Chapter 20
Conclusion: Sustainable Maternity Care in Disruptive Times

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20.1 Disruptive Times

The anthropologist in me wants to argue that caregiving is one of the crucial means by which humans have adapted over tens of thousands of years to a cold and impersonal natural world replete with both dangers and opportunities. And it is also how we have sustained and developed societies in response to the very real threats of social suffering and historical change. (Kleinman 2019: 245, emphasis ours)

Written in response to a decade of caregiving during his wife Joan’s decline from Alzheimer’s, and 50 years of service in medicine and academics caring for patients, students, and their families, Arthur Kleinman (2019) describes caregiving as a means of sustaining and adapting human societies in response to social suffering and chaotic human and historical changes. His observations—that caregiving is a sustainable response and evolutionary adaptation to the unpredictable and emergent threats of social suffering—echo themes from our introduction to which we now return. His meditation and lament on the diminished role of caring in medicine today points to the role of caregiving as a way of managing human suffering in response to birth, death, disease, and other disruptions.

Midwifery discourse considers birth as nature’s opportunity for resilience, renewal, and regeneration. Yet modern obstetric discourse often depicts birth as a moment of risk and danger that needs to be controlled rather than a physiological

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process that can be disrupted by biomedical interventions. Our volume has shown how humanistic and midwifery models of care can offer a sustainable response to birth in ways that allow mothers, newborns, and providers to thrive. We now return to our themes of sustainability and disruption, as we describe what makes a model of birth sustainable in both stable and unstable times. We believe the time is ripe for widespread implementation of new/old models of maternity care that are low-tech, high-touch, and flexibly adaptable to a variety of settings. We acknowledge the overwhelming consensus that we are living in an era of profound disruptions that already have threatened the very stability of human lives and livelihoods as we know them (Wallace-Wells 2019). Our focus on humanistic care amidst disruptive times directly relates to the global disruptions and social suffering we are seeing during the COVID-19 pandemic (Davis-Floyd, Gutschow, and Schwartz, 2020).

A consortium of over 11,000 climate scientists recently declared that the climate emergency we face will require “an immense increase in scale of endeavors to conserve our biosphere…to avoid untold suffering” (Ripple et al. 2020:8). The annual economic losses due to climate events rose from less than $20 billion/year in 1980 to over $200 billion/year in 2020, an 83% increase in 40 years (Ripple et al. 2020). Globally, a rise of two degrees Celsius by 2100 (nearly inevitable) will translate into 400 million people suffering from extreme water scarcity, many cities near oceans being rendered uninhabitable, and thousands dying in heat waves (Wallace-Wells 2019). A rise of three degrees (highly likely if we don’t change our patterns) would mean much of Southern Europe would reside in permanent drought, while the average drought period in Central America and Africa would last 21 months and five years longer five than current droughts in these respective regions (Wallace-Wells 2019). It is not unreasonable to expect that there will be 200 million climate refugees by 2050 as the UN projects (Wallace-Wells 2019), although the World Bank has a lower estimate of 140 million climate refugees by 2050 (UNICEF 2020). Regardless of which projection is right, climate migration will disrupt existing systems that provide healthcare access, food security, and work for millions of people.

By the end of 2019, of the 80 million refugees across the globe, 47 million people were internally displaced within their own countries (UNICEF 2020). Roughly 25 million or half of the internally displaced population were newly displaced in 2019 alone by natural disasters, and 8.5 million were newly displaced by conflict and violence (UNICEF 2020). The climate refugees in 2019 included 12 million people displaced by storms, nearly ten million by floods, and nearly a million by earthquakes (UNICEF 2020). Most of the newly displaced people in 2019 lived in Asia: five million people in India, 4.1 million people in Bangladesh, 4.1 million people in the Philippines, and four million in China. Much of this internal migration affects children and women disproportionately, with about 19 million children displaced in 2019 (UNICEF 2020). The growth in climate refugees has been tremendous. Every year, between 2015 and 2020, nearly 20 million people were newly displaced by disasters, or double the 8.5 million displaced by conflict in 2019. Between 2006 and 2013, 75 natural disasters affected the Philippines alone, including the horrific destruction wrought by Hurricane Haiyan/Yolanda. In high-income countries (HIC) such as the United States and Australia, wildfires are a...
pressing and immediate reminder of our climate crisis (Sanderson and Fisher 2020). Rising population pressure, internal and external migration, disasters, and raising livestock close to forests have all contributed to an increased threat of emerging infectious diseases. An essay in Nature that analyzed 335 emerging infectious disease (EID) events between 1960 and 2004 determined that the vast majority of EID events are caused by viruses or bacteria that spread from animals to people (Jones et al. 2008).

The climate crisis will exacerbate social suffering, food security, and maternal and child health on a planet where too many people already suffer from food deficits. Roughly 800 million people are undernourished, and roughly 127 million children under 5 years of age will have stunted growth by 2025 because of nutrient deficiencies (WHO 2014). Around one billion people already have micronutrient deficiencies that contribute to congenital defects and other poor pregnancy outcomes. Long before COVID-19, it was estimated that by 2050, one billion people—1/8th of the planet’s population—will be so vulnerable from climate-related disasters or conflict that they will have little choice but to flee or fight for survival (Wallace-Wells 2019).

While there have been some descriptions of the direct costs to human life and infrastructure from the rising tide of disasters including global pandemics, local epidemics, shifting disease patterns, hurricanes, floods, tsunamis, earthquakes, and other extreme weather events, we have not fully calculated the short-term and long-term shocks to health outcomes and healthcare systems. Integrated and adaptable healthcare systems will be all the more necessary given rising migration, increasing conflict, and predicted global declines in agrarian yields.

The profound disruptions across the globe due to the COVID-19 pandemic have revealed the systemic weaknesses of healthcare systems in a wide range of countries, regardless of income level or human development index. In nearly every country, regardless of COVID-19 related mortality rates, the COVID-19 crisis exacerbated existing social dysfunctions and led to systemic calls for reform. In the US, these demands for social reform included demands for racial and social justice, as nearly 25 million people marched to protest police brutality and systemic racism. Many countries across the globe enacted sweeping public assistance programs to stem rising social and economic disruption. Broader demands for healthcare reform included efforts to improve testing and treatment of COVID-19 in the early months of the crisis, as well as broader efforts to improve healthcare access increase healthcare equipment like personal protective equipment (PPE) and ventilators, provide essential medicines, and offer improved healthcare screening and technologies including testing, contact tracing, and methods of protecting both providers and patients from contagion. As with the Ebola crisis of 2013–2015), the disruptions of the COVID-19 pandemic revealed profound inequities in our health systems and their ability to adapt in times of disruption or stress (Mukherjee 2020, Strong and Schwartz 2019).

Across the globe, between 88 and 115 million people—representing baseline versus downside scenarios—will be pushed into extreme poverty by Covid-19 by the end of 2020 (World Bank 2020), with another 35 million forced into extreme
poverty by the end of 2021 (World Bank 2020). The global rate of extreme poverty rose in 2020 for the first time since 1998 due to Covid-19 (World Bank 2020). Climate change and conflict had already slowed the progress on poverty decline, (World Bank 2020). South Asia is hardest hit, with between 49-57 million falling into extreme poverty in 2020, while 26-40 million will fall into extreme poverty in Sub-Saharan Africa. In the baseline scenario, some 70 million people (82%) pushed into extreme poverty by Covid-19 live in middle income countries. In the United States, COVID-19 has resulted in economic shocks not seen since the Great Depression—unemployment reaching 20%, 20 million jobs lost in the month of April alone, and only 51% of the adult population employed (Schwartz et al. 2020). Further, women accounted for 55% of the job losses in April, although they only make up 49% of the workforce (Ewing-Nelson 2020). COVID-19 further revealed the longstanding gender and racial inequities in the U.S. workforce that leave women of color doubly vulnerable. For Black women, the official unemployment rate increased to 16.4% while for Latina women it was 20.2%, compared to 12.4% for White men. Disturbingly, the employment gains for women in the decade since the Great Recession ended in July 2010 were wiped out in a single month (Ewing-Nelson 2020). In each work sector, women lost a disproportionate share of jobs—a higher proportion of job losses than the share of women holding jobs in that sector. In short, men held on to their jobs while women lost theirs during the COVID-19 pandemic. In Education and Health Services, where women hold 77% of the jobs, women made up 83% of the jobs lost (Ewing-Nelson 2020). Although some job losses were recovered by September, there were still 30 million people on unemployment when federal stimulus program for unemployment relief expired at the end of July 2020.

This worrying trend illustrates the vulnerability of women in the workforce and offers an opportunity to reform existing institutional inequities. The marginalization of midwifery and nursing is evidence of deep seated and structural sexism within the U.S. healthcare system that disregards those who shoulder a large burden of caring for patients (Kleinman 2019). Caring has long since ceased to be the soul of medicine and only when health systems recognize and privilege the value of caring, will we begin fix myriad problems in U.S. health care (Kleinman 2019).

It is difficult to predict how we will manage the known and unknown difficulties that COVID-19 and future pandemics or disasters will produce. Yet it is clear that maternity care will need to become more mobile, flexible, and adaptable. Within the United States, attitudes about hospitals—already perceived as sites of contagion—quickly shifted as women sought alternative sites for births. As Davis-Floyd et al. (2020) describe in a rapid-response article, the rising appeal of out-of-hospital (OOH) or community births resulted in home birth midwives and birth clinics being inundated in the United States with requests from pregnant women who wanted to shift their site of birth. Yet only a fraction of pregnant women could be accommodated by home birth midwives and its birth centers—since many birth centers had closed across the country in recent decades. These closures were due to many factors, and systemic dysfunctions in the U.S. maternity care system have made small-scale, decentralized birthing options less affordable than centralized birthing
options. Even as some hospitals were turning some women away in places like New York City, some in the medical establishment continued to resist the evidence of the safety of community births (Davis-Floyd et al. 2020). Given the numerous studies that out-of-hospital births involve fewer interventions, fewer maternal morbidities, similar neonatal outcomes, and far lower costs (Cheyney et al. 2014; Anderson et al. 2021), the continued resistance toward OOH births has little basis in clinical evidence.

During COVID-19, high-pitched rhetoric from some hospitals about the contagion dangers that doulas or birth partners might present magnified already existing distrust between technocratic providers and doulas (Davis-Floyd et al. 2020), whose presence has been shown to improve outcomes (Motti-Santiago et al. 2008), lower cesarean rates (Kozhimannil et al. 2013), increase women’s agency over the birthing process, and mitigate the racism and sexism found within American obstetrics (Bakal and McLemore, this volume). Providers’ denials of the evidence for positive outcomes from OOH births and their continued obstruction to midwifery models of care that we illustrate in this book have potentially factored into why the United States has the worst maternal and neonatal outcomes in the Organisation for Economic Co-operation and Development (OECD) (Wagner 2006, WHO 2019).

Yet disruptions and crises can provide a turning point or a moment of reflection where new solutions are sought, out of desperation or frustration. We argue that the COVID-19 pandemic offers such a moment, when new solutions must be sought as the failures of fragmented medical systems across the globe are laid bare. Although there is much despair over the loss of life in these disruptive times, there is also hope that more sustainable models of maternity care can emerge.

20.2 Sustainable and Lean Maternity Care

While it can appear that fragmented systems of maternity care are sustainable simply because they persist, in fact they consume more resources and cause more harm than benefit. As such, poor maternity care is not sustainable in our definition, where “sustainable” implies an ecological balance that avoids depleting resources, health, and lives. Birth by definition is the opposite of depletion as a life has been added, with all of its potential. We build on the World Commission on Environment and Development (1987), which claims that sustainable development “meets the needs of the present generation without compromising the ability of future generations to meet their needs” (Sadler, this volume). A concept that tries to harmonize human development with the protection of nature is encapsulated in the term “Sustainable Development Economy,” suggesting that environmental problems must be tackled by considering their relationship with both the economy and societal well-being (Wealth 2018). Schroeder et al. (2012) define the concept of “sustainable health care” as lean systems of clinical care that use the minimum of resources to maximize their efficiency in promoting health and humanity.
Lean maternity care will be needed in this era of rising scarcity due to the disruptions of disease, socio-economic stressors, declining crop yields and food security, and rising socio-economic inequality. In the United States, pregnancy, childbirth, and newborn care were the second and third highest diagnostic categories for hospital discharges in 2016, after circulatory disorders (AHRQ 2017). The median facility charge for a vaginal delivery without complications was $10,580, while the median charge for a cesarean was double that at $21,704 in the United States (AHRQ 2017). Indeed, the total charges for hospital births in 2014 in the United States were roughly $62 billion, nearly four times the cost two decades earlier in 1994 (AHRQ 2017). There is no overwhelming clinical reason for such dramatic price increases for birth, which is a normal physiological process it must be stressed. These price increases in the United States were driven by structural and economic factors including overhead costs due to fragmentation, high charges from the insurance and pharmaceutical industries, and hospitals seeking to recoup shortages via increased costs of birth.

In this context, shifting toward the lower-cost and more evidence-based midwifery care in high-, middle-, and low-income countries is the only sustainable and logical solution. We will need to train 300,000 midwives just to have enough providers for skilled birth attendance at the next generation of births across sub-Saharan Africa (Renfrew et al. 2014; Homer et al. 2014). There is a consensus that high-income countries will also need to shift away from obstetric models of care toward midwifery models of care in the next century if we are to improve birth outcomes and keep costs low most efficiently (Shaw et al. 2016; Koblinsky et al. 2014).

20.3 Perspectives on Sustainable Models of Maternity Care

All of our chapters offer sustainable solutions or lessons that can be translated to other settings. Our authors’ analyses call into question the sustainability of a strategy of universal institutional delivery and obstetric models of care as the best means to reduce maternal mortality and morbidity. Many of our chapters describe hospital resource constraints and bureaucratic processes that will only worsen with increased patient volume should more low-risk births be moved into hospitals. We demonstrate that midwifery care is more sustainable and feasible given its low-tech and low-cost approaches. Unfortunately, many low- and middle-income countries (LMIC) still promote an unsustainable push toward over-medicalized obstetric models of care in hospitals that may be under-equipped to provide high-quality care. Further, too many hospital administrators and obstetricians remain resistant to midwifery models of care.

Our book provides evidence that women are highly motivated to pursue care in facilities when those facilities offer respectful, skilled, and timely care. Examples abound from Ladakh, Guatemala, Mexico, India, the Netherlands, the United States, or Indonesia, where we show midwifery models of care used in or outside of hospitals in remote or marginalized settings outperforming nation-wide maternal and
newborn outcomes. Our chapters illustrate that when women and midwives collaborate, they can shift maternity care toward normal birth physiology or upright vaginal breech delivery, toward sustainable transfers of care, toward doula and dai care that counters the racism within mainstream maternity care, and toward holistic or femi-focal models of care that empower women and reduce obstetric violence.

These models of maternity care work for both women and providers. Their successes speak for themselves, but their lessons need to be applied more widely. As we show throughout, models are sustainable when the entire team is on board, including all staff and policy makers. To be sustainable, successful models need to plan for dissemination and continuity after their original protagonists retire.

In Chap. 2, Davis defines sustainable midwifery as characterizing “midwifery practice for millennia, plus new skills and approaches that have proven useful since midwifery’s resurgence in the last century.” She explains that midwifery autonomy and empowerment are critical to effective practice and teaching, and that midwives must apply humanistic and holistic approaches to themselves as well as to their clients in order to avoid exhaustion and burnout. Her description of how midwives should deal holistically with trauma and vulnerability in birth shows that sustainable care is built on the emotional skills of honesty, compassion, empathy, and interpersonal awareness.

In Chap. 3, midwives and clinical researchers Daviss, Hedditch, Krishnan, and Dresner Barnes describe the key elements of a sustainable model for vaginal breech delivery, arguing that the language of risk should give way to the language of choice, and that breech should not be considered a pathology but rather a variant of normal. Daviss and co-authors present the data for the advantages of upright or all-fours positions for vaginal breech delivery, which widen the pelvic outlet and facilitate normal birth physiology. They discuss how obstetricians adhering to older supine positions ultimately deskilled themselves in vaginal breech in favor of performing cesareans despite the downstream maternal consequences. They show how obstetricians and administrators are brought on board, bolstered by the new recognition that what women and traditional midwives have been doing for millennia—birthing in upright positions—is now scientifically proven to be far more beneficial that the supine positions so routinely used in hospitals around the world (Gupta et al. 2012).

In Chap. 4, Dunham and Hall describe a coordinated and sustainable model for peripartum transfers that was developed by the Home Birth Summit in the form of “Best Practice Guidelines” for transfers of planned home births to hospital settings. They show how this approach smooths the formerly inevitable inefficiencies that arise in transfers and thereby promotes better newborn and maternal outcomes, while supporting needs of the mother, newborn, and providers. Dunham and Hall have defined transfers as sustainable when they conserve resources and avoid redundancies of care or interventions that can produce further iatrogenic harm. Their model depicts transfers of care as sustainable when they are humanistic and holistic, and place the laboring person’s physical, emotional, and social needs at the center of evidence-based care, while preserving the needs of newborns and providers.
In Chap. 5, Bommarito shows how collaborative dynamics in the form of monthly regional meetings and shared allegiance to national guidelines both produce and maintain a sustainable maternity care system in the Netherlands, despite the challenges and disagreements faced by midwives and obstetricians today. She notes that such exchanges, in which midwives and obstetricians speak directly to one another on equal footing, do not occur in most countries. Bommarito argues that they should, because mutual trust, collaboration, and communication among obstetricians and autonomous community midwives are essential to sustainable models of maternity care.

In Chap. 6, Bakal and McLemore explore how doula work can link women of color seeking meaningful employment to improved outcomes for vulnerable populations. They argue that doula work is sustainable because it provides doulas, women of color, and previously incarcerated women with employment, while lowering costs for Medicaid or other programs due to reduced interventions. They show that widespread access to doula care in the United States could lead to a savings of $58.4 million each year for Medicaid in the Midwest alone—partly because doula care reduces the high risks and costs of preterm birth. They propose nationwide Medicaid coverage for doula care, the integration of doula services into other social programs, and vocational trainings to equip formerly incarcerated individuals to serve their own communities as doulas. Together such measures would systemically address the lack of social support in maternity care for women of color and low-income women.

In Chap. 7, Pine and Morton delineate how quality improvement helps produce sustainable models of maternity care in the United States by providing a practical guide to the landscape of quality measurement. They show that high-quality maternity care can be made more sustainable by improved metrics, as well as by improved methods for creating and analyzing those metrics. They describe the pitfall of the inordinate time needed to enter metric data and note that the subsequent provider burnout and frequent inaccuracies work against sustainability. To make quality measurement and metrics sustainable requires attention to the needs of end users such as providers, while the “wicked problems” that are too complex to be dealt with by metrics must be broken down into “tame problems” that can actually be solved. Sustainability in metrics collection and dissemination requires functional and efficient data infrastructure that supports patient care by fading into the background, rather than obstructing patient care with inefficiencies of use. Their arguments mirror broader critiques about the inefficiencies of electronic patient records that suck time and energy from providers while doing little to assist providers seeking rapid answers to complex scientific questions (Mukherjee 2020).

In Chap. 8, Teman and Berend compare the sustainable surrogacy program in Israel to the unsustainable surrogacy practices of the United States. They argue that unified regulation that protects the rights of both surrogate mothers and the intended parents is needed for surrogacy practices to become sustainable in any nation. Essential mechanisms for surrogacy sustainability include standardization and regulation of contracts and clinical practices; mandatory screening of intended parents.
to ensure their viability as parents; and encouraging open communication between the surrogates and the intended parents.

In Chap. 9, Sadler, Leiva, and Gomez describe a public hospital in Chile that made rapid and remarkable changes in lowering cesarean rates from 40% to 5% by promoting humanistic and sustainable models of maternity care. They also describe a 20-year sustainable movement for the humanization of birth and against obstetric violence that has been spread across Latin America by activists using legal, medical, and social movement methods. They highlight the results in improved outcomes for mothers and providers and the passing of favorable legislation that makes humanistic and woman-centered birth care sustainable in five Latin American countries.

In Chap. 10, Jerez shows how sustainable shifts in maternity care require collaborative and participatory models of change at the Maternidad Estela de Carlotto, a public hospital in Argentina. She illustrates a hospital landscape where providers learned to shift their practices in ways that avoid excess interventions and obstetric violence while promoting humanization of care. Jerez shows that when staff were allowed to collaborate in shifting the hospital protocols rather than forcing change through top-down orders, hospital staff became empowered to make truly transformative changes in care. This process was sustainable and successful because the self-affirming process allowed behavioral change to percolate through all levels of the staff.

In Chap. 11 on the Luna Maya birth centers in Mexico, Alonso, Murray de López, Lucas-Danch, and Tryon present a humanized, “femifocal,“ and community-based model of maternity care that provides full continuity of care—including infant and child health, well-woman care, and post-menopausal care. These authors argue that their model is the most sustainable way to care for Indigenous and non-Indigenous women in two widely differing settings—Mexico City and San Cristóbal de Las Casas, Chiapas. The femifocal model of care they describe is adaptable because it integrates evidence-based care into the local context. Furthermore, this model emphasizes human rights, collaborative care, and participatory processes, as it is continuously shaped by the women from the communities it serves. The authors identify eight characteristics that make the Luna Maya model sustainable: (1) femifocal care that supports women’s agency; (2) integrated and alternative care practices; (3) a humanistic midwifery model of care with a rights-based approach; (4) informed consent; (5) client-directed care; (6) the strength and commitment of staff; (7) continuity of care and provider; and (8) self-care for both mothers and staff.

In Chap. 12 on Maya women in Guatemala, Austad, Chary, Hawkins, Martinez, and Rohloff understand sustainability as the “the strategic use of resources to meet human needs while promoting ecological harmony and balance”. They argue that a sustainable model of birth will deploy local expertise while creatively innovating within local resource constraints. The authors identify the current obstetric model of care in Guatemala as unsustainable, in particular for those Maya women with high-risk pregnancies, who were being turned away at the very facilities that local policies and the state were pushing them toward. To push Maya women toward facility-based delivery while denying them entrance to those same facilities because of class and racial bias is the very definition of unsustainable. To help high-risk
Maya women navigate this institutional bureaucracy that denied them the care they were told to seek, these authors helped create a system of “obstetric care navigators.” These patient navigators would translate for and help Maya women receive much-needed facility-based care and essential medicines that they were required to purchase before being admitted into the hospital. The navigators also served as doulas, modeling respectful care for hospital staff, including techniques to support women during labor that staff otherwise would not learn. This pilot program is designed to be scalable across Guatemala as it requires little funding, given that obstetric patient navigators could be funded from within the community or work as volunteers.

In Chap. 13, McCauley and van den Broek argue that sustainable efforts to improve the quality of maternity care will require addressing prevailing gaps in accountability in ways that would ensure the existence of basic and emergency obstetric care in facilities. They argue that sustainable improvements in maternity care require identifying bottlenecks that better assess postnatal and prenatal care, which have been somewhat neglected during the focus on intrapartum care. They also argue that sustainable maternity care requires focus not just on maternal deaths, but also on near-misses and maternal morbidities, which present a far larger burden of disease for women globally. They explain that sustainable maternity care improvements will require working with local and national stakeholders to ensure that maternity care is safe, effective, woman-centered, and equitable.

In Chap. 14, Gutschow, Dolma, and Gonbo describe a team that has nurtured 40 years of woman-centered maternity and newborn care in a public hospital in the remote Himalayan region of Ladakh, India. The district hospital in Leh, Ladakh privileges vaginal delivery while providing skilled emergency obstetric care to produce outcomes that are equal to those found in Latin America. The hospital’s average MMR of 37 between 2000 and 2020 is less than one-sixth India’s average MMR and better than both Mexico’s and Argentina’s average MMRs of 45 and 51 respectively between 2000 and 2017 (WHO 2019). This team of obstetricians, nurse-midwives, and other staff developed a sustainable model for nurturing women’s reproductive rights in the face of increasing pro-natalism in the region, while flexibly adapting to shifting circumstances, new technologies, and policies within India’s rural health system. The model is sustainable because it has remained responsive to its community’s needs, while providing outcomes that were recognized as optimal across the region and the nation.

In Chap. 15, Roy, Qadeer, Sadgopal, Chawla, and Gautam illustrate how the dais of India provide a local, low-tech, high touch, humanistic birth model that is accessible to the most marginalized Indian women. They note that the dais’ monitoring of labor is sustainable because it is more woman-centered, pelvic-friendly, and evidence-based than the obstetric care found in many primary care clinics in the
four Indian districts they studied. They affirm that it is unsustainable to push low-risk births to poorly managed first referral units because that increases the burden both on institutions and on families who cannot afford costly transport or risks of poor, often abusive maternity care. They argue for national acceptance of home births attended by dais, and suggest that dais’ knowledges be considered essential resources within India’s maternity care system. With health budgets dropping in India and inequality rising in the face of climate change, drought, and other disasters, these authors argue that dais are essential to sustainable improvements in maternal and newborn care across rural India.

In Chap. 16, Adams, Craig, Samen, and Bhatta insist that a sustainable model of community-based maternal and newborn care involves local stakeholders, initiatives, and social networks. They describe their development of a model called the Network of Safety (NOS) in Nepal that emphasizes cultural respect, local ownership, ongoing education, and the creation of both physical and social infrastructures. Their aim is to *scale across* rather than simply scale up. “Scaling across” means prioritizing bonds of knowledge, trust, and infrastructure that move from households to referral hospitals and the halls of government—and back again—as opposed to exporting and imposing standardized status quo tactics across diverse regions and communities without local buy-in. Their innovative approach is flexible and sustainable because it responds to the particular needs of each community, Hindu or Buddhist, while also attending to individual experience. For them, an “n of one” is still a crucial index of success, rather than simply looking at numbers of facility-based births or other quantitative indices that fail to measure quality of care or degree of empowerment. They describe an NGO, One Heart Worldwide, that works with the Nepal government to support the cost of training local skilled birth attendants (SBAs), using municipal budgets. For them, *community ownership is vital to sustainability*, and public-private partnerships can foreground viable, ethical, and sustainable exit plans for their progress.

In Chap. 17, McDougall argues that inefficient interventions and medicines waste time and money in scarce economies of care within South Africa, while also producing further need for interventions to treat the iatrogenic harm they have created. This model of costly but ineffective obstetric care that generates requirements for further care is both unsustainable and ineffective, yet still widely practiced across the globe, as other chapters in our book have shown. Safely localizing birthing at home or in non-medical freestanding birth centers helps increase access to midwifery care. The “tranquil birth” model that McDougall outlines offers compassionate, rights-based care in post-apartheid settings where interventions and excess medicalization constitute generational trauma. Her chapter illustrates that home births and birth center births offer woman-centered care that makes better use of existing human and financial resources.

As Davis-Floyd, Lim, Penwell, and Ivry show in Chap. 18, when providing maternity care in a disaster zone, it can be wise not to have an exit strategy, but rather to enter with the intention to build long-term and sustainable maternity care. Even years after the multiple disasters that Bumi Sehat and Mercy in Action staff addressed, the clinics staffed by the midwives they trained are still providing
community-based care—in collaboration with local TBAs where possible. As their statistics demonstrate, a model of care based on the 12 Steps of the *International Childbirth Initiative* (ICI) can be cost-effective, life-saving, and sustainable, even in the context of utter devastation. As with our chapter on the dais of India, Robin Lim of Bumi Sehat issues a clarion call for including and collaborating with local TBAs who have earned the trust of the families they serve, to foster long-term growth and sustainability within communities.

In Chap. 19, Aneji and Little argue that for sustainable progress in the global fight against neonatal morbidity and mortality, focus would be best applied to systematic scaling up of low cost, low technology interventions like neonatal resuscitation (NR), kangaroo mother care (KMC), and proper hand washing. These measures all result in significant reductions in neonatal mortality in the hardest hit areas of the world. The authors state that systemic development of knowledge, skills, and quality improvement is critical to sustainable newborn care.

The accounts of sustainable maternity and newborn care in our volume help us recognize the value of skilled community midwives who are flexible, mobile, and thus less tied to bureaucratic hospital settings and their technologies than obstetricians or facility-based midwives. Our authors show that *de-centralizing birth care in favor of localized systems of support for normal physiologic birth will better prepare LMIC and high-resource nations alike for effective disaster care and pandemic responses.*

We single out sustainability as embodied in models where providers deserve to experience sanctuary and safety in their sites of care, thereby avoiding staff dissatisfaction and burnout. Our authors describe how caring for women and meeting their needs, listening to their voices, and applying informed consent at every step provides a sustainable environment where both staff and women can learn and feel listened to and honored for who they are.

### 20.4 Characteristics of Sustainable Maternity Care

Each chapter in our volume describes an individual model of birth that is sustainable and resilient in its local context or setting, while addressing the ways in which the model offers wider lessons for scaling up or across different settings or world regions. We now summarize what characteristics are most essential in sustainable maternity care:

- Humanized, evidence-based midwifery model care that honors women’s rights and agency
- Recognition of the rights and needs of mothers and providers
- Midwifery autonomy and collaboration with other providers
- Low-tech, high-touch, and lean models of midwifery care
- Scalability, replicability, and flexibility across varied and similar settings
- Maternal and neonatal outcomes that demonstrate success
• Cost-effectiveness that promotes access for the most marginalized persons
• Collaboration among providers and families within and beyond the healthcare system
• Provision of culturally appropriate and evidence-based care
• Fully integrated and collaborative maternity care systems that include all levels of providers
• Decentralized care based in and responsive to community needs and local context
• Care that embraces emergent realities of birth while downplaying risk and illusion of control

In conclusion, we highlight our previous statement that disruptions can provide a turning point or a moment of reflection where new solutions are sought. We argue that this is such a time. The failures of many medical systems across the globe to deal with COVID-19 pandemic effectively, especially in relationship to pregnant and laboring women whose support systems were disrupted, offer proof that the sustainable models of maternity care we illustrate are needed, now more than ever.

We have identified multiple aspects of sustainability and have shown that low-cost, low-tech, high-quality models match these criteria. We re-emphasize that the effects of the rapidly escalating climate crisis will soon demand such models and demand the decentralization of maternity care. Centralized health care and the bureaucratic inertia of large facilities are vulnerable to the disruptions of pandemics and other disasters that can destroy infrastructure. Smaller, localized facilities and models of care may be able to function during disasters and should be supported and expanded across the globe. Our mothers, our babies, and our providers deserve the chance to experience high-quality and sustainable maternity care in the face of future disruptions.

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