already more advantaged".[30] Health disparities, a term used primarily in the USA, is generally applied to population-level inequalities between different racial and ethnic groups,[31] without specific reference to socioeconomic status.[32] Since both terms refer to statistical differences that are detectable at the population level, neither can speak to

	Core discipline	Core principles	Core aims
Social medicine	Medicine	"Medicine is a social science, and politics is nothing but medicine on a grand scale";[33] health care is a public good, not a commodity	Provide health care in a manner that takes upstream social, economic, political, and structural determinants of health into account; act politically to promote individual and community health; strive to reorganise health-care systems to ensure equitable access for all
Social epidemiology	Public health	Science is an important tool for investigating how social and structural factors affect health	Uncover social determinants of health and measure their effect; develop, implement, and assess health-promoting policies and intervention strategies
Health equity	Bioethics and public health ethics	Unnecessary and avoidable health differentials are unfair and unjust	Develop tools to assess which health inequalities constitute health inequities (ie, are avoidable and unjust) and determine which actions ought to be taken in response
Medical humanitarianism	Medicine	Biomedicine, public health, and epidemiology can and should be used to save lives and alleviate suffering after crises born of conflict, neglect, or disaster	Deliver health services in crisis settings; bear witness to suffering; maintain political neutrality
Health and human rights	International law	All people have an equal right not only to adequate health care, but also to the underlying determinants of good health; all have a right to participate in political processes that can affect their health and the health of their communities	Promote human dignity by advancing respect, protection, and fulfilment of the human right to health; interpret the right to health for all relevant stakeholders
Syndemics	Medical anthropology, informed by public health	Vulnerable populations often suffer from multiple, concurrent forms of health adversity, and inequality tends to fuel their synergistic, deleterious interaction	Identify upstream factors that contribute to harmful environments of syndemic vulnerability; describe how certain individuals and communities are consigned to these harmful environments and with which effects; collaborate with stakeholders in the clinical, public health, policy, and civil society domains to apply these insights toward preventing the emergence of such environments, treating their effects, or both

***Table 1*: Common idioms of social justice mobilisation for health, by field**

Panel 1: Social justice mobilisation for health—common principles

- Upstream factors can cause grave harm to the health of individuals and populations
- Since the effect of these factors is uneven, some populations are more vulnerable to health risks than others
- Vulnerable individuals and populations must not be overlooked; they, too, deserve health-related attention, investment, and care
- Health inequities can best, and perhaps only, be remediated through upstream intervention
- Sustainable reduction in health inequities will require collaboration between clinicians, public health officials, policy makers, civil society actors, and other key stakeholders both within and beyond the health domain

groups for which population-level data are unavailable, including many migrant groups. Moreover, neither of these terms conveys the ethical or moral force of a third term: health inequities, or population-level differences that are understood to be patently unfair and unjust.[30]

Researchers in fields as diverse as medicine, public health, bioethics, law, and anthropology share concerns about health inequities, but leverage the tools of their disciplines to respond in substantially different ways. These various approaches can be characterised as distinct idioms of social justice mobilisation for health (table 1).[14] Each idiom is embedded in its own disciplinary tradition and reflects its parent field's principles, priorities, and goals.[34–41] Across this variation, all idioms of social justice mobilisation for health share the five common principles identified in panel 1.

Several health fields can themselves be characterised as idioms of social justice mobilisation for health, including social medicine, social epidemiology, health equity, medical humanitarianism, health and human rights, and syndemics. Each of these idioms bears its own strengths and weaknesses. Yet none on its own can provide the tools to systematically address environments of aggravated adversity in which multiple health conditions co-occur and interact with deleterious effect. A rights-based approach grounded in a syndemic sensibility offers an optimal framework for advancing this sort of multilevel response (table 2).

Forging dialogue: human rights, syndemics, and social justice

Health and human rights

Unlike idioms of social justice mobilisation anchored in philosophical claims (like health equity) or animated by appeals to empathy or compassion (like humanitarianism), the field of health and human rights stands on firm legal ground. As noted in *The Lancet* on the 60th anniversary of the Universal Declaration of Human Rights, "the right to health is much more than a convenient phrase which health workers, non-governmental organisations, and

civil-society groups can brandish about in the vague hope that it might change the world. The right to health is a legal instrument—a crucial and constructive tool for the health sector to provide the best care for patients and to hold national governments, and the international community, to account".[43]

The notion of a universal human right to health underpins a wide array of internationally agreed-upon legal commitments, including the WHO Constitution (1946), Article 12 of the International Covenant on Economic, Social, and Cultural Rights (ICESCR, 1966), and, crucially, General Comment 14 (2000) on ICESCR Article 12, a document "as revolutionary as the American Declaration of Independence: it explains what a right to health means in practical terms".[44] Under these agreements, state signatories are duty-bearers bound to individual rights-holders to "recognize the right of everyone to the enjoyment of the highest attainable standard of physical and mental health". To comply with this treaty obligation, states must develop legislation and programmes to address all three facets of this right: to respect, protect, and fulfil the right to health.[45,46]

Although this legal grounding is an important asset, health and human rights efforts have faced lively critique.[47–56] Some critics take issue with "narrow and sometimes excessively legalistic"[56] definitions that frame the right to health primarily as an individual right grounded in, and effectively limited to, the juridical sphere. Other critics object to interpretations that emphasise a right to health care while paying insufficient attention to upstream social, political, and structural determinants, whose effect on individual and population health is often much weightier than downstream factors like personal behavior or access to medical attention.[57,58]

Although narrow interpretations certainly have their advocates, more robust understandings of health and rights find ample support in human rights theory, law, and practice. One need look no further than General Comment 14 (2000), which recognises the powerful impact of upstream factors on both individual and population health and holds states accountable. As duty bearers, states are required to ensure universal access to a wide range of socioeconomic factors that promote conditions in which people can lead healthy lives.[45] These underlying determinants include safe drinking water, adequate sanitation, sufficient and appropriate food, safe housing, healthy occupational and environmental conditions, and education. Since all human rights are indivisible and interdependent, the right to health can only be fully realised in conjunction with other civil, political, social, economic, and cultural rights. To fulfil these interrelated obligations, states are expected to take appropriate legislative, administrative, and other measures.[59]

Many states fail to comply with these obligations. Even in the absence of strong enforcement mechanisms, however, the right to health holds symbolic power and rhetorical appeal far beyond the legal domain. In civil society and grassroots efforts, for instance, the right to health is a powerful resource for mobilising vulnerable groups to participate in political claims-making processes. Given its strong moral force, the right to health can be invoked to demand transparency and accountability not only from governments, but also from non-government actors such as private corporations. Right-to-health claims can thus activate another fundamental human right: the right to participate in political decisions and processes that have bearing on one's life.[46] Symbolic invocation of the right to health can bear results even in countries, including the USA, that have avoided committing themselves to human rights treaties.[60]

In more formal contexts, health and human rights experts have sought over the past 2 decades to find ways of making human rights frameworks relevant,[46] not just for clinicians and researchers but also for people whose health and lives are affected by rights violations. The result is a range of human rights-based approaches to health that seek to translate core human rights principles—participation and empowerment, equality and non-discrimination, accountability and transparency—into concrete forms of practice.[22,46,61]

Unlike earlier human rights approaches focused on either naming and shaming or individual-level measures of redress, newer human rights-based approaches tend to take a different tack. A prime example is the "circle of accountability" framework developed by Yamin and Cantor.[62] This model shows the dynamic interrelationships between clinical care providers, public health professionals, policy makers, elected officials, and individuals with health needs. Accountability is not

	Health and human rights	Syndemics
Parent field	International law	Medical anthropology
Core questions	How do rights violations harm health? How can rights protection promote good health, especially for vulnerable populations?	How and why do comorbidities cluster and interact? How can we disrupt syndemics[42] to improve the health of vulnerable populations?
Intended level of intervention	Individual level, with increasing attention to population-level concerns	Individuals and populations in specific local contexts
Research methodology	Primarily case-based and qualitative, but increasingly open to quantitative indicators	Ethnography; mixed methods approaches (qualitative and quantitative)
Core areas of intended effect	Human-rights-based approaches to empowerment, impact assessment, policy making, and intervention design and implementation; litigation	Public health research and programme development; policy making; social scientific research
Key terms and principles	Obligation of states to respect, protect, and fulfil everyone's right to the highest attainable standard of physical and mental health; underlying determinants of health; universal standards; indivisibility and interdependence of rights; participation and empowerment; equality and non-discrimination; transparency and accountability	Vulnerability; social, economic, political, and structural determinants of good health; context, in all its dimensions (historical, environmental, structural, political, economic, social, cultural); power and inequality; syndemic production;[42] syndemic sensibility; syndemic suffering;[10] syndemic care[11,12]

Table 2: **Syndemics and human rights—two approaches to health inequity**

defined solely in terms of accusation or litigation, but rather as an ongoing process. Furthermore, it is understood as having both a preventive and a corrective function[62] or, put differently, a forward-looking dimension with implications for policy making in addition to its more familiar retrospective emphasis on redress.

Human rights-based approaches are thus part of an increasingly dynamic conversation between health and human rights advocates and the applied sciences of clinical medicine and public health. Newer health and human rights approaches hold two distinct advantages over their predecessors: they are keenly attuned to the complexity of political (and not just legal) realities, and they tend to aim for sustainable, systemic change, while recognising that change is often gradual and incremental.

Although there clearly are powerful synergies[63] between public health and human rights-based responses to health inequity, important opportunities for cross-fertilisation have remained unrealised.[64,65] The syndemics framework developed by medical anthropologists offers valuable resources for harnessing and channelling these powerful connections.

A syndemics lens

Social epidemiological research in recent decades has clarified two key points, both of which are evident in the research field of migrant and refugee health. First, health adversities tend to cluster among people in positions of structural vulnerability.[29] Second, this epidemiological patterning of disease, illness, and injury is profoundly influenced by upstream determinants.

As syndemics researchers have noted, there is still much to learn about the specific ways in which "environmental, economic, cultural, social, psychological, and biological processes [interact] to create high-risk context[s] for co-occurring medical conditions".[11] Yet cases like Calais remind us just how profound the impact of upstream determinants can be. Although the precise mechanisms of syndemic interaction can be difficult to quantify,[66,67] the power of a syndemic sensibility lies in its capacity to expand, enrich, and ultimately reframe our understanding of complex situations of health adversity. In short, a syndemic sensibility can guide clinicians and other stakeholders toward new insights, tools, and collaborative strategies for combating health inequities in multiple domains and at multiple levels.

Many of these insights reflect syndemics' roots in medical anthropology. Three anthropological commitments are especially important. These include attention to: (1) the role of power and inequality in structuring vulnerability; (2) the complex and multilayered nature of local contexts (historical, structural, environmental, social, economic, political, etc); and (3) the subjective impact of disease, illness, and injury on individuals and their families and communities. Syndemics draws on these anthropological commitments to advance three goals: (1) to recognise how upstream factors create and perpetuate structural vulnerabilities that contribute to syndemic emergence and exacerbation; (2) to understand and describe how certain individuals, families, and communities, but not others, are consigned to harmful environments of syndemic vulnerability with concrete effects; and (3) to intervene more effectively both upstream, in the domains of civil society, law, policy, and public health practice, and downstream, at the point of clinical contact.

Syndemics differs in crucial ways from conventional approaches to public health and health-care delivery. As the US Centers for Disease Control and Prevention explains, "the usual public health approach to disease prevention often begins by defining the disease in question".[68] A syndemics approach, by contrast, "first defines the population in question, identifies the conditions that create and sustain health in that population, examines why those conditions might differ among groups and determines how those conditions might be addressed in a comprehensive manner".[68] To date, several syndemics have garnered particular attention, including the SAVA syndemic investigated by Merrill Singer (substance abuse, violence, and HIV/AIDS)[7,9] and the VIDDA syndemic researched by Emily Mendenhall (violence, immigration and isolation, diabetes, depression, and abuse).[10]

A concrete example of syndemic vulnerability is illustrative. Medical anthropologist Mark Nichter describes the mutually reinforcing relationship among poverty, unemployment, HIV, and multidrug resistant tuberculosis as follows: "(1) poverty leads to work migration far from home; (2) loneliness, the drudgery of the job, and being paid every few weeks lends itself to binge drinking and risky sex in an environment where prostitution flourishes; (3) this leads to sexually transmitted infections such as HIV; (4) rising rates of HIV lead to corresponding rising rates of TB [tuberculosis]; (5) poor adherence to TB medications occurs after a few months of home-based treatment (when symptoms abate) among patients who return to migrant labor far from medicine distribution sites; (6) poor management of those seeking treatment for HIV and TB leads to increases in drug-resistant TB; and so on".[69]

Effective intervention in a syndemic like this one requires a systems approach to problem solving that includes "control of the component afflictions as well as recognition of the relationships that tie those afflictions together and synergistically amplify their negative consequences".[69] Intervention also requires talking, and listening attentively, to people who are themselves caught in environments of syndemic vulnerability.

This example highlights two key contributions of the syndemics approach. First, it shows how political factors, including structural vulnerability and human rights violations, can have a complex, cascading impact on individual and population health. Second, it lays the groundwork for the sort of strategic intervention that

can yield multiplicative effects. What syndemics has lacked to date, and what a health and human rights approach can offer, are concrete tools and principles for designing such interventions, mobilising the political will to achieve their implementation, and evaluating their effects.

Below and in the accompanying case-based panels, we illustrate the value of a combined syndemics/health and human rights approach to combating health inequities by examining syndemic vulnerabilities facing migrants in wealthy, industrialised countries. Panels 2–4, which draw on published work and, in one instance, our own experience, focus on three migrant groups facing different forms of syndemic vulnerability: refugees at a reception centre in Germany, children and adolescents incarcerated in Australia, and farmworkers in the USA.

The case of migrant health

In the contemporary era, migration is emerging as "one of the most pressing global challenges, as worldwide displacement is now at the highest level ever recorded".[70] As of 2015, the UN recorded the number of international migrants at 244 million,[90] including an estimated 19·6 million refugees.[70]

Migration can itself be a powerful social determinant of health[16,91] or, as pioneering health and human rights researcher Jonathan Mann expressed it, a social determinant of vulnerability.[92] Although migration is not always motivated by adversity, many migrants leave their countries of origin in response to risks or dangers such as economic hardship, political repression, violence, climate-related pressure, war, or several factors in concert. Researchers and practitioners in different health fields approach the challenges associated with migration in substantially different ways (table 3).

Migration and the human right to health

Health risks and risks of human rights violation exist at every stage of migration—a process that can span pre-departure, travel, destination, interception, and return.[93] Migrant status also can intersect with other factors like gender, socioeconomic status, and racial or ethnic background to exacerbate existing health risks.[94] Wherever migrants are uninvited or unwelcome, migration status puts them "in ambiguous and often hostile relationship to the state and its institutions, including health services",[16] which can impede their access to both preventive measures and curative care. Lack of legal status leaves migrants especially vulnerable to rights violation and health-related adversity.

From a human rights standpoint, states that have ratified relevant human rights treaties and conventions are obliged to respect, protect, and fulfil the right to health of citizens and resident non-citizens alike, including migrants and refugees. To fulfil these obligations, states must not only avoid interfering directly or indirectly with the enjoyment of the right to health but also, in a positive sense, adopt appropriate measures to advance the progressive realisation of this right.[45] Among other measures, states are expected to reform laws, policies, and living conditions of refugees and asylum seekers to bring their migration regime into

Panel 2: Syndemic vulnerability and refugee mental health in Europe

A 28-year-old Afghani man residing at a refugee reception centre in Germany was transported to a local public hospital by paramedics after complaining of severe dyspnoea accompanied by anxiety and, according to security guards, aggressive behaviour. After the receiving clinicians excluded somatic pathologies, the man was discharged from the hospital despite clinical concerns about the possibility of phobic anxiety disorder, post-traumatic stress disorder, depression, or a combination of these diagnoses. A medical student who witnessed the encounter later consulted with a faculty member (MK) about the frustration he felt at the hospital staff's inability to provide the patient with meaningful relief.

Europe is facing a migration crisis of unprecedented dimensions,[70] and due to limited legal entitlements and multiple barriers, access to mental health care for asylum seekers remains precarious in Germany and across the continent.[71] Despite the high burden of syndemic mental health risk endured by refugees and asylum seekers like this young man, receiving structures in European countries are unprepared to meet their needs. Indeed, Germany and 18 other European countries were sanctioned by the European Commission in September 2015 for failing to fully implement a 2013 EU directive (2013/32/EU) mandating minimum standards for the reception of asylum seekers, including special provisions for "persons with mental disorders and persons who have been subjected to torture, rape or other serious forms of psychological, physical or sexual violence."[72] According to Nils Muižnieks, Commissioner for Human Rights of the Council of Europe, the asylum system in Germany is not sufficiently prepared to identify or provide support to vulnerable migrants.[73] Appropriate diagnostic and treatment provisions are largely absent, and local resettlement mechanisms are not attuned to the potentially adverse effects of uncoordinated or unwelcoming migration policies on migrants' health and wellbeing.

In response to this situation, physicians and psychotherapists of the German Federal Association of Rehabilitation Centers for Survivors of Torture denounced the Minister of Health's attempt to gloss over the system's existing deficits.[74] They also presented an elaborate proposal to ensure access to health care and systematically expand the country's network of psychosocial centres for refugees that explicitly invoked the human right to health.[75]

The German Federal Government possesses a crucial but hitherto overlooked resource that can help respond to this need: the state's well established policy, and broad experience, in implementing human-rights-based approaches to health in the field of development cooperation.[76,77] If Germany were to employ human-rights-based approaches not only in poor and middle-income countries like India, Cambodia, Nepal, and Kenya but also in Germany itself, the syndemic health risks facing individuals fleeing war, violence, and torture could be reduced substantially. Drawing on their rich overseas experience, German development professionals could deploy their expertise about the existing array of rights-based strategies to promote human-rights-based approaches to health at home, including in the area of mental health. As a crucial first step, global health experts could support the systematic application of tools and guidelines developed by agencies like UN High Commissioner for Refugees, International Organization for Migration, and non-governmental organisations like Médecins du Monde "at home".[78] As another key step, development professionals could help design, conduct, and implement a health-related Human Rights Impact Assessment[79] to support policy makers in assessing and, if necessary, changing laws and legal practices that compromise the health and wellbeing of asylum seekers and refugees.

Panel 3: Syndemic vulnerability among migrant children incarcerated by Australia

A 6-year-old boy from an Iranian refugee family presented to the emergency department of a local hospital near Sydney, Australia.[80] At the time, he and his family had been detained in an Australian detention facility awaiting a decision regarding their asylum application for more than a year. According to his mother, the boy had refused to speak, eat, or drink since witnessing a man cut his wrists in a suicide attempt. 6 months earlier, he had already begun to withdraw from playing with other children, and he experienced nightmares and bed-wetting after being exposed to riots in which other detainees set themselves aflame. The boy had shown progressive signs of withdrawal and anxiety, and his dreams and drawings revealed fear-laden scenes and images related to the detention camp. Although the boy showed some improvement during repeated, sometimes long-term hospital admissions, he displayed severe separation anxiety following visits from his father,[80] and he relapsed each time he was returned to the detention facility. Against the advice of child psychiatrists and other professionals, he was placed in community foster care. 6 years later, at 12 years of age, the boy was still receiving psychiatric care for symptoms of post-traumatic stress disorder, depression, and adjustment difficulties as a result of these early traumatic experiences.[81]

Although Australia is signatory to the UN Convention on the Rights of the Child, the country's Minister of Immigration denied a petition to release the boy and his family. The minister's denial did not dispute the causes or the magnitude of the boy's suffering; rather, it was framed to avoid setting a precedent that would mandate the release of other children in similar situations in the future. With that decision, and in violation of the state's international obligations, the health and wellbeing of the boy were subordinated to the government's aim of deterring migrants from approaching Australian shores.

The boy's case, which was written up in a local medical journal, served to raise public awareness about immigration detention, especially the detention of children and families. Even so, and despite mounting evidence that incarceration harms children's health and development,[81–83] Australia continues to mandate the detention of undocumented migrant children, unaccompanied minors, and families more than a decade later.[84]

Australia's persistent incarceration of children and adolescents does not simply consign them to harmful environments of syndemic vulnerability. It also violates their human rights, including their right to timely review of their asylum petitions. Instead of meeting this obligation, Australia regularly abandons children and families, often for lengthy periods of time, to detention centres operated by private, for-profit companies and run by unskilled or inadequately trained staff (eg, staff from prisons). Some Australian detention centres are on the mainland, but other off-shore centres are located on isolated Pacific islands like Nauru, Christmas Island, and Manus Island (Papua New Guinea), whose governments are paid by Australia to keep detainees far from public sight and public consciousness. Under these circumstances, the health and best interests of migrant children rarely prevail.

From a human rights perspective, Australia's obligations to respect, protect, and fulfil children's rights clearly mandate major reforms in law, policy, and practice. Fulfilling the state's human rights obligations would substantially improve migrant children's health (mental and physical) and developmental trajectories. A human rights strategy informed by a syndemics sensibility would convene clinicians, public health professionals, and policy makers and put legal obligations and standards into meaningful dialogue with the empirical findings cited above, along with broader medical and psychological knowledge about children's mental health and development. Invested stakeholders could thus collaborate in clarifying the complex constellation of factors that contribute to syndemic suffering; identifying concrete opportunities to disrupt the harmful negative feedback loop among mutually reinforcing risk factors (legal, structural, and biopsychosocial); and working together to mobilise the political will needed to achieve change.

Given the magnitude of syndemic vulnerability facing children in Australian detention centres, recent legislative efforts to punish physicians with imprisonment for speaking publicly about their observations from what have been described as appalling facilities[83,85] is a definitive step in the wrong direction.

alignment with human rights standards. For instance, states are required to prioritise individuals' needs (eg, for security, information, and social support) over administrative principles. States must ensure timely, affordable access to physical and mental health care; avoid enacting policies that exacerbate chronicity and complications; and refrain from withholding care in order to deter other migrants from arriving. In short, human rights obligations require that migrants' health and wellbeing take priority over national considerations like sovereignty and immigration control. States often neglect or violate these requirements. Despite their limited legal force, these and other human rights obligations are nonetheless powerful resources for health professionals, civil society organisations, grassroots activists, and others who hope to hold states accountable.

Migration and syndemic vulnerability

Many migrants face complex forms of syndemic vulnerability. The specific health risks they confront, however, vary widely depending on their circumstances. In so-called open-air squats in France, on the Greek border with Macedonia, and elsewhere in Europe and the Middle East, migrants and refugees face food insecurity and malnutrition; infectious diseases borne by food, water, air, and biological vectors; respiratory illnesses

Panel 4: Syndemic vulnerability and farmworker health in the USA

A 42-year-old Salvadoran migrant man worked on a California farm cutting and picking jumbo watermelons.[86] One unusually hot day, the US National Weather Service issued an excessive heat warning anticipating temperatures as high as 46°C; the man began working at 0530 h and continued, uninterrupted, for his entire shift. At one point he confided in a co-worker, who was later interviewed by a medical anthropologist, that his stomach hurt. Yet he continued working despite the risks. Stopping for a break from the sun, or even to drink water, could compromise the team's high productivity demands and, as he knew, cost him his job. On this occasion, his co-worker agreed to trade places so he could work in the shade. Later, when the man returned home, he told his wife his stomach still hurt. Thinking he was suffering from indigestion, he took over-the-counter antacid medication. Yet after dinner the pain grew worse, and he subsequently died.

Farmwork is one of the most dangerous occupations in the USA,[86,87] and rights violations are among the factors that cause and aggravate the deleterious clustering and interaction of disease and health adversity for people employed in this industry. Migrant farmworkers' health vulnerability is closely related to the high levels of exploitation and job insecurity that force them to work despite physical signs of sickness or fatigue. For instance, dehydration and heat exhaustion are a common and dangerous combination among farmworkers that is caused not only by constant and prolonged exposure to extremely high temperatures, but also by consumer food safety regulations that prohibit them from bringing their own water to work. From a syndemics standpoint, this vulnerability results from a complex interaction among factors including: (1) stress; (2) unsafe occupational conditions; (3) disempowerment and exploitation; and (4) inadequate and insufficient health-care services.

A syndemic sensibility suggests multiple avenues for a human-rights-based response. Public health and advocacy efforts must target rights violations that pose occupational hazards. Systematic measures to provide protection from extreme heat and pesticides, for instance, would reduce migrant farmworkers' vulnerability to dehydration, stress, and musculoskeletal injury. It is equally necessary, however, to look further upstream. Farmworkers' disempowerment, which facilitates their exploitation, is hazardous to their health, in part because it denies them opportunities to advocate for themselves. Disempowerment can also lead farmworkers to internalise assertions that they are undeserving of health-related attention, investment, and concern. Such claims are especially galling given the US food system's overwhelming reliance on precarious, often unauthorised migrant labourers like the man described earlier.

In the policy domain, one way to mobilise the political will to improve farmworkers' health and safety is to open up public conversation about the economic and social ties that bind consumers to the farmworkers who produce their food. One successful example of this strategy is the campaign by the Coalition of Immokalee Workers, a workers' rights organisation, to convince farmers who grow tomatoes in Florida to improve occupational health conditions and worker protections. Through targeted boycotts of national fast food chains and, subsequently, a major agreement with the retail giant Walmart, the Coalition's campaign transformed the tomato fields of Immokalee, FL, from what was described as the worst to the best within a period of 3 years.[88]

At the clinical level, the biosocial framework of syndemic vulnerability offers clinicians and health-care institutions valuable diagnostic tools and intervention strategies. By using syndemic diagnostic tools, clinicians can obtain targeted social histories that extend beyond the immediacies of clinical presentation to account for work conditions, sources of stress, and other factors affecting farmworkers' mental health and wellbeing. Clinicians treating farmworkers and the relevant medical societies can develop syndemic care protocols[11] to treat common clusters of disease, including kidney damage, cardiovascular disease, diabetes, musculoskeletal disorders, and mental health concerns. At a minimum, this would include measurements of creatinine, cholesterol, and glucose concentrations, mental health screening, blood pressure, and assessment of musculoskeletal function and signs of toxin exposures by carefully examining the skin and eyes.[89] Beyond these clinical strategies, syndemic care must meet the human rights framework's AAAQ principles: available, accessible, acceptable, and high quality.

These are not just clinical challenges but systems challenges as well. Clinical and administrative staff at clinics and community health centres must be trained to provide linguistically and culturally appropriate care as well as rights education, follow-up calls or visits, and other measures to ensure continuity of care.

At the same time, clinicians and other health professionals should begin to think syndemically, and encourage others to think syndemically, about the range of factors that affect migrant farmworkers' health. Health professionals can, and should, work with colleagues in other fields, ranging from community health workers to politicians, policy makers, journalists and others, to tell more complex stories about farmworkers and farmwork than typically are known. Steps like these can help consolidate the kind of political will needed to identify and act on opportunities to intervene upstream.

associated with indoor cooking over open flames and outdoor burning of trash; and mental health conditions associated with stress, anxiety, trauma, and uncertainty. Violence, including both interpersonal violence and violence at the hands of the police, is also a common risk. In informal encampments where people live in improvised shacks that cannot be locked, women in particular face heightened risk of sexual violence,

	Potential research questions	Potential intervention-related questions
Social medicine	How does political and economic context affect migrants' health?	What political and economic changes are needed to eliminate risks to migrants' health and promote their health and wellbeing?
Social epidemiology	What upstream factors adversely affect migrants' health, to what extent, and via which causal pathways?	How can public health practitioners, policy makers, or other key stakeholders address upstream factors in ways that will improve migrants' health?
Health equity	What health differences between migrants and other populations constitute health inequities (ie, differences that are avoidable and unjust)?	What concrete steps—in the clinical, public health, policy or civil society domains—are needed to rectify these inequities? How ought these steps be advanced and executed?
Medical humanitarianism	What are migrants' immediate health needs?	How can migrants' immediate needs be addressed?
Health and human rights	Are migrants' rights being violated, and if so, are those violations adversely affecting their health?	How can rights-holders be educated about their rights and empowered to demand the protection and fulfilment of those rights from duty-bearers? How can governments, international organisations, and private actors be held accountable for the duties they bear?
Syndemics	How does the migration process, including the complex contexts encountered at each migration stage, contribute to the co-occurrence of and deleterious interaction among diseases and other forms of health adversity?	What actions can be taken to disrupt the social and structural contexts that promote syndemics? How can clinicians better understand, and clinical settings better respond to, migrants' complex health needs? What forms of political action and structural change are needed to modify social structures and institutions that contribute to syndemic vulnerability, or to replace them with health-promoting institutional frameworks?

Table 3: **The case of migrant health—different idioms, divergent goals**

especially in the darkness of night. For some migrants, these exposures are overlaid upon others, including non-communicable diseases developed before migration as well as injuries incurred during the migration process.

Coordinated settings like state-run and privately operated refugee centres can also become harmful environments of syndemic vulnerability (panel 2, panel 3). Refugees are at especially high risk of trauma-related mental health disorders from exposure to violence or other traumatic events either in their country of origin, during the migration process, or both.[95] Unsurprisingly, post-traumatic stress disorder is the most common mental health problem affecting refugees, with documented prevalences in the range of 30–50%,[96] compared with a prevalence of 3% among the general population.[97] Depression, anxiety disorders, and chronic pain are also common,[96,98] and post-traumatic stress disorder often co-occurs with depression and other psychiatric and somatic comorbidities.[97] Strong evidence suggests that refugees' mental health is particularly vulnerable to the harmful effect of post-migration factors,[99] including local immigration policies,[100] migrants' legal and visa status,[101,102] frequency of relocation,[100] living conditions during the resettlement process,[100] and likelihood of facing detention.[98] At all stages of the migration process, including resettlement, mutually reinforcing dynamics among traumatic events, biological conditions (including non-communicable diseases), and psychological, social, and legal factors expose refugees to syndemic vulnerability.

For migrants in long-term detention, the syndemic mental health risks are similar but potentially far more serious—especially for children and adolescents (panel 3).[82,103] This risk is especially evident among young children, for whom severe mental harm disrupts the course of normal development, and for unaccompanied minors. In children (6 years and younger), regression and bed wetting are common, as are delays across the range of developmental domains including language, social, and emotional development; behavioural regulation; and attachment. Older children and adolescents tend to exhibit other comorbidities including high rates of suicidal ideation and attempts at self-harm, enuresis, sleep disturbances, and severe somatic symptoms.[104] Detained children have extremely high rates of co-occurring post-traumatic stress disorder, major depression, and anxiety disorders.[105] Although some of these conditions precede migration, prolonged incarceration is an important aggravating factor if not a precipitant. The negative impact of long-term incarceration on adult caregivers severely affects children in their care, as does prolonged family separation. Unaccompanied minors are especially vulnerable.

These forms of developmental and mental health vulnerability interact with other dangers to children's physical health. According to a field study[84] by the Australian Human Rights Commission, for instance, 21% of the 1700 detainees at the off-shore Christmas Island detention center are children. Representatives of the Australian Human Rights Commission[82,84] found free-flowing waste, insufficient and expired food, high rates of infectious disease among children combined with inadequate hand-washing facilities and lack of soap, a lack of toys or safe places to play, and little opportunity for meaningful or satisfying activity.[82] Developmental check-ups were not regularly conducted, vision and hearing problems were not regularly screened or addressed, and dental care was unavailable, in some cases contributing to severe tooth pain and infections.[84] Although Australia's High Court disagrees, the UN High Commissioner for Refugees asserts that the perpetuation of these environments—which can be described as environments

of extreme syndemic vulnerability—violate Australia's human rights obligations as a signatory to the Convention on the Rights of the Child, among other relevant agreements.[106]

Different forms of syndemic vulnerability affect migrants who live precariously on the social, economic, and political margins of their new countries of residence (panel 4).[86,87] In the USA, for instance, migrants comprise more than 75% of the country's vast agricultural labour force, and more than half live and work in the country on an unauthorised basis.[107] Migrant farmworkers are low paid, have little control over their occupational and living environments, and face the constant risk of job loss or even deportation. They work long hours in physically demanding jobs, often in extremely high temperatures. Many farmworkers are exposed to pesticides without proper protective equipment, and many have limited access to water while at work.[86,87,107,108] These exposures, both independently and in combination, have been linked to kidney damage and other serious health conditions, at times with fatal consequences. Constant stress, resulting in the continuous production of stress hormones and associated allostatic load, has been linked to a range of physical and mental health conditions including hypertension, cardiovascular disease, kidney disease, diabetes, obesity, and related complications such as strokes.[109–111] With time, migrant farmworkers accumulate a physiological toll that can include musculoskeletal disorders, severe chronic pain, cardiovascular disease, uncontrolled diabetes, kidney failure, blindness, stroke, and mental health conditions.[86] Yet most farmworkers in the USA are entitled only to minimal health-care services, if any, and can rarely access disability benefits or other social programmes if they have serious health problems. When health care is available, effective chronic disease management is difficult, treatment adherence challenging, and medical bills unduly burdensome.[16,86,87,112]

Syndemic insights and rights-based change

For vulnerable migrant populations, the negative feedback loops among comorbidities and upstream social, political, and structural determinants are eminently clear. Equally clear are the strategic advantages of viewing these environments of syndemic vulnerability through a combined syndemics/health and human rights lens, which offers valuable resources for action in three domains: research, policy, and practice.

From a research standpoint, social epidemiologists and health and human rights experts have increasingly recognised that upstream determinants of health are not just distal factors lying beyond the scope of intervention.[113] Rather, they are fundamental or determining factors[46] of health inequities in general and syndemic vulnerabilities in particular. Many of these determinants lie beyond the traditional boundaries of the health domain, and many are fundamentally political. After all, "health is a political challenge, not a technical problem," as Ilona Kickbusch explains, and "looking at health through the lens of political determinants means analysing how different power constellations, institutions, processes, interests, and ideological positions affect health within different political systems and cultures and at different levels of governance".[13] A combined syndemics and health and human rights approach, which reflects anthropological concerns about power, context, and subjective experience, is ideally suited to this task. By mapping the links between widespread human rights violations and specific forms of syndemic suffering, a combined syndemics/health and human rights approach can help clinicians, health researchers, and other stakeholders expand their field of vision and better understand how power asymmetries and complex contexts—social, political, economic, historical, even environmental—shape and constrain the lives of migrants and other vulnerable groups. Similarly, this approach can help identify potential partners in collaboration, potential points of political leverage, and ripe opportunities for upstream intervention. The next challenge, of course, is to mobilise the political will needed to work collaboratively towards meaningful changes in law, policy, and practice. At each step, the voices of those most affected will need to be part of the conversation.

An example is illustrative. Many syndemic relationships can be explained in terms of so-called plausible causal chains that already are well understood.[114] For instance, anthropologist Sarah Horton asks, "if a [farm]worker who suffers from high blood pressure dies of a heart attack on a hot day, who is to say whether the primary cause of death is hypertension or heat exhaustion? How do we know whether his heart failed on its own accord or at least partly because of the heat?"[86] From a clinical standpoint, the range of possible mechanisms is clear. From a population health standpoint, it is clear that excess deaths under circumstances like these can only be prevented by first understanding the circumstances themselves, then coordinating across sectors to seize upstream opportunities to change the laws, policies, and practices that have brought them into being.[42]

In the policy domain, cross-fertilisation between syndemics and health and human rights can broaden and enhance existing approaches to health policy-making, especially those that already bridge policy sectors. Three examples are illustrative. First, Human Rights Impact Assessments[79] can be adapted to reflect a syndemic sensibility, then employed regularly as a routine tool in the process of setting and evaluating health policy. A second opportunity involves WHO's "Health in All Policies" governance strategy,[41] which already reflects an incipient syndemic sensibility. "Health In All Policies" calls on clinicians and other health workers to collaborate with representatives across government sectors, especially those outside the health domain, in developing policies and practices to tackle health inequities.[115] In "Health in All Policies"

deliberations, a human rights-based understanding of syndemic vulnerability can be especially valuable at two junctures: in deciding who should take part in policy-framing discussions, and in determining what kinds of data such discussions should consider. Third, professionals with human rights experience can be encouraged to take up positions in clinical, public health, and policy environments—something that already is taking place in relation to "Health in All Policies".

In the clinical domain, a combined syndemics/health and human rights approach can help clinicians better connect the dots among upstream determinants, complex clinical realities, and social justice obligations and, furthermore, clarify both the value and feasibility of doing so. It can spark new conversations about the health professions' historic commitments to tackling inequities and advancing social justice, and it can highlight the need for new research and evaluation tools once syndemic vulnerabilities have been identified. For example, population-level tools are needed to monitor potential comorbidities and adverse synergies. Similarly, clinicians and health-care institutions need protocols for providing syndemic care to patients. As Mendenhall and colleagues[11,12] have shown in their work on diabetes–depression syndemics, these tools and protocols must be developed in, and adapted to, local contexts. Tools and protocols like these can complement innovations like hot spotting,[116] holistic care,[40] the establishment of patient-centred medical homes,[117] and programmes of engaged accompaniment and community health-worker support.[118] All of these strategies advance a core commitment shared by professionals in the syndemics and health and human rights fields: an insistence that vulnerable people's health needs must not be overlooked—that they, like the rest of us, are equal in worth and thus equally deserving of health-related attention, investment, and concern.[38,39]

Clinicians cannot be expected to tackle the health inequities and syndemic vulnerabilities their patients face alone. They can, however, collaborate with public health professionals, policy makers, civil society representatives, members of vulnerable groups, and others, both within and beyond the health domain, to advocate for structural and political changes that can benefit their patients, the communities to which their patients belong, and society as a whole. There are multiple levels and multiple realms in which clinicians can take action including, as the British Medical Association points out, the realms of clinical care, community leadership, advocacy, and research.[40]

Collaboration along these lines might necessitate the acquisition of new skills. For instance, many public health professionals' "training has not equipped them well to analyse political context and understand complexities, and to frame arguments and act effectively in the political arena".[13] According to Ilona Kickbusch, meaningful action on the structural and political determinants of health will be possible only when public health professionals have "a much better understanding of how politics works and what politics can achieve".[13] Arguably, the same holds true for clinicians.

On this count, a combined syndemics/health and human rights approach, which draws insight from medical anthropology, social epidemiology, human rights, international law, and public health practice, can help health professionals and their future colleagues identify and confront the blind spots in their training. In schools of medicine, dentistry, the allied health professions, and public health, exposure to this approach can help cultivate health professionals who feel compelled to participate in upstream efforts to advance social justice, especially in the health domain. To make a difference, these health professionals will need a robust appreciation of the ways in which power asymmetries influence health vulnerability. They will also need to be sensitive to the complexities of context, attuned to the subjective experience of the people and communities they serve, and willing to collaborate across sectors and disciplines in mobilising for social justice. Crucially, health professionals must also have a keen understanding of how equity in health is fundamentally "a political challenge, not merely a technical outcome".[119]

Conclusion

A strong and provocative claim underpins the combined syndemics/health and human rights approach to health inequities that we advance: the claim that the human right to health offers protection from syndemic exposures. The broad interpretation enshrined in General Comment 14 is a great improvement over narrow legalistic and individualistic interpretations, and it now bolsters an impressive array of contextually sensitive and politically astute strategies for improving the health of vulnerable populations. Yet, even the interpretation in General Comment 14 remains unreasonably narrow in two ways. How would our understanding of the right to health change if we took seriously the egalitarian claim that "everyone's life is equally important"[21]? And how would our understanding change if we defined health, in Amartya Sen's words, as the "physical and psychological status which allows for the full development of each person's capabilities"?[19,20]

If these are the definitions we employ, then progress toward realising a universal right to health must be evaluated in terms of equality of condition.[20] This is not a claim that all people have a right to be healthy. Even if everyone had equal access to health care and the underlying determinants of good health, differences between individuals would persist as a result of both natural (biological) variation and personal choices unrelated to the distribution of resources and power. Rather, an egalitarian interpretation insists that all people have an equal claim to the measure of goods and services necessary to live a dignified, flourishing life. Realising this right entails access not only to health care, but also to the social,

political, and structural determinants of good health. An egalitarian conceptualisation of the right to health offers a strong foundation for recognising environments of syndemic vulnerability, understanding their impact on individuals and populations, and intervening in concrete ways. On all three counts, politics has a central role.

For multiple reasons—human rights reasons, public health reasons, reasons of health equity—the protection of vulnerable people from syndemic suffering is both an urgent need and a fundamental matter of social justice. By melding insights from human rights and syndemics in advancing an egalitarian understanding of the right to health, we find ourselves facing three new challenges: to rethink our roles as health professionals and health researchers; to learn new strategies for collaborative engagement, especially in politically charged environments; and, above all, to reject assumptions that the grave health inequities all around us are either natural or inevitable.

Contributors

SSW conceptualised the manuscript and led the writing. MK, CEA-B, and ND drafted sections and contributed to the theoretical framing. All authors reviewed and revised the manuscript, and all approved the final version for publication.

Declaration of interests

We declare no competing interests.

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