

**COVID-19 and the Status of Women's, Children's, and Adolescents' Health and Rights:
A Targeted Literature Review of Current Evidence for Action on Universal Health Care (UHC) and
Accountability**

for the UN SG's Independent Accountability Panel for Every Woman, Every Child, Every Adolescent (IAP)

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Background

In December 2019, doctors in Wuhan, China began to report an escalating number of cases of pneumonia of an unknown cause resulting, in some instances, in acute respiratory distress and other serious complications (Zhu N et al., 2020). By January 2020, the source of these pneumonia cases was identified as a novel coronavirus that the World Health Organization (WHO) subsequently named SARS-CoV2, while the disease for which the virus is responsible was named COVID-19 (WHO(a), 2020). The virus, highly contagious, quickly spread to almost every country, with the exception of isolated island nations and, on March 11, 2020, WHO declared COVID-19 a global pandemic (WHO(b), 2020). By May 18, 2020, there were more than 4.6 million confirmed cases globally, as well as 311,847 confirmed deaths occurring, to a large extent, among those over the age of 60, those with pre-existing conditions (e.g. hypertension, obesity, diabetes), and health workers (WHO(c), 2020). At the same time, the published number of confirmed cases likely far underestimates the true extent of the epidemic as confirmation depends on testing, and both the tests themselves and the human resources, logistics, and supply-chain capacity required for countries to carry out tests have been almost universally in short supply (Bell, 2020; Bauchner et al., 2020; Siow et al., 2020; Perez and Abadi, 2020; Tanne et al., 2020; Ranney et al., 2020).

Among high risk groups, a significant proportion of COVID-19 patients who have fallen ill have required facility-based supportive care (e.g. supplemental oxygen, ventilation); additionally, once ventilated, the prognosis for many patients is extremely poor (Zhou et al., 2020; Wu and McGoogan, 2020; Pedersen et al., 2020; Garg et al., 2020). Within weeks, critical care units of hospitals in some countries, along with palliative care, mortuary and burial systems, became overwhelmed (WHO(d), 2020; Constantini et al., 2020; WHO(e), 2020). As such, countries around the world have responded to the virus with policies involving varying grades of social isolation with the intent of flattening the statistical curve representing daily new cases of infection. These policies range from social distancing in public places, to voluntary stay-at-home measures for at-risk individuals, to mandatory shelter-in-place orders for entire populations resulting in wholesale shutdown of social and economic life (Niu and Xu, 2020; Hellewell et al., 2020). The effects of the COVID-19 pandemic, therefore, extend far beyond the symptoms of disease, touching upon almost all aspects of human life.

On January 30, 2020, there were 54 English language articles on SARS-CoV2/COVID-19 (Li W et al., 2020). On May 7th, there were 6,963 on PubMed alone. By May 18, this number had doubled to 13,148. On Google Scholar, the number of articles on COVID-19 increased from 24,000 on May 7th to 65,000 on May 18th, although some of these are likely repeats. As the COVID-19 pandemic is evolving rapidly and in real time, the research landscape is both vast

and not infrequently contradictory and confusing, with many studies being conducted based on extremely small sample sizes and pushed through expedited review processes, and anecdotal evidence often circulating as fact resulting—alongside proliferating “fake news”—in what has been termed a “infodemic” (Zaracostas, 2020; Cohen and Kupferschmidt, 2020; Baines and Elliott, 2020). This means that there are a number of questions with respect to the impact of COVID-19 on different population groups.

COVID-19, for example, is unfolding simultaneously to the implementation of the Global Strategy for Women’s, Children’s and Adolescent’s Health 2016-2030 (“the Global Strategy”) and the broader Every Woman, Every Child movement (EWEC, 2015). The Global Strategy focuses on progress on women’s, children’s, and adolescents’ health and rights in the context of both the Sustainable Development Goals (SDGs) and the desired goals of universal health coverage (UHC) and primary health care (PHC) as foundational to the health systems of every nation on the planet. Overseeing the accountability of both global and national stakeholders to the action areas outlined within the Global Strategy, the Independent Accountability Panel (IAP) works to ensure that not only are governments and other stakeholders improving the health and well-being of women, children, and adolescents, but also that environments exist to enable people and communities to drive change, claim their rights and hold leaders to account (IAP, 2020). IAP does so utilizing a framework at the heart of which are the following key functions or processes of accountability: Monitor, Review, Remedy and Act (IAP, 2020). COVID-19, with its far-reaching implications for health, well-being, social and economic prosperity, and human rights, clearly has enormous potential to erode the work done on behalf of the Global Strategy and present major challenges related to accountability for women’s, children’s, and adolescents’ health and rights.

This targeted, rapid review seeks to quickly assess the state of knowledge with respect to [evidence of outcomes](#) in areas of relevance to women’s, children’s, and adolescents’ health and rights in the context of COVID-19. The review sought data on areas of interest to the IAP—including UHC—and to those working on the Global Strategy, and attempts to identify: 1) what information on [outcomes](#) relevant to accountability exists and 2) where there are gaps in data. The paper prioritizes areas where EWEC and accountability intersects: 1) the economic and social burden of COVID-19 containment and mitigation measures; 2) maternal, child, and adolescent health and rights issues, including sexual and reproductive health and rights; and 3) data systems. At the same time, this paper recognizes that, at this early stage in the pandemic, it is likely that documentation on accountability is extremely scarce and, thus, it may not be possible to, for example, map findings clearly utilizing IAP terminology.

Methods

This rapid narrative review was conducted from May 5-8, 2020, with additional gap-filling taking place over the following week. It looked at literature published between January 1, 2020 and May 7, 2020, and utilized the following initial search string in PubMed and Google Scholar:

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((("covid") OR ("coronavirus")) AND ((("gender") OR ("sex") OR ("women") OR ("children") OR ("adolescent"))))
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Adding (“accountability”) to the search string produced no significant papers. Hence, the individual papers had to be skimmed for [issues specific to women’s, children’s, and](#)

adolescents' health or rights. The review then searched purposively for topics that came up in the literature in order to gap fill. Thus, the search string was utilized with additional subjects added to it (e.g. AND "domestic violence" or AND "nutrition").

This is not a systematic review. The time allotted for the project was extremely short (5 days, plus 5-6 days for follow-up). Because the COVID-19 pandemic is being experienced in real time, the number of articles produced by this search string increases exponentially on a daily basis. Many articles have not yet been properly abstracted or attached to key words clearly. The search strategy pursued eventually became one of just "combing the literature" relevant to the particular topic being explored, following potential leads, and allowing oneself to engage evidence that perhaps has not yet been broadly explored but does, in fact, have interesting data potentially salient to issues of accountability.

Because this paper is looking only at evidence of impact on areas relevant to women's, children's, and adolescents' health and rights in the context of the last four months since the COVID-19 pandemic began, the exclusion criteria for literature discussed within is as follows:

1. Literature that discusses concerns about impact of COVID-19 on women's, children's, and adolescents' health and rights not tied to either qualitative or quantitative measurement of outcomes.

Thus: Literature must discuss some sort of research tied to some sort of outcome.

2. Literature that projects or models potential outcomes on women's, children's, and adolescents' health and rights based on evidence from past crises (e.g. the 2008 financial crisis, the H1N1 pandemic, the Ebola epidemic, etc.).

Thus: Literature must discuss evidence collected since the start of the COVID-19 pandemic.

3. Literature that advocates for interventions/investments in various areas of relevance for women's, children's, and adolescents' health and rights in the absence of real-time data on the relationship between these investments and real-time outcomes.

Thus: Literature must tie advocacy to documentation of COVID-19 impact on women's, children's, and adolescents' health and rights.

In short: the papers we include had to have evidence on women's, children's, and adolescents' health and rights as they have been impacted over the last four months from COVID-19.

This means that many very good papers either imploring urgent action on behalf of subjects relevant to both EWEC and the IAP, or mapping out potential areas of concern, interest or investment, have necessarily been excluded, as have newspaper articles and blog posts in the absence of robust sources for the information within. Unfortunately, in the COVID-19 publication glut, what this review has found is that many of these articles about what "may" or "could" or "should" happen have already been cited in other articles—often multiple times—as representing evidence of outcomes having already come to pass. While there is much that the global community needs to do both to secure women's, children's, and adolescents' health and rights in the context of COVID-19, and ensure global and national accountability to the Global Strategy in spite of the ongoing pandemic, this review emphasizes that there is still very much we do not know.

This review, therefore, resists the temptation of treating “may,” “might,” “could” or “should” as “has already” in the absence of clearly documented evidence of fact.

Note: Since January 1, 2020, there have been thousands of articles published, many of which are currently pre-peer-reviewed preprints made available through open-source information sharing platforms given the rapid evolving nature of the pandemic. Therefore, the publication status of the articles discussed herein will most certainly change over the coming weeks (even over the coming days). Any utilization of examples from this paper will need to be checked against citations going forward in case the publication status of the article has changed, and in case data within these articles undergoes rethinking/reanalyzing as the article moves through peer review.

Findings

1. The Economic and Social Burden of COVID-19 Containment and Mitigation Measures

1.1. Violence against women and girls

Since the beginning of the COVID-19 pandemic, there have been concerns in countries around the world that containment and mitigation measures including lockdowns and restrictions on movement will lead to an increase in domestic violence (WHO(f), 2020). UNFPA and its partners project that an increase of violence by 20 percent would lead to an additional 15 million cases of intimate partner violence (IPV) for 3-month lockdowns, 31 million cases for 6-month lockdowns, 45 million for 9-month lockdowns, and 61 million cases for one-year lockdowns (UNFPA(a), 2020). Health agencies note that data on this issue is scarce (WHO(f), 2020) and indeed our targeted review found limited, systematic qualitative and quantitative studies on the topic in the public health and medical literature. However, evidence is emerging from media and police reports of surges in hotline calls and domestic violence incidents and calls for service in countries as diverse as Brazil, Argentina, Spain, U.K., South Africa, France, Cyprus, Singapore, Australia, the U.S., Canada, and China (see, for example, Usher et al., 2020; Vieira et al., 2020; Boserup et al., 2020). Based on this emerging evidence, UN Women’s recent brief on violence against women and girls states that domestic violence reports in France have increased 30 percent since the lockdown on March 17, domestic violence calls in Argentina have increased 25 percent since March 20, and helpline calls have increased by 30 percent in Cyprus and 33 percent in Singapore (UN Women(a), 2020). Moreover, the Counting Dead Women project has found that domestic abuse killings in the UK have more than doubled since the beginning of Covid-19 lockdown restrictions (Grierson, 2020).

Published studies in the criminology literature have looked at domestic violence as a subset of studies on the impact of COVID-19 measures on crime. A study of daily counts of service calls in Indianapolis and Los Angeles (between January 2 to mid-April 2020) found an increase in domestic violence service calls though this did not lead to an increase in reported aggravated assaults (Mohler et al., 2020). Another study of crime counts in public data on crime in Los Angeles (between January 1 and March 28, 2020) found no impact of containment measures on intimate partner assault and another study in 16 large American cities found no impact of social distancing measures on serious assaults in residences (the

paper's proxy measure for domestic violence) (Campedelli et al., 2020; Ashby, 2020). These studies, however, only measured crime counts in the first weeks after the introduction of measures and recognize that it may be too early to detect meaningful impact. A more recent study of domestic violence calls to police in 15 large U.S. cities before and after social distancing found a 10.2 percent increase in domestic violence calls (Leslie and Wilson, 2020). The authors of these papers and other researchers emphasize that domestic violence is difficult to track through police data; even before the COVID-19 pandemic, only an estimated 50 percent of victims call police about assault (Li and Schwartzapfel, 2020). Measures associated with the COVID-19 pandemic mean that victims may be even less likely to call police, or other service providers including hotlines, since they are home with their abusers and risk being overheard.

Experts emphasize the difficulties of collecting data on violence against women and girls while in the middle of the COVID-19 pandemic (Rogers, 2020). Researchers for population-based surveys cannot conduct interviews with women in homes, because of safety and confidentiality concerns, and because researchers cannot easily travel in the context of social distancing regulations. Additionally, as already mentioned, the interpretation of service data is complex when women are home with abusers, and this data should therefore not be used as a proxy for prevalence. Experts recommend instead that evidence be drawn from key informant interviews with service providers and front-line workers; rapid assessments of service availability; and administrative data that can shed light on how different sectors (police, judicial, health, and social) are responding (Rogers, 2020).

1.2 Livelihood

While modelling projects that COVID-19 will push 40-60 million people into extreme poverty (CCSA, 2020), four months into the pandemic, data is only beginning to emerge as to the real-time effect of containment measures on employment and household livelihoods. By the first week of April, for example, countries with mandatory or recommended workplace closures represented 81 percent of the global workforce, with the projected 10.5 percent drop in total hours worked by workers around the world by the end of June (CCSA, 2020). Unlike other economic crises in which men's employment and livelihoods tend to be impacted more significantly than women's, the unique nature of the COVID-19 pandemic (e.g. that it has resulted in extreme social distancing measures) has meant that there is a potential—in some countries—for women's livelihoods, income, and employment to be disproportionately impacted as 1) domestic child care needs have increased with school and day care closures and 2) women's labor (again, in some countries) may have been more likely to take place in the sorts of confined spaces that would have been impacted by lockdown (Alon et al, 2020).

For example, a survey from UN Women of respondents reporting either a decrease or a loss in informal and formal employment in four countries in Asia and the Pacific region (Bangladesh, Maldives, Pakistan, the Philippines) suggests that there have been devastating effects on overall employment (UN Women(b), 2020). Additionally, with respect to loss of formal employment, initial red flags are raised by data coming from Bangladesh and the Philippines which demonstrate significantly more women reporting a decrease in formal employment than men (83 percent women reporting compared to 14 percent men in Bangladesh, 51 percent women reporting compared to 34 percent men in the Philippines). It is worth a "deep dive" into these numbers as the context in which they are being reported likely

depends on a number of factors (e.g. government containment and mitigation policies, demographics of countries' major industries, definitions of what counts as "essential workers", school closures and increased domestic care burdens, cultural issues surrounding women in the informal and formal workplaces, etc.).

More worryingly, the same study looked at the proportion of resource-users who noted increases/decreases in support coming from various sources since the start of the pandemic, disaggregated by gender. In Bangladesh, Maldives, and Pakistan, across almost every category (government support, charity, family business income, food or income from agriculture, remittances, paid income, savings, and support from family and friends), not only has there been an almost unanimous reporting of decrease in sources of support, but women are disproportionately reporting loss of support than men, while men are more likely to report increased support than women. The exception is the Philippines where men are more likely to report across every category a decrease in support, but are more likely than women to report increase in government and charity support. Again, this data requires a deep dive into these numbers in order to better understand the context. However, both data on employment and data on sources of support suggests that there might be EWEC accountability issues at stake for certain countries as it is clear that not every country is weathering the impact of COVID-19 equally, nor weathering it equitably (UN Women(b), 2020).

Severe loss of income and livelihood has also been documented in high-income countries (Coibion et al, 2020). In the UK, 28 percent of adults surveyed reported losing income resulting from the COVID-19 pandemic, with those who experienced an income loss of 50-75 percent reporting higher rates of food insecurity (8.2 percent) (Loopstra, 2020). Thus, not only is COVID-19 heightening vulnerability among already vulnerable populations, but creating vulnerability in populations that, to date, have not been as vulnerable (Loopstra 2020).

By early May, 151 countries had put in place social safety net measures to mitigate the impact of COVID-19 on livelihoods (Gentilini et al., 2020) and a number of agencies and organizations have launched COVID data hubs and dashboards with respect to monitoring the social and economic impacts of COVID-19. A list of these dashboards can be found in Table 1 (see Section 3: Data Systems). However, much of the data is not yet fully disaggregated by gender and age, and many of the statistics are based on modelling using assumptions from previous economic crises and public health emergencies. Modelling is important to design mitigation strategies, but is insufficient to describe real-time impact of COVID-19, as the pandemic—with its mass lockdowns, school closures, disproportionate impact on the elderly, and cases spread across high-, middle- and low- income countries with varying access to resources—in many ways, does not resemble what has come before.

1.3 Education

One COVID-19 policy that many countries have implemented is the closure of schools. As of 10 April 2020, 194 countries had closed schools and universities. UNESCO estimates that 1.6 billion children and adolescents, representing 90 percent of the school and university population, were out of school and university (UNESCO, 2020). In late March, it was estimated that almost 60.2 million teachers were not in the classroom (UN, 2020). In May, a few countries began to cautiously open schools and by May 15, UNESCO estimated that 158 countries had

school closures, affecting 1.2 billion learners, representing 69 percent of total enrolled learners (UNESCO, 2020).

Studies and modelling have begun to assess the impact of these school closures on COVID-19 transmission. A recent systematic review found that no data yet exists to show the relative contribution of school closures (in isolation of other control measures) on transmission (Viner et al., 2020). One study modelled the impact of social distancing and school closures in China, based on contact survey and tracing data in Shanghai and Wuhan, and concluded that school closures on their own do not halt transmission but can decrease peak incidence by 40-60 percent and delay the epidemic (Zhang et al. (a), 2020) . Other modelling studies have produced conflicting results (Viner et al., 2020).

But what is the impact of school closures on the right to education? Though it is too early for there to be in-depth published studies on the adverse impacts of school closures, there are concerns about disruptions in learning and reductions in the human interactions that young people experience at school which are important for social and behavioral development (UN, 2020). A primary concern is that school closures will increase inequities. Along with school closures, some countries and schools have implemented alternatives such as distance education through TV or radio and online learning programs. But fewer than 50 percent of households in most countries around the world have access to the internet (CCSA, 2020). Moreover, in 60 low- and middle-income countries, UNICEF analysis of DHS data since 2010 shows that 73 percent of urban households have televisions while only 38 percent of rural households do so (CCSA, 2020; UNICEF(b), 2020). These programs thus can increase inequities in learning within and between countries as children and adolescents from lower income households may struggle to access or complete them (CCSA, 2020; Van Lancker and Parolin, 2020). Additionally, school closures mean that many children will miss out on school meals (as described in the next section), lead to childcare difficulties, put increased pressure on parents to assist with learning from home, and could lead to an increase in child labor and child marriage (UN, 2020). Data on these adverse impacts of school closures do not presently exist and these questions are therefore an important focus for future research.

1.4 Food Security and Malnutrition

The threat of COVID-19 to global food security has been highlighted by numerous stakeholders as one of the biggest areas of critical concern for women's, children's, and adolescents' health and rights. Women and children in many low- and middle-income countries face both chronic and acute protein energy and micronutrient undernutrition and often have limited access to food-based and other social safety-nets (WFP(a), 2020). Numerous countries have had to take steps to ensure continuity of food supply chains, in order to prevent food shortages or food price spikes due to disruption of production and delivery systems, hoarding behavior, or export restrictions (FAO, 2020). Additionally, hunger and malnutrition are an assumed outcome of mass employment and economic decline triggered by social isolation policies (WFP(d), 2020; UN Department of Global Communications, 2020; Food Security Information Network, 2020). Global production and prices of the three main food staples were—as of April 2020—at or near all-time highs; however, World Bank, FAO, and IFPRI have all documented growing domestic food insecurity with countries starting to grapple with labor shortages across the food chain, loss of income from unemployment, and occasional price gouging (FAO, 2020; World Bank, 2020; Dev, 2020; Rearadon et al., 2020).

Moreover, food insecurity is being documented in high income countries as well. For example, 16.2 percent of adults surveyed in Britain report post-lockdown experiences of food insecurity (a figure that has quadrupled from pre-lockdown surveys), with a lack of food in shops accounting for 40 percent of food insecurity experiences, with adults with disabilities and adults with children disproportionately affected along with Black, Asian, and other ethnic minorities (Loopstra, 2020).

As of yet, while there is much being documented on the steps that governments and international agencies are taking to mitigate food insecurity both at global and national levels, there is less documented evidence of the impact of COVID-19-driven food insecurity on women, children, and adolescents, and much of the evidence of outcomes or impact is indirect. For example, in one of the most widely-cited statistics related to COVID-19, WFP has pointed out that school closures alone have resulted in 370 million children—out of the over 1 billion children now home from school—missing out on school meals, including nine million at-risk children benefiting from WFP-sponsored school feeding initiatives, although the impact with respect to children’s nutritional status has yet to be documented (WHO(b), 2020; WHO(c), 2020). Elsewhere, a rapid assessment by IFPRI found that only 11 percent of initial COVID-19 social protection responses have shown gender-sensitivity, and most of these were very limited, although we still do not know how women and children have been affected and whether or not such gaps have already been addressed in the weeks since the study was conducted (Hidrobo et al., 2020). Other work by IFPRI explores the potential impact of COVID-19 on vulnerable populations, pointing out that documented COVID-19 disruptions to food supply chains (e.g. dairy markets in India, vegetable markets in Ethiopia, livestock production in China) draw striking parallels to past crises (e.g. global recession, regional natural disasters, epidemics) that resulted in severe deterioration of the nutritional and health status of women and children (Headey and Ruel, 2020). While these sorts of outcomes should be expected, have they come to pass with COVID-19 and, if so, how and to what magnitude?

There is also some indirect evidence that a combination of social isolation is having a documented impact on overnutrition and attempts to tackle childhood obesity. In Europe and North America, low-income and minority students often rely upon schools for healthy, micronutrient rich meals and regular exercise, as well as mental health. Lockdown from COVID-19 has cut off access to school meals and physical education programs, as well as after-school sports programs (Dunn et al., 2020). Research from childhood and adolescent obesity programs in Italy and the United States (New York City, Philadelphia) have documented increased risk for/intake of ultra-processed, calorie dense foods, and increased snacking, sleeping, and screen time, alongside greatly decreased mobility among enrolled participants (Rundle et al., 2020; Pietrobelli et al., 2020; Baidal et al., 2020). A study in Shanghai among 2,427 school children found the median time spent doing physical activity decreased from 540 min/week before the pandemic to 105 min/week (during the pandemic), while prevalence of physically inactive students extensively increased from 21.3 percent to 65.6 percent and screen time increased by 1,730 minutes per week (from an average of 610 minutes to 2,340 minutes) (Xiang et al., 2020). An international team studying children and mobility under lockdown conditions have also found similar reductions in child and adolescent physical mobility (Guan et al., 2020).

Although there is no evidence collected yet that rates of childhood overweight and obesity are increasing, obesity has already been documented as one of the critical comorbidities influencing both hospitalization and outcomes of hospitalized patients, as well as influencing

other comorbidities such as diabetes and hypertension (Luzi and Radaelli, 2020). Ironically, the very lockdown procedures intended to keep those individuals with comorbidities safe from COVID-19, then, also potentially increase risk of and adverse outcomes from these very comorbidities.

1.5 Built and Natural Environment

Early indications have suggested a paradoxical relationship between the pandemic, national mitigation measures, and the environment (both built and natural). On the one hand, susceptibility and outcomes with respect to COVID-19 have been tied to air pollution in China, the U.S., and Italy (Tian et al., 2020; Wu X et al., 2020; Zhu Y (b) et al., 2020; Coccia 2020). A study of 324 cities in China found that an increase of 10 $\mu\text{g}/\text{m}^3$ in NO_2 or $\text{PM}_{2.5}$ was found to be associated with a 22.41 percent or a 15.35 percent increase in the number of COVID-19 cases, and a 19.20 percent or 9.61 percent increase in severe infection, respectively (Tian et al., 2020). Another study of more variables in 110 Chinese cities found that a 10- $\mu\text{g}/\text{m}^3$ increase (lag0–14) in $\text{PM}_{2.5}$, PM_{10} , NO_2 , and O_3 was associated with a 2.24 percent, 1.76 percent, 6.94 percent, and 4.76 percent increase in the daily counts of confirmed cases, respectively (although other pollutants were not associated) (Zhu Y (b) et al., 2020). Although the methodology has been since questioned, a study of 3,000 counties in the U.S. argued that an increase of only 1 $\mu\text{g}/\text{m}^3$ in $\text{PM}_{2.5}$ was associated with an 8 percent increase in the COVID-19 death rate (Wu X et al., 2020; see Villeneuve and Golderberg, 2020 for an alternative perspective).

As is evident throughout this review, there are a constellation of factors influencing susceptibility to and death from COVID-19 (e.g. the proportion of the population over the age of 60, the presence of pre-existing health conditions and the socio-economic factors that contribute to non-communicable disease, obesity, and autoimmune conditions) that also likely play a role in any apparent association between pollution, cases, and death. That said, UN Habitat has noted that, as of April, over 90 percent of COVID-19 cases could be found in urban areas (CCSA, 2020), in communities in which population density, daily reliance on crowded public transport, and other aspects of built environment (ventilation and natural and mechanical air flow, turbulence created from indoor footfall, inability to avoid shared spaces, overall number of surfaces individuals come into contact with) increase opportunities for infection and often coexist with greater air pollution (Dietz et al., 2020).

From climate change to built environment to exposure to pollution, the impact of gender, age, and socioeconomic inequalities and environmental health outcomes has long been documented (Petit Setlow et al., 2020; Valson et al., 2020; Malambo et al., 2020). For COVID-19, however, disaggregated evidence on the relationship between built and natural environments and impact of the pandemic on women's, children's, and adolescents' health and rights is not yet available. However, at the heart of this issue is the fact that the environment serves as both the context within which countries are attempting to meet EWEC commitments and a contributing factor to almost every SDG. The ecology—whether natural or human-made—in which a population lives will impact the extent to which progress on health, well-being, and rights can be made and sustained, and is itself an indicator of that progress. Therefore there is an urgent need for granular, disaggregated data that allows for a better understanding of the various associations between air, water, sanitation, housing, urban spaces, population density, and COVID-19.

1.6 Equity

Once COVID-19 moved from China to populations with greater ethnic diversity, it has quickly become clear that not only are disproportionate numbers of black and other ethnic minority communities bearing the brunt of COVID-19 cases and deaths, but the true extent of disparity with respect to morbidity and mortality has been masked by the fact that data on race and ethnic background was not being collected during the early months of the pandemic (Laurencin and McClinton, 2020; Yancy, 2020; Khunti et al., 2020; Gold et al., 2020; Dyer, 2020). The ethnic minority population in the UK at the time of the 2011 census was estimated at 13 percent; yet, at the end of April, data from the UK Intensive Care National Audit and Research Centre found that ethnic minorities represented a third of patients admitted to critical care (Khunti et al., 2020). In Chicago, while blacks represent only 30 percent of the city's population, they represent more than 50 percent of cases and 70 percent of deaths, while similar statistics can be cited for the states of Michigan, Louisiana, and Georgia along with New York City (Yancy, 2020). Elsewhere in the US, Native Americans in Arizona and New Mexico are also bearing a disproportionate proportion of infections and deaths compared to white residents. For example, in New Mexico, Native Americans represent only 11 percent of the state's population but 57 percent of COVID-19 cases (Nagle, 2020; New Mexico Department of Health, 2020). Meanwhile, COVID-19 in Scandinavian countries has hit immigrant and ethnic minority populations to an alarming extent (Masri, 2020). By the end of April, 25 percent of COVID-19 patients in Norway were born abroad (Masri, 2020). Somalis represented 5 percent of confirmed cases in Sweden (5 times their share of population), 6 percent of confirmed cases in Norway (10 times their share of population), and 17 percent of confirmed cases in Finland (10 times their share of population), and in all three countries represented a significant proportion of deaths (Masri, 2020; Bejereot, 2020).

A number of factors feed into this disparity, including heightened vulnerability to the socio-economic and environmental risks that exacerbate poor health such as poverty, poor quality and overcrowded housing, greater exposure to air pollutants, lack of access to safe water and sanitation, poor access to quality nutrition and health care, greater likelihood of having unsafe/insecure employment, lack of insurance coverage, and implicit health care biases by providers (Haynes et al., 2020; Millam et al., 2020; Brandt et al., 2020). Cultural practices too—multigenerational households, beliefs about caring for and visiting the elderly and sick, the prioritization of large religious or social gatherings—have been mentioned as contributing factors as well (Omar, 2020; Haynes, 2020).

However, at the heart of many of these equity issues is the fact that ethnic minority populations in North America and Europe are disproportionately represented in the sorts of “essential services” that heighten the risk of contracting COVID-19—formal sector healthcare workers, long-term care facility workers, home care workers, cleaners, bus drivers, delivery workers—and represent a significant proportion of deaths in these fields (Dorn, 2020; Kantamneni, 2020). As of the end of April, a study of the deaths of 106 healthcare workers in the UK found that 63 percent were from minority backgrounds (Rimmer, 2020).

In spite of these issues, there remains a glaring gap in that racial and ethnic minority data is rarely disaggregated by gender and age (Kantamneni, 2020). This is especially notable in the data on health care workers and care workers for which data on both race and COVID-19

mortality and morbidity and data on gender and COVID-19 mortality and morbidity are increasingly available and note the appalling toll taken by the virus on both minority and female health workers (see Section 2.7 below), but not both of these variables treated together. It is increasingly clear, however, that health workers and care workers who are falling ill and dying are not just ethnic minorities but, to a large extent, *female* ethnic minorities. Without data sets that fully disaggregate ethnicity, gender, age, and occupation, the extent of the problem cannot be fully understood to inform measures to ensure accountability within this sector.

2. Maternal, Newborn, Child and Adolescent Health

2.1. Symptoms

From the beginning, research on COVID-19 has consistently shown disproportionate morbidity and mortality among men, especially those over the age of 60 and those with pre-existing conditions. The adverse impact of COVID-19 on men has been attributed to a number of physiological, epidemiological, and socio-cultural factors including: 1) higher rates of non-communicable disease, including hypertension, pulmonary and cardiovascular disease, obesity, and cancers; 2) the lack of immune system benefits that come from having two XX chromosomes carrying critical immune system genes; 3) the fact that other emerging coronaviruses have disproportionately affected men as well; 4) differing hygienic practices between men and women; 5) potential protective benefits for the immune system of progesterone and estrogen; 5) higher rates of smoking which, in turn, lead to greater production of the ACE2 enzyme (the gateway to SARS-CoV2 accessing pulmonary cells) (Li J et al., 2020; Meng et al., 2020; Zhang (b) et al., 2020; Conti et al., 2020).

The fact that men are more likely both to contract COVID-19 and die of it may be one reason why the potential variation of comorbidity and other clinical and epidemiological issues relevant specifically to women, children, and adolescents have been less well documented. This literature review *briefly* skimmed published epidemiological data to understand more clearly how (if at all) women, children, and adolescents may be uniquely affected by the virus. A consideration of gender and age differences in COVID-19 positive women, children and adolescents, however, has relevance for accountability on a number of levels.

Early studies—while noting that men and the elderly were more likely to both be hospitalized and die from COVID-19—did not gender or age disaggregate when it came to discussing epidemiological or clinical features of the disease. These studies were also emerging from China, then the epicenter of the pandemic, and were predominantly focused on seriously ill, hospitalized patients who, again, were disproportionately men and over the age of 60. Further studies have noted, however, clear gender and age differences in symptoms of COVID-19. Women and young people, for example, often do not present with either fever or cough (both of which were initially part of the suspect case definition put forth by global health agencies and national ministries of health). A large study of 1,420 patients in 18 hospitals across Europe, found that while adult males more frequently suffered from cough and fever, women with mild to moderate cases of COVID-19 were more likely to experience symptoms such as loss of smell, headache, nasal obstruction, throat pain and fatigue, while younger patients reported included loss of smell, nasal obstruction, rhinorrhea, facial pain, headache, and throat pain (Lechian et al., 2020). This suggests that the potential for misdiagnosis among women and young people—especially during the first few months of the pandemic when

testing was less available and suspect cases were being identified based on presentation of symptoms—may have been quite high.

2.2 Sexual and Reproductive Health and Rights

Sexual and reproductive health and rights (SRHR) advocates have mapped the potential impact of COVID-19 based on evidence from past pandemics and public health emergencies such as SARS, Zika, and Ebola. They highlight potential issues as far ranging as: 1) possible disruption to contraceptive supply chains as API production is impacted in China with knock on effects with respect to the Indian generic industry; 2) human resources shortages as health workers are diverted to the epidemic response or themselves fall ill; 3) potential disruptions to access to reproductive health care due to both mobility restrictions and loss of income in lockdown, as well as due to governments attempting to covertly push through restrictions to, for example, safe and legal abortion during the chaos of the epidemic response; 4) increasing unavailability of contraceptive choice as reproductive health service delivery channels and supply chains contract (Ahmed and Cross, 2020; Chattu and Yaya, 2020).

Already shortages of family planning technologies have been reported as Asia-based contraceptive manufacturers have halted or reduced production in response to lockdown policies. For example, Malaysia's Karex Bhd produces one in every five condoms globally, yet since March it has been only allowed to function at 50 percent capacity and delivery times have doubled from two to four months (IPPF(a), 2020; Purdy, 2020). Meanwhile, the Indian government has stopped all export of progesterone-based products, thus greatly affecting global supply of IUDs (IPPF(a), 2020). UNFPA Supplies, meanwhile, has analyzed stock levels of both contraceptives and life-saving maternal health commodities across its 46 focus countries and identified stock-out risk relative to projected consumption over the next six months in a number of these with respect to LARCs, injectables, oral pills, and condoms, as well as looming shortfalls of oxytocin, misoprostol, magnesium sulfate, and calcium gluconate (UNFPA(b), 2020).

Reports from reproductive health stakeholders in a number of countries report large drop offs in numbers of women attending reproductive health clinics (Marie Stopes, 2020). For example, IPPF— after conducting the largest survey thus far as to how sexual and reproductive health care has been affected by the pandemic—has reported the closure of 5,633 static and mobile clinics and community-based care outlets across 64 countries, or roughly 14 percent of the total IPPF service delivery points in 2018. South Asia and Africa have been particularly hard hit, with South Asian partners reporting more than 1,872 clinics and other outlets closed, and African partners reporting the closure of 447 mobile clinics; however, the impact of closure spans the globe with Pakistan, El Salvador, Zambia, Sudan, Colombia, Malaysia, Uganda, Ghana, Germany, Zimbabwe and Sri Lanka all reporting more than 100 closures of clinics and/or community-based service outlets. Closures have led to severe cuts in sexual and reproductive healthcare services with 44 national members reporting the scaling down of HIV testing, 41 scaling down contraceptive care service, 36 scaling down services on gender-based violence, and 23 reducing availability of abortion care. National members also face commodity and supply shortages, with 59 reporting delays in moving goods within countries, 29 facing a shortage of contraceptives and 16 reporting shortages of HIV-related medicine (IPPF(b), 2020).

From a biomedical perspective, too, some research has suggested that SARS-CoV2 may have future fertility implications for survivors. An article from China consolidates data on SARS-CoV2 and its relationship to the cellular receptor ACE2 and other enzymes which are present in both male and female reproductive organs, suggesting that reproductive organs may be a target for the virus, and advocate long term follow up of COVID-19 patients with respect to potential problems with fertility (Li R et al., 2020). Similarly, the authors note that wide overuse of chemical disinfectants for fumigation and sterilization, experimental high dose antiretrovirals, glucocorticosteroids, and other drugs for severe and critical COVID-19 patients in hospital, as well as the impact of “panic” or “fear” reactions on the expression of stress hormones have, in the past, all been demonstrated to disrupt fertility which, in turn, the authors suggest require considerations of both COVID-19 patients’ fertility histories, status, and aspirations when deciding courses of treatment and the extent of their exposure to potential hazards (Li R et al., 2020).

2.3 Pregnancy, Labor, and Delivery

One growing body of evidence on COVID-19 is that of research with respect to pregnancy, labor and delivery outcomes and outcomes related to newborns. Thus far, the evidence suggests that COVID-19 is not transmitted in late pregnancy, during vaginal delivery, or via breastmilk (Yang et al., 2020; Ferrazzi et al., 2020; Constantine et al., 2020; Rose et al., 2020; Yan et al., 2020; Qiancheng et al., 2020). Neonatal prognosis—as well as potential complications such as postpartum hemorrhage, perineal resection rates, preterm birth, low birthweight, neonatal asphyxia—is generally seen as good (Liao et al., 2020; Rose et al., 2020). Concern, however, remains as to a number of issues, such as 1) the effect of COVID-19 in early pregnancy on fetal development, as there is evidence that viral infection at early stages of pregnancy can affect this (Bukens et al., 2020); 2) measures taken to avoid postpartum transmission of COVID-19 to newborns, which in turn raises ethics questions (Vintzileos et al., 2020; Rasmussen and Jamieson, 2020); and 3) the absence of pregnant women in clinical trials and the lack of protocol for pregnant COVID-19 patients (e.g. NSAIDs are now generally contraindicated for COVID-19 patients, but are often essential for women with moderate to high risk of preeclampsia and other syndromes) (Constantine et al., 2020; Rose et al., 2020; Poon et al., 2020).

There is evidence—again based on small sample sizes—of high levels of mortality among pregnant critical COVID-19 cases admitted to intensive care; for example, a study of a hospital in Iran found that—at the time of reporting—seven out of nine women admitted with severe COVID-19 disease to the hospital died, one was still critically ill and ventilator-dependent, and only one had recovered, but only after prolonged hospitalization (Hantoushzadeh et al., 2020). The study took family and cohort data for each case and determined maternal outcomes were more severe when compared to other high- and low-risk familial/household members; however, it was unclear how outcomes for the nine cases compared to other critical patients for whom, elsewhere, prognosis has often been extremely poor once ventilation is introduced.

There are also important ethical issues when pregnant COVID-19 patients are admitted to hospitals with respect to: 1) consent in testing of both the mother and the newborn infant in labor and delivery wards, and in maternal child health units (e.g. can pregnant women and new parents refuse?); 2) consent in separation of newborns (and potentially denial of the opportunity to breastfeed) from mothers who have tested positive, since, as of now, it appears

infants are only infected by postpartum physical contact; 3) consent to c-section in the absence of clear information/guidelines on labor and delivery among women testing positive; 4) diversion of scarce PPE to labor and delivery wards—as well as to maternal and child health units more generally—and away from other units when clear morbidity and mortality risk to pregnant women, newborns, and young children is not yet established in comparison to other population groups; 5) safety issues and workers' rights with respect to pregnant health care workers; 6) safety issues with respect to clean, safe labor and delivery wards and transfer of patients between departments/units of health facilities that are also treating severe or critical COVID-19 patients (Vintzileos et al., 2020; Rasmussen and Jamieson, 2020; Chen et al., 2020).

A new global research initiative—INTERCOVID—overseen by Oxford University, seeks to address the evidence gaps with respect to the effects COVID-19 might have on pregnancy and the health of the mother, fetus, and newborn (University of Oxford, 2020). The international study will recruit pregnant women who have been exposed and not-exposed to SARS-CoV-2 at any stage of pregnancy, following both them and their newborns until discharged from the hospital postpartum in order to understand better risks and clinical outcomes. It is likely, then, the evidence gap on this issue will quickly begin to be bridged. Yet the accountability issues will remain unless pregnancy, labor and delivery, and postnatal ethical questions are not simultaneously addressed.

2.4 Vaccination

Concerns have been raised that disruptions in immunization services due to COVID-19 may lead to millions of children missing life-saving vaccines against measles, diphtheria, and polio (UN News, 2020). Decreases in childhood immunization services have been experienced during other outbreaks; for example, in Guinea during the 2014 West Africa Ebola outbreak, there were 30 percent reductions in childhood vaccinations (UNDP, 2014). Outbreaks of diseases that are vaccine-preventable can overwhelm health systems battling COVID-19 and substantially increase illness and death.

Faced with weighing the risks related to halting vaccinations against the risk of inadvertently spreading COVID-19 through mass vaccination campaigns, and putting both communities and frontline health workers at risk, health agencies are recommending that governments pause mass vaccination campaigns temporarily, if there is no active outbreak of the disease, and to work hard to regain lost ground once the pandemic is under control. Suspensions began in late March when the Global Polio Eradication Initiative recommended that countries pause polio vaccination campaigns until the second half of the year. This was followed by a broader call from WHO's Strategic Advisory Group of Experts on Immunization (SAGE) for suspension of mass vaccination campaigns for vaccine-preventable diseases.

The published literature thus far does not have extensive data about impacts of COVID-19 on childhood vaccination in countries. One small study in the U.S. examined changes in pediatric vaccination and found decreases in routine pediatric vaccine ordering and doses administered, particularly for older children, and called for more detailed assessment at state and local levels (Santoli et al., 2020). A few articles in the science and health literature provide examples of how low- and middle-income countries are handling immunization services. For example, Vietnam has fully suspended vaccinations from April 1 - 15, apart from hepatitis B

vaccine which is still given at birth (Nelson, 2020). In Ghana, immunizations have ceased in those areas with movement restrictions (Nelson, 2020) and in the Philippines, polio vaccination, which had expanded in response to an outbreak in September, has now been put on hold (though routine immunization services are continuing in certain health centers) (Deprez, 2020).

The DR Congo has decided to continue its mass measles vaccination campaign for now. The country has been battling an outbreak since early 2019, while at the same time responding to its largest Ebola outbreak in the east of the country. The measles outbreak, which started in early 2019 and was officially declared by the Ministry of Health in June 2019, has killed an estimated 6,500 children (three times as many as the Ebola outbreak in the east) and sickened more than 340,000 (Roberts, 2020). For now, despite the COVID-19 pandemic, the government has decided to continue its measles vaccination campaign in the east, though it faces extra challenges including assembling and protecting vaccination teams and transporting vaccines. The measles campaign was launched on 21 April 2020, targeting children under five in the most affected health zones in North Kivu (UNICEF(a), 2020). The protocol has been adapted to limit risk of transmission of COVID-19. Caregivers and children are only allowed in health centers in small groups with one-meter distancing requirements. UNICEF is supporting the government with vaccine supply and provision of protective equipment for health workers who are administering the vaccines. At the place of vaccination, children and their caregivers are also required to wash their hands with soap and water which is provided to them.

GAVI estimates that as of late April, 14 countries had suspended mass vaccination campaigns leading to 13.5 million children that have already missed out on vaccinations for polio, measles, human papillomavirus, yellow fever, cholera, and meningitis (Roberts, 2020). Other countries are still deciding on suspensions and many more children will likely miss out on vaccinations as COVID-19-related disruptions continue. WHO, GAVI, and other health agencies emphasize that during suspensions of mass campaigns, governments need to prioritize surveillance as well as routine immunization of children in essential service delivery, though they realize that parents may not bring their children to clinics due to fears or social distancing regulations. An additional problem is that vaccine supply may suffer from closed borders and GAVI states that at least 21 low- and middle-income countries are reporting vaccine shortages (WHO(g), 2020).

2.5 Non-communicable diseases (NCDs)

Non-communicable diseases (NCDs) are risk factors for patients with COVID-19, with a recent meta-analysis finding that hypertension, diabetes, COPD, cardiovascular disease, and cerebrovascular disease were major risk factors for COVID-19 patients in the data examined (Wang B et al., 2020). People living with NCDs who become infected with COVID-19 can experience more severe disease and poorer outcomes (Mikkelsen et al., 2020). Italy's recent analysis of patients who died from COVID-19 in hospital found that 96.2 percent had comorbidities, mostly NCDs, the most prevalent of which were hypertension, type 2 diabetes, ischaemic heart disease, chronic obstructive pulmonary disease (COPD), and cancer (Istituto Superiore di Sanita, 2020; Kluge et al., 2020). Country data and published literature on COVID-19 often reports these and other NCDs as comorbidities of patients, but this data is rarely disaggregated by gender and age. There are some exceptions, including Italy's report

of patients dying from COVID-19 in hospital which found broadly similar levels of many comorbidities for men and women dying from COVID-19 though dementia, autoimmune diseases, and heart failure were more common in women, while ischaemic heart disease and COPD were more common comorbidities among men (Istituto Superiore di Sanita, 2020).

The problem of NCDs and COVID-19 is compounded by the fact that the measures to contain and mitigate the spread of the virus particularly impact people living with NCDs. Measures may limit people's activity levels and their ability to access healthy foods, and may also restrict access to preventive or health promotion services (Kluge et al., 2020). These issues are beginning to be examined in studies, but primarily focus on the impact of COVID-19 measures on obesity in children and adolescents (as detailed in Section 4.1). For example, one recent longitudinal study of 41 children and adolescents with obesity in Verona, Italy found that after three weeks into the national lockdown, study participants reported less time in sports activities, and increased screen time and intake of potato chips, red meat, and sugary drinks, though fruit intake also increased during the period (Pietrobelli et al., 2020). Limited information exists on the effect of containment and mitigation measures on women with NCDs and more studies are needed, along with gender- and age-disaggregated data on NCDs.

2.6 Mental Health Outcomes

A study in Wuhan and surrounding cities thought to be the first study of gender-associated post-traumatic stress syndrome (PTSS) during a pandemic demonstrated that women have significantly higher incidence of PTSS as measured in Posttraumatic Stress Disorder Checklist (PCL-5) scores. Women had higher symptom prevalence, were more likely to re-experience negative alterations in cognition or mood, and were more likely to experience hyper-arousal (e.g. fear) than men (Liu et al., 2020). A broader study from across China found similar gender differences when assessing mental health with the Impact of Event Scale-Revised (IES-R) checklist and the Depression, Anxiety and Stress Scale (DASS-21); women suffered a greater psychological impact of the outbreak as well as higher levels of stress, anxiety, and depression (Wang C et al., 2020). Early findings from Italy also reported similar gender disparity in managing affective disorders (Moccia et al., 2020; Mazza et al., 2020). Rapid assessment surveys by UN Women in four countries (the Philippines, Pakistan, Maldives, and Bangladesh) found that in three out of four countries, more women than men reported being affected mentally and emotionally by the pandemic (UNWomen(b), 2020). For example, in the Philippines, 68 percent of women and 54 percent of men said they were affected mentally and emotionally by COVID-19 while in Maldives, the survey found 68 percent of women reporting these issues versus 56 percent of men. In Pakistan, 66 percent of women and 63 percent of men reported being affected mentally and emotionally, while only in Bangladesh, more men (66 percent) reported being affected mentally and emotionally than women (62 percent).

Children too have been documented as suffering increased mental distress from lockdown. A large survey from China among 2,330 school children in Hubei province who, at the time, had been locked down for an average of 33.7 days found that 22.6 percent reported experiencing symptoms of depression, and 18.9 percent reported experiencing symptoms of anxiety, with higher depression and stress scores experienced by students in Wuhan than elsewhere, and higher scores also among those who already struggled with depression and anxiety prior to lockdown (Xie et al., 2020). Another study in China also found ADHD symptoms among children were exacerbated during lockdown (Zhang (c) et al., 2020). A study of teenagers

undergoing eating disorder treatment at a hospital in Singapore found that a number of patients and their families were unwilling to attend outpatient clinics or agree to inpatient care due to fear of COVID-19, while symptoms and drivers of eating disorders (e.g. anxiety, fear of contamination, compulsive behavior) became worse (Davis et al., 2020).

2.7 Human Resources for Health

More than 70 percent of the global healthcare workforce—in particular those on the front line such as nurses, community health workers, pharmacists—are women (Boniol et al., 2019). In spite of the fact that COVID-19 is more likely to both infect and kill men, data published by Global Health 50/50 suggest that female health care workers are disproportionately infected compared to men by 75 percent to 25 percent in Spain, 68 percent to 32 percent in France, 73 percent to 27 percent in the USA, and 72 percent to 28 percent in Germany (Global Health 50/50). Additionally, in initial studies on the mental health impact of COVID-19 on healthcare workers, nurses on the front line are predominantly women and are experiencing stress and anxiety far exceeding that of the general population (Mo et al., 2020; Chew et al., 2020; Kang et al., 2020). Moreover, while gender differences in handling stressors has yet to be fully understood, some studies show that female healthcare workers are significantly more likely to experience psychological distress and acute stress than their male colleagues (Liu et al., 2020; Zhu Z et al., 2020; Huang et al., 2020; Lai et al., 2020). This research on mental health and health workers (and, indeed, mental health in general) has initially been coming from the experience of China (although see Zhang (d) et al, 2020 on Iran), but it is expected that data from other countries will become available over the coming weeks and months.

So too are studies of the global paid care workforce working in both long-term care facilities and home-based care which, presently, is estimated to employ around 381 million among whom 65 percent are estimated to be women, many of whom can be classified as low income (Global Health 50/50). As the pandemic wears on, it has become increasingly clear that nursing and care home deaths represent a horrifying proportion of COVID-19 deaths in Europe and North America, even though many countries only recently began including these deaths in their official reporting and some still leave them out (Barnett and Grabowski, 2020; Trabucchi and De Leo, 2020). As of now, WHO estimates that at least 50 percent of deaths in Europe are nursing home residents, an estimate that echoes data coming out of American state public health departments (WHO Regional Office for Europe, 2020). As of yet, however, data on care-associated infection or mortality among care workers is not available, nor is non-anecdotal data available on burnout and other mental health issues affecting care home and home care workers whose experiences are not yet being systematically captured to the same extent as their colleagues working in clinics and hospitals. As the “care economy” is massive, predominantly performed both formally and informally by women, and represents one of the largest and most significant global clusters of COVID-19, a prioritization of evidence related to both the health and rights of the labor force within this economy as the pandemic unfolds is essential.

So too is a deeper understanding of labor issues with respect to female health care/care workers. Qualitative evidence is emerging that the global shortage of personal protective equipment (PPE) is disproportionately affecting female health workers as—even before the pandemic—much of this equipment was not proportioned to women’s bodies (Ghani, 2017; Criado Perez, 2019; Topping, 2020). Additionally, there is an urgent need to quantify and

document risks to pregnant health care workers so that clear evidence-based guidance and policy can be put in place (Brickley, 2020), as well as to quantify and document gender-disaggregated health considerations (including mental health) with respect to frontline health workers with families (Zhang S et al, 2020; Menon & Padhy, 2020).

2.8 Other Health Issues

Beyond the obvious, COVID-19 has brought to light the importance of both a multisectoral and life course approach to health as the complicated intersection between health, gender, age, and the mental and physical impact of social isolation policies becomes clear. For example, a study of admissions for falls among the patients over the age of 65 at 14 hospitals across China following lockdown on February 19th showed that women were being admitted for traumatic injury (e.g. falls and fractures) in numbers up to 30 percent higher than men, across all age strata (Zhu Y (a) et al., 2020). Hip fractures represented three-fifths of admissions, a rate 2-3 times higher than expected from other studies both in China and elsewhere. Fractures occurring at or near home represented 89.2 percent and 94.5 percent of admissions and many were caused by a fall from a standing or low height (< 1 m). Still others were from injuries incurred from reckless behavior, likely borne out of mental health issues—e.g. panic, depression, irritability—experienced by the elderly, trapped at home alone or with their spouse, dealing with social isolation by keeping overly busy (Zhu Y (a), 2020).

There are likely many other examples such as this one (i.e. gender- or age-differentiated health outcomes not specific to COVID-19 itself, but related to the impact of COVID-19 on the health system and on women's, children's, and adolescents health in the context of the pandemic) that are vitally important to document, but also very difficult to identify due to the overwhelming volume of publications turned out daily. These issues are effectively lost in the "COVID infodemic," which does not simply include the proliferation of fake news, but the overwhelming proliferation of all news.

From an accountability perspective, it becomes impossible to monitor what is happening with women's, children's, and adolescent's health because it is impossible to keep track of what is happening. The risk is that information that may be relevant to securing the well-being of every woman and every child in the context of the pandemic ends up circulating only within the highly specialized fields that bother to research, publish, and cite based on their own specific interests. The larger question is how to regularly elevate important "non-obvious" findings so that they float above the sea of data, and be recognized as important contributors to health, rights, and well-being, then translated into policy considerations that can then be regularly monitored.

3. Data Systems

There are several overarching issues with respect to the COVID-19 pandemic and data systems. It has been noted that we are in an unprecedented situation in which researchers around the globe are focused together on a single topic and collaborating in record time (Apuzzo and Kirkpatrick, 2020). The effect of the pandemic on data systems, however, is more complex.

Given chaotic and crowded environments at many health centers and hospitals, and in the health system as a whole, routine health information systems may suffer disruptions. In the literature, this issue was raised with respect to pregnant women's access to their health care records with one paper suggesting that, given chaotic health care delivery environments, it might benefit pregnant women to have copies of their own health care records (Rasmussen and Jamieson, 2020). Additionally, routine data systems such as civil registration and vital statistics (CRVS) systems may suffer suspensions or breakdowns during the pandemic, as health and information systems become overwhelmed and certain types of research (for example, population-based surveys) become impossible. These issues, while important for both the health of patients and credibility of national information systems, are only starting to be examined in the literature.

Credible and robust data systems are needed for understanding the pandemic's timing and severity and for an effective global, national, and subnational response (CCSA, 2020). . The ability for women, men, adolescents, and children to survive and recover depends on the quality of the data informing the response and, in particular, whether that data is disaggregated by age and gender (*The Lancet*, 2020). Global Health 50/50 is tracking sex-aggregated data on COVID-19 cases and death, as reported by national governments, for the most affected countries, though some countries are still not reporting gender- and age-disaggregated data. For example, as of early April, the U.S. was not reporting disaggregated data as this information was not available across states and counties (Gupta, 2020). Gender 50/50 and other organizations have called for governments to disaggregate data (on testing, cases, admissions, and deaths), and to include a gender and generational focus in all research on COVID-19, in order to ensure that the health needs of men, women, and children are addressed in prevention and treatment, vaccine development, and post-pandemic recovery efforts.

Commentators have suggested that having this data may depend in part on who is in charge, in particular whether women are included in countries' decision-making processes on COVID-19. The WHO Executive Board has emphasized the importance of engaging and involving women in outbreak preparedness and response (WHO Executive Board, 2020) but papers and media reports suggest that women's representation in global and national COVID-19 decision-making bodies is thus far inadequate (Wenham et al., 2020). For example, the 12-person White House Coronavirus Task Force was all male at its establishment, with two women added in February (Gupta, 2020). Research is needed that looks into those contexts in which women have equal decision-making power in COVID-19 policy spaces and how that representation leads to a more informed preparedness and response effort (including, for example, whether there is an influence on availability of sex-disaggregated data).

Table 1 includes a list of credible data platforms that are collecting real-time information on the COVID-19 epidemic. The extent to which these, however, are both a) gender- and age-disaggregated and b) based on "real-time" data (that is, not data taken from past emergencies and applied to potential outcomes of COVID-19) is often an issue. Additionally, the presence of so many data hubs and dashboards creates the risk of information overload, as not all are updating at an equal rate and there is sometimes contradictory information across various hubs. Furthermore, the value added of increasing amounts of "information" is questionable when everyone is creating their own information source. Mining such sources for data for the purpose of, for example, monitoring EWEC commitments may not be useful due to the time

that then needs to be spent cross-checking, cleaning, and digging through what exists (including across assorted UN agency COVID-19 data hubs). For this reason, monitoring commitments requires centralized access to *primary* country-level data, not reports or syntheses created by various partners at different points in time.

Table 1

United Nations Department of Economic and Social Affairs Statistics Division	https://covid-19-data.unstatshub.org/
The Oxford University Government response tracker	https://www.bsg.ox.ac.uk/research/research-projects/coronavirus-government-response-tracker
The World Bank	http://datatopics.worldbank.org/universal-health-coverage/coronavirus/?cid=ECR_TT_worldbank_EN_EXT
The Premise Global Contributor Network	https://www.premise.com/covid-19/ http://www.data4sdgs.org/resources/covid-19-resources
OCHA Covid-19 Pandemic Humanitarian Response dashboard	https://data.humdata.org/event/covid-19
Global Partnership for Sustainable Development Data	http://www.data4sdgs.org/resources/covid-19-resources
UNFPA COVID-19 data platform	https://data.unwomen.org/resources/covid-19-emerging-gender-data-and-why-it-matters
Global Health 50/50 Sex Disaggregated Data Tracker	https://globalhealth5050.org/covid19/
Google Community Mobility Reports	https://www.google.com/covid19/mobility/

Conclusion

What is apparent from this rapid, targeted narrative review of the literature on women’s, children’s, and adolescents’ health and rights outcomes in context of the ongoing COVID-19 pandemic is that: 1) a lot of literature is being churned out; 2) very little of this literature has hard quantitative or qualitative evidence on how COVID-19 has impacted women’s and children’s health and rights.

We know what *has happened* in other public health emergencies and economic crises. We know what *is assumed to be happening* with COVID-19. We know how the global community *is planning to address* disparities with respect to the pandemic. However, the evidence base with respect to real -time gender- and age-related outcomes of COVID-19—beyond the clear

morbidity and mortality burden born disproportionately by men and older adults, and in spite of the tsunami of publications piling up on a daily basis—is extremely limited.

What currently exists as “fact” is often being reproduced from sources which draw their original conclusions from a single newspaper article in which only a handful of people, in a handful of places, were interviewed.

This is not to dispute the truth of the social, economic, health, and human rights burdens of COVID-19 presently being borne by (often poor) women and children around the world. It is rather to reiterate that—as of now—the truth of the situation is being upended by the flimsiness of the evidence base.

For this reason, there is an urgent need for a common, shared, global research platform on the issues of relevance to women’s, children’s, and adolescents’ health and rights. We need to know immediately and measurably how women and children are affected by COVID-19, not simply how *they might be* affected. Moreover, stakeholders must begin to prioritize data from [primary sources](#), and the numbers currently and repeatedly being cited as fact must begin to be rigorously and systematically traced back to such sources. By this we mean that it must no longer be seen as sufficient to quote a newspaper article which in turn quotes an interview which in turn quotes numbers which themselves are not yet publicly available to be verified. Verified, large-scale, rigorously collected data on women’s, children’s and adolescents’ health and rights are, therefore, absolutely essential going forward, as is an immediate discontinuation of the reproduction of anecdote, projection, and speculation as equivalent to “outcome” and “impact.”

Thus, in relation to the question: How is COVID-19 affecting women’s, children’s, and adolescents’ health and rights? The answer is: We are only beginning to know. The numbers at this stage of the pandemic are just not available. And that they are not available is, at its heart, a crisis of accountability.

Accountability—as defined by the IAP—is the process of monitoring, reviewing, acting, and remedying circumstances that prevent the enjoyment and exercise of rights related to reproductive, maternal, newborn, child and adolescent health and health-related SDGs (IAP, 2020). If this is the case, then to continue to operate in the context of the current COVID-19 information glut/evidence vacuum—the simultaneous and ongoing “infodemic” as WHO has so succinctly put it—is no longer acceptable, as “action” and “remedy” cannot effectively happen in the absolute absence of systematic, robust, data-based monitoring, and review of evidence.

No doubt, in the next six months, this evidence will emerge in an ad hoc way, as countries begin to better grapple with research and documentation alongside epidemic response. However, with respect to EWEC commitments, national and global stakeholders may benefit from a guiding hand on this issue, as central coordination of a common research platform to collect large, standardized health- and SDG-related, gender- and age-disaggregated datasets for member states and other partners to fully examine the impact of COVID-19 on their accountability to these commitments is absolutely essential. IAP has an important role to play in helping to formulate such a common platform and, thus, should serve as a critical partner in the global COVID-19 response throughout the duration of this pandemic and beyond.

Women's, Children's and Adolescents (WCA) Health & Rights What Do We Need To Know For Accountability?	
Topic	National-/Sub-National Data Disaggregated by Age, Gender, Wealth, Ethnicity
Humanitarian	<p>What information exists as to disaggregated humanitarian issues?</p> <ol style="list-style-type: none"> 1. What has COVID-19 meant for refugee/internally displaced WCA? 2. What has COVID-19 meant for refugee registration with respect to WCA? 3. What has COVID-19 meant for restrictions with respect to asylum petitions by displaced/refugee WCA? <p>*How specific are these findings to WCA, or do they generally extend to all refugees?</p>
Socio-Economic	<p>What sort of disaggregated information can be collected on COVID-19 isolation and mitigation policies as they affect:</p> <ol style="list-style-type: none"> 1. Food security (e.g. affordability, availability) 2. Malnutrition (e.g. over-, under-/protein energy/micronutrient), dietary diversity, breastfeeding) 3. Education (e.g. early childhood, primary, secondary, tertiary) 4. Employment (e.g. formal, informal, home-based) 5. Livelihoods (e.g. income, assets, access to social safety nets) 6. Access to water and sanitation 7. Equity (e.g. racial, ethnic, economic class) <p>*How specific are these findings to WCA, e.g. where have WCA been specifically disadvantaged?</p>
MNCAH	<p>What information exists as to real-time COVID-19 disruption of access to</p> <ol style="list-style-type: none"> 1. Maternal health services, incl. antenatal, facility-based delivery, postnatal care 2. Sexual and reproductive health services (e.g. access to family planning, HIV/AIDS and HIV/TB prevention and treatment, and reproductive/breast cancer screening, as well as adolescent-friendly reproductive health services and, where relevant, abortion services?) 3. Child health services, incl. vaccination, nutrition assessment counselling, supplementary feedings <p>What information exists as to real-time increase in other WCAH-specific disaggregated morbidities, mortalities, health outcomes due to disruption of access and/or diversion of resources to COVID-19?</p> <ol style="list-style-type: none"> 1. Maternal mortality 2. Neonatal and child mortality 3. Incidence of preventable childhood disease 4. Incidence of STIs and reproductive/breast cancers 5. Incidence of gender-based violence 6. Incidence of mental health conditions 7. Incidence of other health conditions
Clinical Issues	<p>What disaggregated information exists as to:</p> <ol style="list-style-type: none"> 1. Differences in symptoms, outcomes, and recovery from COVID-19 2. Differences in comorbidities 3. Differences in racial and wealth-quintile morbidity and mortality 3. Health care workers/Home care workers risk, safety, and workers' rights

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