Epidemiology of Compassion and Love

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THE FOCUS AREA FOR COMPASSION AND ETHICS (FACE)

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Executive Summary

At its most fundamental level, epidemiology—the foundational science of global health—is an attempt to understand how and why phenomena are clustered, rather than evenly distributed by time, place, and person. Typically, epidemiology is used to describe patterns of disease, identify 'risk factors' associated with disease-related outcomes, develop and test interventions to influence those outcomes, guide the effective and efficient investment of health resources, and monitor progress toward the goals of global health programs. As humans, we do not typically experience love and compassion consistently, at the same levels of intensity and quality, at all times, in all places, or toward all persons. Thus, compassion and love seem to be clustered. This suggests that there *is* an epidemiology of compassion and love, even if we do not yet understand its quantitative dimensions.

With the support of the Fetzer Institute and in collaboration with the World Health Organization (WHO) Global Learning Laboratory for Quality Universal Health Coverage (UHC), the Focus Area for Compassion and Ethics (FACE) at The Task Force for Global Health convened a meeting on the epidemiology of compassion and love on 8-10 January, 2020. Seventy participants from a diverse range of backgrounds met to explore two fundamental questions. First, to what extent can epidemiology contribute to our understanding of compassion and love? Second, to what extent can epidemiology support and guide efforts to realize a 'loving world,' in which compassion is a key driver for quality health services?

The meeting was interdisciplinary in scope and depth. Scientific and personal presentations were bracketed with contemplative practice and energetic discussion.

- An *introductory session* on basic epidemiologic principles, with their potential application to compassion and love, was followed by *Session 2*, on conceptual foundations of compassion and love from the fields of psychology, religion, philosophy, and neuroscience.
- In *Session 3*, scholars and researchers representing psychology, education, neuroscience, sociology, spiritual and contemplative practice, health care, and public health shared perspectives on compassion and love at three different – but mutually reinforcing – levels of scale: individual (including patients, family members, workplace colleagues); organizations (including health care facilities, schools, and the workplace); and communities (including 'Compassionate Cities,' professional and religious communities, and national health systems). Scientific study of compassion and love at these three levels has relied on disparate methods, conceptual frameworks, and metrics, resulting in a lack of shared understanding.
- Considerable work has been done recently to measure and understand the impact of meditation and other contemplative practices on a range of outcomes, including health, well-being, stress, and pro-social behavior. *Session 4* examined the evidence for cultivation of compassion and love through specific training, practices, and programs, primarily at the individual and organizational levels.
- *Session 5* focused on the challenge of case definitions and metrics – perhaps the most significant current barrier to an epidemiology of compassion and love. Epidemiology is a quantitative discipline; what, precisely, should epidemiologists count? Self-report (first-person) measures have been developed for compassion and love at the individual level, but their utility is limited by lack of conceptual rigor, independent validation, and acceptance across disciplines and settings. Measures also have been developed for the 'recipient' or 'beneficiary' of compassion (e.g., patients in hospitals), so-called second-person measures. Less well-developed, particularly at the population level, are objective (third-person) measures of compassion, such as behavior, physiological measures, or laboratory tests, including brain imaging. Most measures of compassion and love focus on an individual's *trait* (predisposition), rather than a momentary and fleeting *state*. Meeting participants divided into three groups to consider case definitions and metrics at the individual, organizational, and community levels. These breakout groups affirmed that considerable additional

work is needed to conceptualize, develop, test, standardize, and apply case definitions and metrics for compassion and love across different cultures, settings, and levels of scale.

- In *Session 6*, participants heard from representatives of three philanthropic foundations that support research or programs on compassion or love. They included the Fetzer Institute, Templeton World Charity Foundation, and Izumi Foundation.
- *Session 7* focused on the spatial aspects of epidemiology – the utility and promise of 'mapping' compassion and love, including the identification of 'hot spots.'
- *In Session 8*, the appropriateness and utility of various epidemiologic methods for studying compassion and love were presented and discussed. Several randomized controlled trials – considered the gold standard in measuring causal associations and efficacy of interventions – have documented the effectiveness of different compassion interventions, primarily at the individual level. However, quantitative approaches may be insufficient to understand the epidemiology of compassion and love; narrative and qualitative approaches may be needed to counter the challenge of reductionism. Participants expressed a need to "protect the preciousness" of compassion and love while studying them. New approaches to epidemiology may be needed to address the relational and transcendent nature of compassion and love.

There was broad agreement among meeting participants that epidemiology *can* make important contributions to our understanding of compassion and love and that epidemiologic inquiry is needed to develop and validate metrics that can be used to guide and scale up programs dedicated to cultivating compassion at the individual, organization, and community levels. This work on metrics is urgently needed. A broad-based, multidisciplinary approach will be the most fruitful.

Participants recommended further development in three distinct areas:

Products. In addition to this meeting report, video recordings of individual presentations will be made available to the general public. We are seeking funding to support the development of several other products, including 1) a compendium of measures and metrics of compassion and love for use in epidemiologic research and program monitoring; 2) an advocacy paper on the necessity of compassion for achieving the sustainable development goals (SDGs); 3) an analysis of the public health burden resulting from the lack of compassion and love; and 4) briefing documents on the link between compassion and key dimensions of quality health services.

Research. Several directions were outlined for epidemiologic research, including 1) a systematic review of existing research on factors that cultivate or promote compassion and love; 2) a systematic review of the effects of compassion and love on well-being, quality health care, pro-social behavior, and human flourishing; 3) strategic application of existing measures and metrics to determine their utility in different countries, cultures, and religious traditions, and to collect population-level data; 4) rigorous assessment of interventions to cultivate compassion and love, particularly at the organizational and community levels; 5) development of new tools and measures; 6) consideration of innovative epidemiologic methods for researching compassion and love; and 7) a comprehensive, prioritized agenda for epidemiologic research on compassion and love.

Community of practice. Participants were inspired by the rich interdisciplinary exchange and spirit of intellectual generosity and warmth that characterized the meeting. They recommended a global community of practice to advance epidemiologic research, facilitate program support, and enhance collaboration on compassion and love. Suggestions included 1) convening working groups to advance progress on the above products and research recommendations; 2) participating in quarterly 'Global Health Compassion Rounds;' and 3) developing institutional partnerships and collaborations.

I. BACKGROUND

With the support of the Fetzer Institute, the Focus Area for Compassion and Ethics (FACE) at The Task Force for Global Health convened a meeting on the epidemiology of compassion and love on 8-10 January, 2020. Seventy participants from a diverse range of backgrounds, including public and global health, neuroscience, contemplative studies, ethics, economics, geography, sociology, psychology, anthropology, leadership studies, spiritual care, philanthropy, health services and systems, and organizational and community development, met to explore two fundamental questions. First, to what extent can epidemiology – the science that undergirds and guides global health – contribute to our understanding of compassion and love? Second, to what extent can epidemiology support and guide efforts to realize a 'loving world,' in which compassion is a key driver for quality health services?

With alarming levels of polarization and hostility so prevalent in our world today and the increasing availability of approaches to cultivating compassion at the individual level, understanding the epidemiology of compassion has practical, urgent, and programmatic implications, particularly for developing, monitoring, and scaling up compassionate health systems and global health programs. Of note is the increasing recognition by the World Health Organization (WHO) and national governments – notably Ethiopia – that compassion is essential for quality health services and the drive towards universal health coverage.

At its most fundamental level, epidemiology is an attempt to understand how and why phenomena are clustered in time, place, and by person. When faced with emerging threats to health, such as Ebola virus or SARS-CoV-2, for example, we typically turn to epidemiology to provide clues as to the nature of the threat (e.g., bacteria, virus, or toxic chemical) and identify 'risk factors' that may be causally associated with the threat. This information, in turn, can orient clinical, laboratory, and social scientists, and ultimately lead to effective interventions. For the study of compassion and love, however, epidemiologic inquiry has lagged far behind the disciplines of neuroscience, sociology, and psychology.

Human beings typically do not experience love and compassion consistently, at the same levels of intensity and quality, at all times and in all places. As such, love and compassion seem to be clustered. This suggests that there *is* an epidemiology of compassion and love, even though we do not know precisely what it is. We do know quite a bit about plausible causal antecedents of compassion and love in specific settings. For example, we have a sense that our innate or learned capacity for compassion and love ('traits') may be influenced by gender, intelligence, personality, and developmental stage. This capacity can also be influenced by situational factors, such as stress, sleep deprivation, and fatigue ('states'). Loving and compassionate action is also affected by our personal values, desire, and will, as well as our commitment to certain practices, such as compassion meditation. Our personal history – for example, exposure to the suffering of others, the experience of our own suffering, and our learned patterns of responding to suffering – may also influence our capacity for compassion. In addition, a wide range of societal factors may predispose us toward compassion and love, including parenting practices (attachment theory), cultural and professional mores (e.g., in nursing or medicine), religion, and the influence of authority figures and role models.

However, epidemiology is a quantitative discipline; case definitions of love or compassion have not yet been agreed upon (or even much discussed) for epidemiologic inquiry. Consequently, we have little quantitative information about how compassion or love vary by time (e.g., during the course of a lifetime, or in response to acute events or temporary states); by person (e.g., in those with certain personality types or values); or by place (e.g., in certain settings, such as health care, or in specific cultures). Consequently, current knowledge is insufficient for organizations such as WHO to make evidence-based recommendations for compassionate health systems, or for the Fetzer Institute to assess progress toward a more loving world, or for scaling up practices that cultivate compassion at the individual level in ways that motivate organizations and human systems to prioritize compassion.

II. MEETING OBJECTIVES

The overall goal of the meeting was to explore the potential contribution of epidemiology to our understanding of compassion and love and to the development of tools and metrics that can foster compassion and love in organizations, communities, and health systems. Nine key objectives were developed in pursuit of this goal:

- Develop a conceptual framework for the epidemiology of compassion and love that incorporates observations from a range of disciplines and experiences.
- Review current knowledge about factors that promote or enable compassion and love, with a focus on strength of association across the life course.
- Propose epidemiologically tractable 'case definitions' for compassion and love at three basic levels (individual; organization; and community) that can be further tested and validated in epidemiologic studies.
- Propose metrics for compassion and love at three basic levels (individual, organization, and community) that can be tested in programs and further validated in epidemiologic research.
- Consider the need for further development or refinement of epidemiologic methods to investigate compassion and love (and their transmission) at individual, organization, and community levels.
- Explore the utility of geospatial representation for understanding compassion and love and for tracking progress.
- Identify priorities for epidemiologic research on compassion and love.
- Identify potential 'quick wins' in application of epidemiological concepts to enhancing the quality of health services in the context of the move towards universal health coverage.

III. AGENDA, PARTICIPANTS, AND SESSION SUMMARIES

The meeting agenda is shown in Appendix I and a list of participants appears on Appendix II. The principal findings and issues from each of the nine sessions are summarized here.

DAY 1 – Wednesday, January 8th

Session 1: Welcome and orientation

1.1 Panel – 'Three Great Streams'

Participants: Mohammed Mohammed, Shams Syed, Thupten Jinpa
Chair: Ashley Graham

David Addiss opened the meeting, noting that the epidemiology of compassion and love is no longer an abstract or theoretical exercise. Rather, it is an urgent and practical necessity, of crucial importance to 'three great streams' of thought and action, which converge in this meeting. First, the epidemiology of love has practical importance for the Fetzer Institute, which is dedicated to a vision of a loving world, "a world where we understand we are all part of one human family and know our lives have purpose."[1] Epidemiology can contribute to understanding how love is transmitted and enacted, as well as to developing metrics to assess progress toward the goal of a loving world.

Second, a groundswell of interest and momentum highlights the need to bring compassion (back) into the center of health care. In their recent book, *Compassionomics*, Trzeciak and Mazzarelli reviewed the scientific evidence and concluded that compassionate care enhances healing and immune function and leads to better clinical outcomes; it also provides measurable benefits to patients, health care workers, and health systems.[2] The WHO now considers compassion as essential for quality health care, and is working with several ministries of health to develop compassionate health systems.[3] To implement compassionate health systems on a large scale, however, evidence-based guidance is needed on effective methods and appropriate metrics.

And third, a remarkable convergence of interests is emerging between the fields of global health and contemplative practice. The past two decades have seen an explosion of interest in lovingkindness and compassion meditation, as well as other forms of contemplative practice that foster mindfulness and resilience. A growing body of scientific evidence demonstrates the effectiveness of such practices at the individual level, but little is known about how to effectively scale up these programs to organizational or societal levels. With its vast experience in large scale programs, global health may be able to assist in this regard. Conversely, with its own epidemic of burnout and moral distress, global health practitioners and institutions also have a need for contemplative practices and norms.

Mohammed Mohammed offered a brief history of the Fetzer Institute and described the vision of John Fetzer, who dedicated his life to spiritual work after surviving the 1918 Spanish influenza pandemic. The Fetzer Institute played a major role in catalyzing the mind-body-health movement and has conducted decades of influential research and programming on love and compassion. John Fetzer believed that, "Love is the core energy that rules everything ...love is the one ingredient that holds us all together."[1]

Shams Syed highlighted the opportunity for people-centered Universal Health Coverage (UHC) – currently a priority for WHO – to serve as an 'entry point' for compassion and love at the global level. The lack of quality health care is a leading cause of suffering and death. Approximately 8.6 million deaths per year are caused by lack of access to quality health care. Of these, 5 million occur in persons who are able to access the health system but receive poor quality care.[4] High-quality health systems could prevent 2.5 million deaths from cardiovascular disease, 1 million neonatal deaths, and half of all maternal deaths annually.

Quality of care can be defined as the degree to which health services for people and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge. Multiple quality elements have been described over decades. There is now a clear consensus that quality health services should be effective, safe, and people-centred. In addition, to realize the benefits of quality health care, health services must be timely, equitable, integrated, and efficient.[5] Improving quality implies multi-dimensional change, the product of individuals – working with the right attitude – in the right system.

UHC lies at the center of the SDGs, which makes it a global priority. The overarching aim of UHC is for all people who need health services to receive high-quality care without financial hardship. Quality health services (promotive, preventive, curative, rehabilitative and palliative) is thus embedded within the definition of UHC.[5]

It is increasingly clear that compassion is essential for quality care. WHO Director-General Tedros Adhanom Ghebreyesus has stated that, "Quality is not a given. It takes vision, planning, investment, *compassion*, meticulous execution, and rigorous monitoring, from the national level to the smallest, remotest clinic."[6] Compassion contributes to all seven domains of quality health services, especially the domains of people-centeredness, safety, and effectiveness.

WHO has established a Global Learning Laboratory to explore key aspects of quality UHC, including compassion.[7] The Global Learning Laboratory seeks to harness practical applications of compassion to improve quality at four levels: point of care; health facility; organization; and national health service. Syed emphasized the need for the epidemiology of compassion and love to have a solid conceptual and scientific foundation. It will be important for this inquiry to demonstrate results and to have practical applications in a variety of contexts.

Thupten Jinpa noted that compassion has many definitions, although the one proposed by Goetz et al., "the feeling that arises in witnessing another's suffering and that motivates a subsequent desire to help,"[8] is fairly widely accepted. This definition includes components of awareness, emotional resonance, and action.

Within health care, Sinclair has described seven key dimensions associated with compassion: attentiveness, listening, confronting, involvement, helping, presence, and understanding.[9] Exploring and attending to these dimensions may be useful in scaling up compassion.

How might we think of creating a compassionate world? We need compassionate *individuals*, and we are already bringing compassion training into key sectors, such as medicine, law enforcement, and first responders. But we lack knowledge in how to create compassionate *systems*.

If we want enduring change, we need to work for compassion at the level of institutions; we need to bring ideas of compassion into institutional structures. The field of human rights provides a model of a systemic or 'top-down' approach, which created a shared moral language at the global level. The human rights approach has been criticized, but it's also had a huge and positive impact. To raise compassion to the level of human rights, we face several challenges. We need a clear articulation of the need for compassion (i.e., clearly describing the public health impact of the lack of compassion, including the rising epidemic of loneliness, mental stress, and stigma, for example). We also need to develop a universal language of compassion and greater conceptual clarity about what we mean by compassion and how it relates to other values and concepts, such as justice, fairness, and equity. We have a relatively robust vocabulary and conceptual understanding of compassion at the individual level, but they require translation to the institution and societal levels. In addition, practical metrics are needed to monitor, assess, and evaluate compassion and compassion interventions. The field of human rights has been particularly successful in establishing clear metrics and assessment tools.

1.2 Key Points of Discussion – All

- It may be easier to define or identify where compassion is *absent* than where it is present. We may be able to learn about the epidemiology of compassion from the epidemiology of phenomena that indicate the absence of compassion, such as interpersonal violence, cruelty, or exploitation.
- Health care in the United States and elsewhere has become a business. Increasingly, our experience of health care is mechanical and technological; it feels devoid of compassion. Yet compassion *can* exist within the context of business.
- Shared definitions and concepts of love and compassion will be essential for advancing our understanding of their epidemiology.
- If we operate on the assumption that compassion is an innate human quality, then compassion is already 'scaled' on a global level. The question then becomes how to activate, sustain, and systematize it in global health.

1.3 Panel – Epidemiology 101
Participants: David Addiss, Katie Gass

David Addiss presented an introduction to the principles of epidemiology, noting that at its most fundamental level, epidemiology seeks to describe and understand how and why phenomena (most often, diseases) are distributed by person, place, and time. In other words, why do things 'cluster' – why are they not uniformly distributed? To understand and control transmission of infectious diseases, epidemiologists focus on the three components of the 'epidemiologic triad': the infectious agent or organism; the environment in which the agent lives and is transmitted; and factors specific to the human host, such as immunity, nutrition, or behavior, which predispose to infection. In a paper published 20 years ago, Jeff Levin made the case that love can be considered an agent, environmental factor, or host factor.[10] Indeed, a perusal of writings, quotes, and public speeches reveals how these three perspectives are invoked when people refer to compassion and love.

By comparing characteristics of persons who are infected and those who are not, epidemiology identifies 'risk factors' for infection, which provide clues for intervention and prevention. The tool of epidemiology has been successfully applied to other phenomena, such as chronic diseases, behavior, violence, and motor vehicle crashes. There is no inherent reason why it could not also be useful in understanding and fostering compassion and love. The human experience of compassion and love is that they do, in fact, cluster by time, place, and person. One of the most significant challenges to a robust epidemiology of compassion and love is the lack of agreed-upon case definitions that can be used for epidemiologic investigation.

From an epidemiologic perspective, compassion and love can be viewed as outcomes, in which case the question is: what are the 'risk factors' for compassionate and loving actions? An equally compelling perspective is that of compassion and love *as* 'risk factors,' or predictors of outcomes that we value as individuals and societies, such as kindness, pro-social behavior, quality health care, and social justice.

Finally, for our purposes, we can consider five key uses of epidemiology: 'describe stuff' to develop hypotheses about the nature of the world; identify causes or risk factors for specific outcomes of interest; develop and test interventions to increase the likelihood of those positive outcomes; assess relative costs and benefits in order to facilitate good stewardship of our public resources; and monitor progress toward our common goals.

In her reflections, **Katie Gass** called out the need to conceive of compassion and love as objective elements that can be measured and interpreted. Drawing on epidemiology, she reiterated that compassion could be viewed as a vector (compassion can be infectious), an environmental factor (something you encounter in the spaces around you), and a host factor (a trait or a competency to be developed) – each with specific challenges and opportunities for case definitions.

1.4 Key Points of Discussion – All

- How does exposure to adversity affect our ability to experience compassion or to be aware of the suffering of others? Resilience may be an important component for compassion to be enacted.
- Is compassion limited to alleviating suffering that already exists, or can compassion motivate the *prevention* of future suffering?
- We work in systems – how do we create an environment that allows compassion to flourish? What are the characteristics of compassionate communities and organizations that support compassion at the individual level?
- Epidemiologically, individual and collective aspects of compassion may act as confounders or effect modifiers. Teasing out the key factors will require a multivariate approach.
- Compassion without discernment or wisdom is insufficient – and potentially harmful.

Session 2: Conceptual foundations

2.1 Panel – Conceptual foundations
Participants: Jeff Levin, David Shlim, Richard Davidson, Stephen Post
Chair: Jenny Mascaro

Epidemiology of love: evolution of an idea
Jeff Levin provided an overview of scientific research on love, particularly the psychology of love, which began in the 1950s. Early work by Lee, who in the 1970s developed a model on the 'colors' or expressions of love, was particularly influential.[11] Considerable work by psychologists and sociologists followed, resulting in different taxonomies and typologies of love. Psychologists also developed scales to measure love, and psychological research on love has continued.[12] Despite the high quality of research on love in academic psychology, it has been conceptually limited to romantic or affectionate love.

The most influential sociologist to study love was Pitirim Sorokin, who in the 1950s established a research center at Harvard to study altruism. Sorokin wrote about love from a more expansive perspective, exploring altruistic and other forms of love. In his classic book, the Ways and Power of Love, he described six aspects (domains) and five dimensions (traits) of love.[13]

Work on the epidemiology of love slowly emerged from this earlier work on psychology and sociology, with some early population-level studies in the 1970s-1990s. In the early 1990s, Levin and colleagues developed a compassion measure in an effort to operationalize Sorokin's concept of love and to better understand the experience of love. It was validated and tested, and included 24 items with 6 subscales.[14] At a 1998 meeting convened by the John Templeton Foundation to explore 'sources of human strength,' Levin was asked to write a paper on the epidemiology of love, which was published in 2000. Additional impetus to epidemiologic research on love came from a 1999 conference on Empathy, Agape, and Altruism, funded by the John Templeton Foundation and the Fetzer Institute, and from a request for proposals by the Institute for Research on Unlimited Love in 2000.

Levin offered four recommendations for carrying the work on epidemiology of love forward:

- Validate research instruments to assess and study love across nations, cultures, and religions. Comparability of results using different instruments in different cultures is a problem.
- Collect population data through inclusion of measures or questions on love in ongoing national and global population surveys (e.g., General Social Survey, National Health Interview Survey, Gallup World Poll, World Values Survey, International Social Survey Programme, European Social Survey, or the Survey of Health, Ageing and Retirement in Europe). This requires funding, but many of these surveys offer the opportunity to 'purchase' questions.
- Establish outlets for research on the epidemiology of love, such as an invited symposium, a special issue of a medical or public health journal, a request for proposals, an edited book, or a consensus conference.
- Focus on practical applications for global health and development, including program evaluations and evaluative research, with an emphasis on outcomes.

Origins of compassion

David Shlim shared his experience of working in Nepal for years as a physician, which led him to a deep exploration with Tibetan Lamas into the nature of compassion.[15] If we look for compassion, we can find it in virtually every human being. Compassion is a universal quality. But where does it come from? There are four basic views or theories, each of which has implications for the question of whether it is possible to increase one's capacity for compassion and to scale it up in human society. These include the following:

- *Compassion is a product of evolution*; it has a genetic basis. To the extent that this is true, compassion may only be modifiable to a limited extent.
- *Compassion comes from God*. For religious people, a relationship with God can be a powerful motivator for, and source of, compassion.
- *Compassion is acquired through one's upbringing*. There is strong evidence in support of this view, but it only goes so far, as there are also exceptions: having loving, caring parents does not necessarily make one compassionate, and vice versa.
- *Compassion is an intrinsic quality*, a natural part of our minds. If compassion is naturally present, to what extent can it be expanded?

From a Buddhist point of view, there are two types of compassion. Conceptual compassion, which is how we usually understand compassion, arises in relation to a specific person or event and requires conscious effort. Conceptual compassion seems limited; we only have a finite amount, it wears out over time, and we need to

recharge it, for example, by taking a vacation. It is easier to have conceptual compassion for people who we know or who are kind to us.

The second type of compassion, non-conceptual compassion, involves a spontaneous feeling of warmth and kindness toward others. It doesn't need a specific object and does not wear off over time. Where does it come from?

Buddhism teaches that non-conceptual compassion is an inherent, natural quality of mind. But it is obscured by thoughts and emotions. So training in compassion involves removing obstacles, rather than inserting or boosting compassion. Non-conceptual compassion, which flows from a relaxed mind, a mind free of these obstacles, is stable, vast, and effortless. The way to a relaxed mind is through meditation, which allows you to watch and let go of thoughts and emotions. Compassion training cultivates the capacity to maintain a relaxed, aware mind, while being motivated by the desire to help others. As Phakchok Rinpoche has noted, "the whole purpose of meditation is to see the nature of mind, which is peaceful, compassionate, pure and free of all concepts."

Compassion is a skill

Richard Davidson described several key themes that have contributed to our scientific understanding of compassion: neuroplasticity; epigenetics and the importance of environmental factors on genetic expression; the extensive bidirectional communication between the mind/brain and the body; and innate basic goodness. On the latter point, Davidson shared video clips that support the point that basic goodness is innate. As with language, we come into the world with a biological propensity for compassion. However, for that propensity to be expressed, it requires a community to help cultivate it.

There is an urgent need for compassion and its associated qualities. The most recent World Happiness Report indicates that happiness is decreasing in many countries, including in the United States.[16] Morbidity and mortality are increasing in certain subgroups, associated with suicide and alcohol and substance abuse. Depression is on the rise, especially in adolescents; it is now a leading cause of disability worldwide.

The Center for Healthy Minds[17], which Davidson founded, considers well-being as having four main pillars:

- *Awareness* – the capacity to attend to our mind, including meta-awareness. A wandering mind is an unhappy mind.
- *Connection* – including compassion and other qualities that promote harmonious interpersonal relations.
- *Insight* into our self-narratives. Our thoughts and beliefs about ourselves are not reliable veridical descriptions of who we are. Insight helps us develop a healthy relationship with these self-beliefs.
- *Purpose* – A clear sense of direction in our lives.

Because of the extensive bidirectional communication between mind and body, the most specific *biological* changes that we can make in the brain today are through *behavioral* interventions. As few as seven hours of compassion training can increase altruistic behavior and alter neural connections in the brain, as assessed by functional magnetic resonance imaging (fMRI).[18]

It is important to distinguish between empathy and compassion. Empathy is the ability to experience the emotion of another. Compassion can be described as the detection of suffering in another and a motivation to help or alleviate that suffering. Empathy and compassion have separate neural networks in the brain.[19] The neural pathways for empathy resemble those for pain; extended empathic arousal can be toxic, leading to burnout, whereas compassion is inexhaustible. So the term 'compassion fatigue' is a misnomer; it is more accurately regarded 'empathy fatigue.'

Unpublished data suggest that a mindfulness and compassion intervention in pre-service teachers can reduce implicit bias. This has practical implications, since implicit bias (e.g., to racial and ethnic out-groups) is a primary contributor to gaps in achievement and discipline in schools.

Reflections on compassion and love

Stephen Post highlighted the need for clear definitions in the scientific study of compassion and love, and shared a taxonomy of related concepts and terms, with love at its core.[20] The definition of love proposed by Henry Stack Sullivan is both practical and readily understood: "When the satisfaction or the security of another person becomes as significant to one as one's own satisfaction or security, then the state of love exists. Under no other circumstances is a state of love present, regardless of the popular usage of the term."[21]

The term 'love' can seem abstract in its essence, but it is manifest in tangible acts of kindness, empathy, and compassion, as well as in creativity, loyalty, and gratitude. Post commented on several of these manifestations of love in health care settings.

Kindness is a form of gentle curiosity about patients, which manifests in some indication of personal interest, e.g., asking the patient, "How are things at home?" Kindness is not as emotionally demanding as empathy.

Empathy is manifested by an interest in understanding others' experience, usually through focused communication and questioning. For this interest and communication to be perceived by patients as genuine, it requires 'resonant emotions' and an 'affective presence.' Empathy is not a matter of technique.

Compassion, which flows from love, can be described as empathy plus action (or at least the intent to act) in order to relieve suffering.

Living with and embodying love and compassion require intention. Post stressed the importance of starting each day by becoming grounded, visualizing the people with whom you will interact, how those interactions will go, and being mindful of one's responses – and turning off destructive stressful emotions. He also described the "infinite mind of love, which sometimes invades us unexpectedly."

2.2 Key Points of Discussion – All

- People in power, including in global health, tend to control the dominant narratives, and these narratives can impede actionable compassion. How can we penetrate these narratives and have the necessary conversations about compassion, love, and justice in global health?
- To assess an individual's level of compassion, we must ask not only that individual, but also their loved ones, who know them well.
- The more that people train in compassion, the more likely they are to detect areas of their lives in which they are not compassionate.
- In global health organizations, we need to cultivate compassion for the people we work with, our colleagues, not only for the people we serve.
- How does the lack of compassion contribute to racial disparities in the United States?
- Is empathy required for compassion? Can compassion arise without an empathic response? Although scientific evidence may be lacking on these questions, it is generally understood that you *do* need empathy for compassion, but how long you remain in the 'empathic zone' is debatable There is probably "no route to compassion without empathy."
- To understand the epidemiology of compassion, as well as the need for it and how it flows, we must first understand suffering.

Session 3: Perspectives on compassion and love and different scales

Compassion and love are enacted at different levels, which may require different metrics and conceptual foundations. For example, the Global Learning Laboratory at WHO conceptualizes compassion at four levels within the health care system: patient, health facility, organization, and national levels. For the purposes of this meeting, we considered compassion and love in three broad categories: individual, organization, and community. The individual level focuses on the individual and her/his interactions with other individuals, including patients, colleagues, children, and others. The organizational level includes health care facilities, schools, the workplace, and other settings. The community level is a broad category that includes geographic communities (e.g., 'Compassionate Cities'), nations, religions, and national health systems. With this tri-level framing, we may begin to think about how to extend compassion from the individual level to the level of global health.

3.1 Panel – Compassion and love at the individual level
Participants: George Grant, Christina Puchalski
Chair: Shams Syed

George Grant shared personal experiences that have caused him to reflect on compassion and love. He encouraged us to consider our own individual journeys, and to think about what sources we rely upon for sustenance and flourishing. In the health care setting, passive listening is insufficient, he said. We are called to be intentional in our approach and to be effective change agents. He described his current work on spiritual health as being informed by two key questions: can we take the principles of cognitively-based compassion training (CBCT) and make them accessible at the bedside? And can we do this in seven or eight minutes? These questions have led to a wealth of research and development of interventions. Grant concluded his remarks by describing the three modalities of empathy: the first, the initial shared experience of suffering; the second, mentalizing, 'vicarious introspection,' or envisioning what the other person is feeling; and the third, empathic concern, which leads to applied compassion. Compassion can become a "massive contagion that changes the world," he concluded.

Christina Puchalski stressed the importance of attending to suffering in the provision of health care, developing the necessary skills to do that, and creating spaces where people can share and express their suffering. Spiritual distress, she said, is associated with poor health outcomes, including physical pain, depression, and anxiety. She highlighted the need to bridge the 'reductionist' world of medicine and science with theological, philosophical, and humanistic approaches to develop and implement models of compassionate care. Puchalski then offered insight into ways to foster *compassionate presence* in health care, which she described as awareness of one's calling, spirituality, and transformation; the practice of *contemplative listening*; and clinical care as spiritual practice. Contemplative listening is essential for compassionate presence.

Curricula have been developed to teach contemplative listening. In medical schools, for example, students participate in reflection rounds (GWish-Templeton Reflection Rounds).[22] Compassionate presence and contemplative listening are also included in the Interprofessional Spiritual Care Education Curriculum – ISPEC,[23] a Global Education and Leadership Curriculum aimed to fully integrate spiritual care practice by clinicians and chaplains, into clinical settings, and the GRACE model, developed by Joan Halifax, which involves gathering, recalling, attuning, considering, and engaging.[24] Importantly, Puchalski emphasized that there is no quick fix to suffering – rather, alleviating suffering requires accompaniment.

3.2 Key Points of Discussion – All

- Health care providers are so rushed and pressed for time now. How can they establish a deep connection with a suffering person in a short period of time? Connection starts with intention and

the desire and skills to recognize spiritual distress. It starts before even entering the patient's room. Presence is something that can be taught effectively.

- Where does this fit within the medical industrial complex? Is there a diagnostic or reimbursable code for 'engaging'? There actually is a code for 'counseling for spiritual distress,' and additional taxonomies are being developed for spiritual care providers including generalist providers (physicians, nurses and other providers) and spiritual care specialists, such as chaplains.

3.3 Panel – Compassion and love in organizations
Participants: Heather Howard, Melissa Bingham, Laura Berland, Richard Davidson
Chair: Shams Syed

Speaking on her experience with the international NGO Alight (formerly the American Refugee Committee), **Heather Howard** noted that 'compassion' is often absent from articulated values, vocabularies, and metrics of humanitarian organizations, despite the fact that humanitarians are called to action by a deep sense of compassion. She asked: how might we unleash compassion in humanitarian services to create experiences of connection and meaning? Over the last couple of years, Howard led the development of an initiative called Amandi, which seeks to embed compassion in humanitarian services. Through research with Alight staff and beneficiaries, it became clear that the word 'compassion' is already used by recipients as well as providers of services. Thus, the challenge is not about teaching frontline providers to be compassionate. Rather, we need to remove obstacles that currently prevent the expression and flourishing of compassion within organizations and systems. A key lesson that emerged in Amandi is that compassion needs to be embedded at all levels (i.e., individual, organizational, and community) to create healing environments. Howard explained that there are many interrelated domains that must be addressed, including client experience, healing environments, compassion and connection, and staff wellness. Amandi was developed using human-centered design processes, which honors the 'humanness' of compassion and is intentionally inclusive of diverse backgrounds and perspectives.

Melissa Bingham said that when seeking to cultivate compassion in global health, health care organizations are a great place to begin because they influence health policy, the communities they serve, and the health systems in which they operate. She explained that it is important to focus on all the levels of care (i.e., primary, secondary, and tertiary), both vertically and horizontally within the health system. She then shared examples to demonstrate how this operates in practice, drawing on recent experience in Timor Leste. Their recently-established health system has three levels – community center, regional, and national. Because the health system is relatively new, health service policy at the ministerial level is still in development, which provides an opportunity to design with compassion in mind. The national hospital helped to foster such a focus by featuring compassion in its annual 'values day' last year, offering compassion training to health workers at the hospital. Bingham also shared examples from Ethiopia, further illustrating a bottom-up approach to behavior and attitudinal changes. We can learn a lot from countries doing this innovative work, she said. In closing, Bingham highlighted the findings of a 'co-development call' issued by the Global Learning Laboratory at WHO, which sought to understand how a culture of compassion can drive positive change in health organizations and lead to quality improvement. The responses from a broad network of respondents indicated that a culture of compassion leads to sustainability through patient and staff satisfaction; intersectionality and shared learning; mutual respect and accountability; effective and transparent communication; and more effective health care.

Laura Berland highlighted the role of leadership in fostering compassionate organizations. The need for compassionate leaders is urgent and timely, as a significant proportion of the workforce is either disengaged or working around the clock, which leads to burnout and diminished well-being. At the same time, in some sectors, there is evidence of a shift away from an exclusive focus on profits for shareholders to a new emphasis on corporate decision-making for the greater good, including the well-being of 'stakeholders,'

from employees to others in the community. Berland explained that 91% of leaders in a survey published in the Harvard Business Review reported that compassion is very important in leadership; 81% also said they would like to become more compassionate, but don't know how.[25] Conditions that foster compassionate organizations include: setting the intention, aligning the mission and values, establishing a bedrock of psychological safety and trust, giving staff permission to do the right thing, and using compassionate communication. Leaders set these conditions by embodying, modeling, and inspiring. They cultivate a compassionate organization by focusing the organizational attention (as is done in mindfulness training for individuals) and support this with training, resources, policies, and processes. Ultimately this embeds compassion within the culture and creates an ongoing community of practice. In closing, she stressed the importance of establishing a rich foundation (i.e. within organizations) from which compassion can flow and flourish.

Richard Davidson spoke about compassion at the organizational level through the lens of neuroscience. He began by distinguishing between two fundamentally different kinds of learning. The first, declarative learning, refers to learning *about* something. For example, you can learn the value of compassion and honesty but that doesn't necessarily make you a compassionate or honest person. The second type of learning is procedural. It is embodied and skills-based, generated through different brain mechanisms. Importantly, cultivating compassion within individuals and organizations requires both types of learning. Davidson shared an example of research that is currently evaluating the impact of compassion training in leaders and the ripple effect throughout the organization. In a study involving 1200 principals from public schools across five states in Mexico they asked: if we train principals in both awareness and compassion (using declarative and procedural learning), how will that impact the children? Initial findings are encouraging. This is one approach to empirically examining how training at the leadership level may propagate through the system downstream.[26]

Davidson also distinguished between proximal and distal outcomes. Proximal outcomes are often used to measure the impact of compassion training, and they are directly related to compassion. Distal measures of compassion training, however, might include school absenteeism or health care utilization. We expect distal outcomes to be related to the proximal outcomes. We need both proximal and distal outcome measures in the same study to learn how changes in proximal outcomes affect distal outcomes. Studies of this nature are well-suited for research within organizations.

Davidson concluded by noting that The Center for Healthy Minds does not offer training in compassion alone, but rather, in multiple areas that promote human flourishing and well-being. He emphasized that flourishing requires fostering a 'constellation' of qualities, and that training in only one of them would be like going to the gym and only working a single muscle group.

3.4 Key Points of Discussion – All

- It is difficult to translate compassion across organizations and systems if compassion is considered an emotion, rather than an attitude and perspective.
- In organizations, compassion may not be an articulated value but it can be an implicit value that is encompassed by other values that are explicitly stated, such as 'spark joy' or 'be human-centered'.
- We need to pursue cross-generational compassion training and consider the effect of age in understanding the epidemiology of compassion and love. There is important cultural variation between age groups.
- Are appreciation and gratitude expressions of compassion?
- How do you select for compassion? What criteria would you use to hire more compassionate employees?

3.5 Panel – Compassion and love at the community level (and beyond)
Participants: Charles Barker, Daniel Burssa, Eric Kim
Chair: Liz Grant

Charles Barker began by providing an overview of the Charter for Compassion, which was established by Karen Armstrong to promote compassion worldwide.[27] The Charter promotes compassion at the community level, with the Golden Rule as its guiding principle. Barker described compassion as comprised of three components: *awareness* of suffering, a *desire* to mitigate that suffering, and appropriate *action* (with lovingkindness). Currently, 112 cities have affirmed the Charter and are involved in on-going efforts to promote and embody compassion.

Focusing on the health systems perspective, **Daniel Burssa** described the efforts in Ethiopia to foster compassionate, respectful, and caring health professionals.[28] Compassion is a central pillar in Ethiopia's new Health Sector Transformation Plan (HSTP), which lays out a strategy to improve quality and access to health services. Within the health system, challenges include poor communication with patients, families, and health professionals; inadequate quality of care; lack of trust; and patient dissatisfaction. Burssa outlined several essential components of the HSTP, which include political commitment and a strategy for implementation, including in-service training, integration of compassion within health sciences curricula; stakeholder engagement; and 'compassion incubation centers' where innovative approaches to compassionate care can be tested. He also shared important challenges to fully implementing compassion as described in the HSTP, such the fact that 'compassion' is poorly understood and that the work environment may not be receptive to some of these changes. He emphasized the importance of linking compassionate action with incentives and the need to develop good tools for monitoring and evaluation. Ethiopia's experience of incorporating compassion at the national level of the health system reveals four important insights: (1) a compassion agenda *can* be implemented at national, organizational, and individual levels; (2) compassion can be learned through training; (3) compassion is transgenerational; and (4) measurement is critical.

Eric Kim proposed a three-phase idea to study and implement compassion interventions at the systems level. His thinking is driven by a single question: "In the next 5 years, how can we change systems and organizations that influence social determinants of health and well-being so that we can unleash as many units of love and compassion in society as possible?" In the first phase of the proposed plan, Kim suggests a 'listening tour' with the Dalai Lama and key decision-makers (e.g., CEOs of large businesses in various sectors of the economy) to deeply understand what metrics drive business decisions on a daily basis. The logic here is that if we find that increased compassion can help organizations achieve these key metrics, then they will be much more willing to actively cultivate compassion in their organizations. He suggested that this work should be done with foundations (e.g., the Chan Zuckerberg Initiative; the Andrew W. Mellon Foundation) that fund large cohort studies. Phase two would involve developing the infrastructure for research on the epidemiology of compassion and love, which includes developing measures and collecting information from existing cohorts, perhaps adding measures to existing studies around compassion and love. The third and final phase would involve testing these measures to understand how compassion and love might influence – or not influence, as we should also be open to null results – key outcomes that businesses care most about (e.g., increased productivity and reduced absenteeism). If we find that higher levels of compassion and love contribute to higher levels of key metrics that organizations care most about, they might be much more willing to invest in compassion and love interventions.

3.6 Key Points of Discussion – All

- We must engage with issues of hierarchy in communities and organizations – how do we ensure that compassion, and compassionate care, is equitable?

- What does linking compassion with incentives look like? In particular, for community health workers and those involved in community development?
- How can we reduce resistance to compassion interventions or reforms at different levels? Buy-in from political, religious, community, and informal leaders will be important.
- Working collectively and thinking big (e.g. Kim's 3-phase plan) will ensure the greatest impact.

DAY 2 – Thursday, January 9th

Session 4: 'Becoming compassionate' – the role of training

Session 4 addressed the role of training in fostering compassion. Recent intervention research has focused on compassion at the individual level; less attention has been devoted to compassion at the organizational and community levels. The two panels in this session summarized evidence for the effectiveness of compassion training, skill development, and systems change at the individual and organizational levels.

4.1 Panel – Cultivating and training for compassion at the individual level
Participants: Tyralynn Frazier, Thupten Jinpa, Jane Chun, Marcia Ash, Dominic Vachon
Chair: Jenny Mascaro

Tyralynn Frazier provided an overview of a freely-available curriculum for cultivating compassion in students of K-12 schools, developed by the Center for Contemplative Sciences and Compassion-Based Ethics at Emory University. Known as the Social Emotional & Ethical (SEE) Learning program, this curriculum aims to create a compassionate and ethical world for all – to educate hearts as well as minds.[29] Frazier described compassion as involving "the wish to relieve or prevent the suffering of another out of a genuine concern for their well-being and a sense of tenderness and care for them." At its core, compassion training helps foster connection. She argued that compassion is comprised of discrete cultivatable skills or 'enduring capabilities.' Cultivation of these skills supports one's ability to relate to oneself, others, and humanity through kindness, empathy, and a concern for happiness and suffering. The SEE Learning framework incorporates these enduring capabilities and skills (i.e. awareness, compassion, and engagement) at each level (i.e., personal, social, and systems levels).

Frazier also described the SEE Learning Compassion Lab, which is a research program designed to advance the science of compassion and human flourishing among students and educators. The Lab aims to develop and implement evaluation standards that will form the evidence base for the SEE Learning program; determine the effect of the program on expanding a child's zone of resilience, or ability to maintain a state of well-being in the midst of exposure to adversity exposures; develop models of adaptive stress and coping processes; and understand ways that compassion training might impact processes (i.e., behavioral, cognitive, neurobiological, neuroendocrine, and immune) involved in cultivating resilience. While there is evidence that compassion training can act as a buffer for those exposed to others' suffering, more research is needed to develop the science.

Thupten Jinpa began his remarks with an important paradox: if compassion is natural, why do we need to cultivate or train it? First, compassion in its most natural state arises as a *response* to a need (e.g. suffering). Through training, he argues, we can make compassion more *intentional.* Additionally, we tend to reserve compassion for our immediate circle; for strangers, we respond with compassion only in severe cases. Through training, we can expand our circle and connect more broadly to other beings. Training counters the 'numbness' that can result from exposure to suffering. Training focuses on perception and attitudes, particularly intention-setting. When you are more conscious of your intention, you can connect that

intention to your values (e.g., compassion), which enables you to bring these values into a particular situation. This theory of change is illustrated as follows:

Perception (outlook) – the way we perceive the world →
Changes *attitudes & values* and the intentions we bring into the world →
Which influences our *emotions (feelings)* →
Which motivate our *behavior (response)* →
Which, when repeated, leads to the *formation of habits* →
Which reinforce or change our *perceptions*.

Jane Chun introduced the 'The Iceberg Model' to illustrate that – in our efforts to foster change – we must attend to what lies beneath the surface; that is, patterns of behavior, systemic structures, and mental models. The greatest leverage point for change, she argued, lies at the deepest level (i.e., our values, assumptions, and beliefs). To create transformative change, we need to be imaginative, develop new frameworks, and work at the level of the mind.

She then provided an overview of two training programs at the Compassion Institute. The first, the Compassion Cultivation Training (CCT), is an 8-week curriculum supported by many empirical research studies. Key research findings show that CCT increases compassion for self and others and a willingness to receive compassion; improves self-reported mood; reduces mind-wandering; and reduces maladaptive emotion regulation strategies (with a shift toward acceptance).[30-34] CCT has also been shown to increase self-compassion and mindfulness scores, reduce interpersonal conflict, and result in marginal job satisfaction improvement.[35] Studies comparing CCT to other trainings show that CCT had a greater effect on measures of compassion.[36,37] The Compassion Institute is working with partners toward more research on compassion-based interventions that will include: interventions using active control and waitlist control groups, neurophysiological measures, and behavioral measures. Longitudinal studies are planned that will pay attention to dosage and timing of CCT. The Compassion Institute has also completed four pilot studies of a second training program, a 6-week curriculum called Compassion at Work: Preventing Burnout in Healthcare, which is now being rolled out in healthcare settings. Chun shared four key lessons for developing and piloting a curriculum: (1) it's good to have a mix of different types of learning methods; (2) practice, practice, practice; (3) carefully select instructors with awareness of the local context and their community connections; and (4) sometimes it's helpful to include people from different disciplines to help them connect across disciplines and departments, while other times it's more appropriate to design the group make up to include those from within a discipline.

An important final take-away from Chun's talk is that the goal of compassion training is not to cope better within a dysfunctional system but, rather, to cultivate skills that allow us to become more resilient and contribute to systemic change. We must work at all levels.

Engaging with the question **"**Does compassion training 'work'?", **Marcia Ash** reviewed evidence for Cognitively-Based Compassion Training (CBCT). She explained that CBCT begins with foundational practice ('resting in a moment of nurturance') in which the meditator reflects on an experience of receiving compassion, followed by mindfulness training, and then active, analytical meditation (first directed at self, then moving into extending compassion toward others). CBCT is traditionally an 8-week format but is being adapted to accommodate specific needs and settings. Research indicates that health outcomes of CBCT training include decreased depression, more rapid recovery of cortisol levels following social stress, decreased inflammatory responses, decreased burnout, and decreased cortisol levels among infants and young children (whose parents practice CBCT).[38-44]

Does CBCT make you more compassionate? How do we measure that? Current findings that could be proxies for increased compassion include increased empathic accuracy, altered amygdala responses to the suffering of others, and increased self-reported compassion and self-compassion.

If compassion training 'works,' future research must explore the mechanisms of change. Other questions that must also be answered include: What *dose* of compassion training is needed? How important is the *meditation practice*, relative to other factors (e.g., a warm, supportive environment)? How might compassion training programs be *adapted to fit needs* of specific people, communities, and contexts?

Bringing us to compassion training in medicine, **Dominic Vachon** introduced the science of compassion and its practical application to pre-medical education, medical education, and clinical practice. The mission of The Hillebrand Center for Compassionate Care in Medicine, which Vachon directs, is to restore the spirit of compassion in healthcare – at every level of medical training and practice – to transform clinician well-being and patient care.[45] He discussed the difficulty of introducing new components into existing training curricula but identified two competencies that are used by the Accreditation Council for Graduate Medical Education (ACGME), – interpersonal and communication skills and professionalism – as great points of entry for compassion training in medical residencies.

Vachon argued that compassion training is crucially important for residents, describing how they are often blindsided by the emotional challenges of residency. *Sentimentalized* notions of compassion and caring are insufficient to sustain them. In contrast, a *scientific* understanding of compassion in medicine provides (1) an integral connection between medical competence and an inner attitude of compassionate caring; (2) the theoretical and practical linkage between excellent patient care and clinician well-being; and (3) the knowledge of how organizational and systemic factors as well as individual training affect the clinician.

He recommended three tools for fostering compassion in medicine through training. The first is defining compassion as non-sentimental and scientific. The second tool is leveraging neuroscience to understand the elements of compassion, including noticing suffering, empathic resonance, intention, and compassionate response. The third is highlighting that emotional detachment as a strategy for avoiding over-involvement with patients is bad for both the patient and clinician. Finally, Vachon described the characteristics of balanced compassionate caring: *attitudes* that underlie and support clinician compassion mindset; *practices and skills* that sustain the clinician's compassion mindset; *organizational and systemic factors* that make or break the clinician's compassion mindset; and an underlying philosophy or *spirituality of caring* that helps clinicians thrive over course of career.[46]

4.2 Key Points of Discussion – All

- We cannot put the onus only on individuals to be compassionate (individuals live within inequitable systems).
- Compassion training has taken a bottom-up approach; it has been an entrepreneurial enterprise. Although there are different training programs, they share a similar philosophy and framework.
- Should children be the focus of mindfulness training? If so, programs need to be developmentally appropriate and programs must be offered beyond privileged groups.
- Understanding dose-response will be important in epidemiological studies of compassion training.
- Training must be scaled up, but at the same time, tailored to specific contexts and settings.
- We cannot reduce compassion training to having a 'good bedside manner.'
- There is a strong link between spirituality and compassion. One's spirituality or philosophy of life appears to energize and motivate many people in medical training and practice.

4.3 Panel– Cultivating and training for compassionate organizations
Participants: Evan Harrel, Tim Cunningham
Chair: Jenny Mascaro

Evan Harrel offered insight on cultivating compassion among leaders to transform organizations. The Center for Compassionate Leadership accepts the definitions of compassion shared during the meeting, and maintains that actions motivated by inherent virtuousness are critical within organizations.[47] The Center aims to help leaders tap into their innate strength that's already present. Harrel described the Compassionate Leadership Model, which starts with self-compassion at the center, moves outward to compassion for others (teams, organizations, etc.), and outward further to compassion for the greater good. There is strong evidence that training improves compassionate behaviors. A compassionate leader creates compassion 'downstream,' and compassionate organizational changes have many positive human and economic outcomes. Training leaders also improves organizational outcomes. To facilitate compassionate organizations, leaders must: (1) Align mission, values and culture; (2) ensure the psychological safety of their employees; (3) foster effective communication and feedback; (4) institute a mindset for growth; and (5) reduce unconscious bias. He offered a final caution: we must move beyond compassion for the in-group (i.e., within the organization) and work to foster compassion for the greater good.

Tim Cunningham shared his experience as a clown working in children's hospitals, where he encouraged laughter, wonder, and connection. He shared a resonating line from the Book of Joy: "wisdom, like water, collects in the lowest places."[48] He suggested that this is where you will find compassion too. He asked, "how do we build from the individual to the systems level?" The answer for Cunningham is that for caregivers, *self-care* builds resilience, and more resilient caregivers are more capable of providing compassionate care. We need to change the way we talk about self-care, he argued, by acknowledging and recognizing the compassion that is already present in health systems. He offered an example of an act of self-care called 'The Pause.'[49] In participating hospitals, when a patient dies, any involved team member can call for a moment of pause, of silent reflection, to honor the patient and everyone in the room who worked to care for them. Health workers who practice The Pause report greater connectivity and presence with the next patient they encounter. It also gives them a chance to recognize their team and show gratitude. Compassion within health systems should be team-based and inter-professional. Cunningham also highlighted the importance of narrative medicine, adding that compassion is storytelling. "I hope we don't walk away from the power of storytelling," he said, "because that's what sticks."

Given the constraints of modern health care (i.e., time), what are the short-term practices that we can teach and share with caregivers? What are the effects of these short, real-time practices (e.g., breathing techniques)? And how can we learn them from the people on the front lines who are already providing compassionate care?

4.4 Key Points of Discussion – All

- How can compassion be transmitted through organizations? Research on pro-social behaviors among leaders and across organizations suggests that leaders play a crucial role in initiating such transmission.
- Metrics and measures will be important if we are to make a case for the value of training within organizations, so that those who might initially be resistant are brought on board.
- Hierarchy poses a real challenge to compassion, and it is particularly problematic in healthcare.

<u>Session 5: Case definitions and metrics</u>

5.1 Panel: Case Definitions and Metrics
Panel Participants: David Addiss, Jenny Mascaro, Stephen Trzeciak, Matthew Lee, Charles Barker

Chair: Stephen Post

David Addiss reflected on the challenge of case definitions and metrics – perhaps the most significant barrier to an epidemiology of compassion and love. What, precisely, should epidemiologists count? Self-report measures and scales have been developed for compassion and love at the individual level, but their utility is limited by lack of conceptual rigor, independent validation, and acceptance across disciplines and settings. As Jeff Levin noted during Session 2 of this meeting, the concept of love has many dimensions and typologies. In general, there appears to be greater agreement on a definition of compassion, which includes three basic elements: awareness of suffering, empathic arousal, and action (or intent) to relieve suffering. The definition proposed by Goetz et al. – "the feeling that arises in witnessing another's suffering and that motivates a subsequent desire to help"[8] – is accepted by many, but not all, researchers. During the early 2000s, the Fetzer Institute supported scientific research on compassionate love.[50] In the palliative care setting, Sinclair and colleagues have shown that patients have an intuitive and sophisticated sense of compassion (or its absence) in their physicians, which includes dimensions of virtue, relationality, curiosity, communication, attending to needs, and concern with the patient's health outcomes.[51] Compassion, therefore, can be seen as a composite construct or experience. In the words of Roshi Joan Halifax, compassion is made of non-compassion elements.[52] For epidemiologic study, it may be easier to measure these elements, or proxies, than to measure the essence of compassion itself (the same holds true for love). Former CDC Director, Bill Foege, has argued that, "It's not compassion itself that we need to measure, but rather, the *results* of compassion."[53]

In epidemiology, *case definitions* describe what is counted and measured (and what is excluded), particularly for research, investigation, identifying risk factors, and testing interventions. In addition to case definitions of compassion and love, we also need standardized *metrics* – that is, agreement on what will be measured or monitored in programs to assess progress toward goals.

Case definitions and metrics are likely to vary, depending on several factors, including: 1) whether compassion and love are considered primarily as host factors, agents, or environmental factors; 2) the level of scale: individual, organization, or community; and 3) the setting (e.g., health care, education, or business).

Individual metrics of compassion

Jennifer Mascaro discussed some of the key challenges involved in measuring compassion at the individual level. First, there is a lack of consensus regarding the optimal units of measurement and levels of analysis. Behavioral measures tend to be preferred over self-report measures, but is it possible to intuit the presence of a compassionate state from a specific behavior? Second, we have an implicit (or sometimes explicit) assumption that compassion emerges from discrete non-compassion components or competencies. Which of these components should be measured, and which of them correlate most closely with compassion? Third, compassion is dynamic, context-specific, and state-dependent. The kinetics of compassion are unclear. Fourth, we need to be clear about how compassion differs from multiple related constructs, such as empathy, empathic concern, sympathy, pro-sociality, and care. And finally, compassion is a topic of investigation by different disciplines, using different methods.

Mascaro and colleagues have developed a framework for mapping the ways that we know compassion. The framework is anchored by four key heuristics. First, whether the measurement relies on a first, second, or third-person frame, corresponding to self-report, assessment by a 'recipient' of compassion (such as a patient in a clinical setting), or an observable 'objective' measure (e.g., behavior, biomarker), respectively. Second, whether the measurement assesses an individual *trait* (predisposition), or rather, a momentary *state*. Third, the measure's degree of ecological validity, and fourth, whether it is oriented internally (assessing motivations or emotions) or externally (assessing behavior).

Self-report measures of compassion are the most common, but they have several limitations, including validity and uncertainty about how well self-report correlates with compassionate behavior. There are several measures that purport to assess lack or failure of compassion (so-called 'compassion fatigue'). Self-report measures may align better with an individual's values than with their experience or behavior. Recently, momentary self-report approaches have been developed to explore compassion as a fleeting experience or state.[34]

Patient satisfaction surveys offer an example of second-person measures of compassion. The choice of a particular measure will depend on the goal of the study and the hypotheses being tested. At times, investigators may want to privilege internal states over external behavior. Distal measures of compassion may be desired rather than proximal measures or states. For a robust understanding of compassion, mixed methods will be needed.

Measuring compassion in health care systems

Stephen Trzeciak was trained and continues to practice as a medical intensivist. Currently he also is involved in compassion science. The hypothesis that he and his colleagues at Cooper University Health Care describe in their recent book, *Compassionomics*, is that compassion matters for patients, for patient care, for providers, and for the cost of medical care.[2] Researching this hypothesis requires valid measures for compassion in health care settings. Compassion is a vital aspect of quality. The most important perspective, in their view, is that of the patient: how well do our patients believe we are taking care of them?

Hospitals are required to assess patient experience through patient satisfaction surveys. These surveys contain important questions, but they don't adequately assess the 'caring' part of health care. Trzeciak and colleagues are interested in measuring compassion at scale, so they designed a simple measure that can be attached to existing patient satisfaction surveys. After a systematic review of compassion measures, they identified 12 key questions, five of which remained in the most parsimonious model. The 'five-item compassion measure,' which has been validated in different clinical settings,[54,55] includes the following questions: "How often do you feel your health care provider…

- Cares about your emotional and psychological well-being?
- Is interested in you as a whole person?
- Is considerate of your personal needs?
- Is able to gain your trust?
- Shows you care and compassion?"

Metrics for Compassionate Organizations

Matthew Lee reviewed key features and principles of compassionate organizations and described the relationship between compassion and flourishing within organizations. A culture of warm, caring, 'companionate love' is a necessary, but not necessarily sufficient, condition for a 'compassionate organization.' A classic longitudinal study by Barsade and O'Neill in a long-term health care setting showed how compassionate love – characterized by feelings of affection, compassion, caring, and tenderness for others – was positively associated with employee satisfaction and teamwork, as well as with patient satisfaction and quality of life.[56]

How does a compassionate organization build on companionate love? Compassionate organizations are comprised of more than compassionate individuals – and they minimize the situation of a few 'toxin handlers' shouldering a disproportionate burden of caring, emotional labor, and sometimes suffering burnout. Such organizations skillfully support the development and effectiveness of compassionate workgroups and standard operating routines, as well as a caring, regenerative culture. Within organizations, compassion is both structural and interpersonal, but most measures of compassion focus on the latter. In addition, organizational boundaries may be quite permeable to the larger society; compassionate

organizations can provide an 'oasis' up to a point, but economic dislocation and a systemic lack of compassion in the wider world will always penetrate organizational boundaries. Therefore, deep cultural change in an organization must be supported by the organization's broader environment.

A 'compassionate organization' is a latent construct; we infer that an organization is compassionate when its practices effectively respond to and prevent suffering. Thupten Jinpa, in his book, *A Fearless Heart*, writes that compassion "has something to do with what it means to lead a good life and… open ourselves to the reality of suffering and seek its alleviation."[57] We tend to think of compassion as 'reactive deficit reduction,' i.e., to ease current suffering. But as Jinpa suggests, compassion can also be understood as 'proactive deficit prevention,' whereby we work to reduce the *causes* of suffering. Even further, compassion is the 'proactive promotion of full flourishing,' and reduced suffering is a byproduct of creating a Beloved Community, in which everyone thrives. This is the good life within the good society.

Organizational compassion includes promoting justice and the vital conditions that support the good life for all – not just responding to the visible emotional suffering of co-workers. And, in the words of Adam Kahane, "exercising power with love requires effecting system change without destroying what we are trying to nurture."[58]

Recent work with the Sustainability and Health Initiative for NetPositive Enterprise (SHINE) program at the Harvard School of Public Health has conceptualized the 'regenerative workplace,' which arises within a culture of caring. Human flourishing is expanded within a caring organizational climate where employees feel respected, trust management, believe that they are treated fairly, and believe that management cares and helps employees deal with stressful situations. In addition, evidence shows that organizations *can* enhance their compassion capability by effectively supporting compassionate practices and high-quality relational conditions so that it becomes routine for everyone to notice and respond helpfully to suffering.[59]

Metrics for compassionate cities

Charles Barker briefly presented some of the work of Tish Jennings, who was unable to attend the meeting. Jennings and colleagues have worked in the education sector, which is, itself, a defined community. They developed a mindfulness-based program for teachers, Cultivating Awareness and Resilience in Education (CARE for Teachers), which has had statistically significant positive effects on teachers' adaptive emotion regulation, mindfulness, psychological distress, and sense of time urgency.[60]

Barker also described the Compassionate Cities Index, a set of measures developed by Ann Faul and Joseph D'Ambrosio at the University of Louisville.[61,62] The Compassionate Cities Index defines compassion as "alleviation of pain and suffering and the promotion of human flourishing." Two aspects or 'energies' of compassion were assessed in developing the index. Internal compassion energy (ICE) was assessed by surveying adults in Jefferson County, Kentucky on measures of self-compassion, empathy, and compassionate love. External compassion energy (ECE) was assessed using existing data from the US Census Bureau, the US Centers for Disease Control and Prevention, the Environmental Protection Agency, the Coalition for the Homeless, the metro police department, and the Food Access Research Atlas, among others. The ECE has three domains: basic human needs (with 11 indicators), foundation of wellbeing (16 indicators), and opportunity (6 indicators). ICE and ECE were mapped for all 36 zip codes of Jefferson County, which revealed areas of sufficiency and insufficiency; this information can be used to target specific compassion-related interventions.

An underlying principle for the Compassionate Cities Index is that compassion, like love, is an energy.

5.2 Key points of discussion – All

- Two decades ago, little was known about the human stress response, the impact of stress, or approaches to address it. A significant investment in coordinated research resulted in a great deal of knowledge and changed the way we think of and manage stress at all levels. A similar approach could be adopted (and is needed) for compassion.
- By necessity, the ECE component of the Compassionate Cities Index utilizes existing data that are intended to reflect distal measures of compassion. The degree to which these measures reflect compassion, and not other factors, is unclear. It may be difficult to develop community-level measures that are specific for compassion.
- Some studies suggest that compassionate organizations are more profitable, more effectively managed. Is profit a proper motive for compassion? Are we moving from an Eastern approach to compassion (i.e., from the heart) to a Western one (i.e., related to the bottom line)?

5.3 Breakout groups

Three breakout groups convened to discuss epidemiologically tractable case definitions and candidate metrics for compassion and love at the level of the individual, organization, and community.

5.3.1 Metrics for compassion at the individual level

Chairs: Melissa Bingham and Marcia Ash

Several measures for compassion and love already exist at the individual level. Measures, particularly for behaviors, need to be relevant in specific contexts, cultures, or settings. For example, touching may not be viewed as a manifestation of compassion in some settings or cultures.

Considerable discussion focused on the understanding of compassion and love from the perspective of different religious traditions. The Christian notion of love tends to be broader, or more universal, than the Buddhist understanding of lovingkindness, which is more limited, but perhaps more measurable. Measures of lovingkindness are available, which may be useful and can complement compassion measures.

Safeguards are needed to prevent compassion metrics from being misused, as with intelligence tests, for example.

Measures of compassionate intention (first-person perspective) may yield findings that do not correlate with measures of compassionate action (second or third-person perspective). Metrics for compassion and love are also likely to differ.

The group recommended the development of a compendium of case definitions and metrics of compassion and love in different settings, and the expanded use of some of these in cross-cultural settings.

5.3.2 Metrics for compassion and love at the organizational level

Chairs: Liz Grant, Heather Howard

Members of this group first agreed that, at the organizational level, case definitions and metrics for compassion and love would be similar. The chairs then invited participants to list characteristics of organizations in which love is absent. A long list was offered, including putting profits before people; psychological violations; lack of caring, respect, and cooperation; disconnection; unfair pay; discrimination; self-interested; depersonalized; conflict-ridden; exclusionary; and inconsiderate. At this point, the mood in the room was noticeably subdued.

The chairs then invited participants to consider the characteristics of a loving organization. Features included transparent; adaptive; human-centered; clear; sincere; honest; human; inclusive; luminous; synergistic; innovative; connected; authentic; caring; ethical; and trusting. Such organizations appreciate loyalty; provide psychological safety; and support a mindset of personal growth. Employees feel seen and heard. Participants noted that the mood in the room had brightened considerably.

So, our lived experience of organizational life differs dramatically depending on whether love is present or absent. Loving organizations "promote flourishing internally and externally and provide a warm and caring place." Defining an organization as loving will depend on the degree to which it has a 'caring climate' that promotes flourishing. A loving organization will have a score higher in flourishing than other organizations. Just as the mood in the room shifted palpably when talking of the absence or the presence of compassion, it was suggested that people can sense and feel if an organization is loving or not. This capacity of sensing and feeling, which is core to all our human relationships, is also core to our relationship with agency.

There are internal and external dimensions of flourishing, and there are scales for each domain. Internal dimensions include whether individuals within the organization experience happiness, satisfaction, meaning, and purpose. External dimensions of flourishing relate to how the organization contributes to the greater good. An organization that makes weapons could conceivably be internally loving and compassionate. But if the organization does not contribute to making the world a better place – an important indicator – it is not loving or compassionate in its external dimension. Further, the intention of the organization (i.e., to promote the greater good) may differ from the outcomes that the organization actually produces. Conversely, humanitarian organizations, for example, may be strongly committed to the greater good but not have thriving employees. Loving and compassionate communities should promote flourishing in both external and internal dimensions.

It is not possible to isolate the organization from the larger community. Organizational flourishing is more difficult in areas that are struggling or stressed. Loving organizations are comprised of individuals who work together within a culture – and with policies – that promote loving, compassion, and flourishing.

The emergence of B (Benefit) Corporations distinguishes them from other for-profit companies. Might we imagine a designation for L (Loving) Corporations? Metrics might be used to develop an accreditation process for loving organizations.

Various indices already exist to begin assessing love within organizations, including metrics for flourishing, compassion capability, care, and others. Metrics should assess both the internal and external (outward facing) dimensions. Facing internally, the metrics of love would include motivated staff (alignment of values of individual and organization, belonging, and mission) and psychological safety (feeling cared for as an individual and an employee). Employees would have a sense of belonging and well-being, a commitment to excellence, and the autonomy to act on their commitment. Employees would feel that they are reaching their own potential.

Externally, loving organizations would have a commitment to social justice and to reducing negative consequences of their actions ("do no harm"). A loving organization is *aware* that it has both positive and negative impacts on the world, and it has a commitment to improve both internally and externally.

5.3.3 Metrics for compassion and love at the community level
Chairs: Rachel Hall-Clifford, James Lavery

The group struggled to define 'community,' as this category includes a wide range of entities with considerable differences (e.g., geographic and professional communities; nation-states; communities of

interest or practice). Different case definitions and metrics may be needed for different types of communities.

Several challenges were noted in developing case definitions and metrics for communities.

- Measures developed for 1st- and 2nd-person perspectives are not adequate for assessing compassionate communities.
- Intentions often differ from outcomes. Both process and outcome measures are needed. In some situations, intention may be of primary interest.
- Compassionate communities must pay attention to power dynamics: how is the compassionate impulse linked to resources and decision-making?

It may be that we're only ready for a descriptive epidemiology at the community level. Imagine, for example, two communities that experience flooding. One community is compassionate and loving; the other is non-compassionate, non-loving. How will they respond differently to the flood? Will community members help each other? Do they have a sense of agency to undertake compassionate acts? Is there already a culture of compassion (i.e., norms of helping and caring)?

Metrics for compassionate communities may include indicators from social network analysis, community surveys, focus groups, volunteering, and donations of time and resources. Within communities, individual members or sub-groups may conceptualize compassion differently.

DAY 3 – Friday, January 10th

Session 6: Donors' perspectives

Donors: The Fetzer Institute, Templeton World Charity Foundation, and Izumi Foundation
Chair: Kenya Casey

Bruce Carlson & Mohammed Mohammed described the aims of the Fetzer Institute, which has focused on compassion and love for 30 years and catalyzed the mind-body-health movement in the 1980s and 1990s. Carlson emphasized that funding good people, not just good projects, is important in their work. Mohammed described convening as central to their activities, noting that they typically convene smaller groups than the present meeting. For Fetzer, convening provides an opportunity to clarify ideas by bringing together key thought leaders and practitioners and "diving deep." Currently, they seek to inspire a global movement that will create a shift in world view, away from fear and toward love. Mohammed noted that epidemiology can serve global movements by providing needed data and tools.

Ellen Morgan introduced the core aim of Templeton World Charity Foundation (TWCF) as providing scientific breakthroughs and practical tools relating to the search for meaning, purpose, and truth. One current initiative focuses on character development, that is, attributes that are learned, including compassion. These strengths are an integral part of human flourishing – moving us from surviving to thriving. She described the 'Global Innovations for Character Development' initiative, a 20 million USD commitment (2019-2023). The initiative centers on two guiding questions: (1) Can we replicate gains in life expectancy in the area of human relationships? (2) Can promotion and integration of character strengths improve health, education, or economic outcomes? There are two open calls for proposals and the initiative currently funds 13 projects. These projects include measuring and developing wisdom in low-security contexts, promoting gratitude and well-being in schools, and building more forgiving communities. TWCF recently held the first large interdisciplinary conference on character, social connections, and flourishing in the 21st century. Looking ahead, Morgan emphasized that TWCF seeks to fund work on relational character

strengths, focusing on the existing evidence base, impact and measurement, and opportunities for partnership and scale.

Gretchen Stoddard outlined the mission of the Izumi Foundation, which is to help alleviate suffering through the development and support of programs that improve health and healthcare in neglected regions of Africa and Latin America. Funded and founded by the Japanese Buddhist order Shinnyo-en, the foundation's name, Izumi, means 'water source' or 'well-spring' or 'compassionate heart.' Currently, Izumi awards 15-18 grants per year across many domains, including maternal and neonatal health, nutrition, infectious disease, neglected tropical diseases, and healthcare system infrastructure. The Izumi Foundation strives to cultivate compassion and practice through grant-making. They are focused on work that seeks to alleviate suffering and treats each person with dignity. They have a 'grantee-centric' approach that supports the work of their partner organizations. "Our approach," said Stoddard, is "seeking to support compassionate organizations by cultivating a culture of compassion." At Izumi, compassion, knowledge, and action work together to motivate their work.

Key Points of Discussion – All

- How do we get other funders to think about compassion as part of 'the answer?'
- Finding a common language of compassion is important; the meaning of this term varies from culture to culture and across languages.
- Developing a broadly-accepted 'theory of change' on compassion would also be useful.
- Stories and narratives can be powerful.
- Grantee-centric philanthropy is the 'new wave;' it shifts power dynamics within foundations and is emerging as a 'best practice' approach to grant-making.

Session 7: Spatial epidemiology

Panel – Spatial epidemiology of love and compassion
Participants: Lance Waller, David Addiss, Matthew Lee
Chair: Frank Richards

Lance Waller addressed the spatial epidemiology of love and compassion, using many examples of maps to illustrate his points. "All great adventures begin with a map," he said. Maps tell stories. Maps get us from here to there. Maps summarize what we know – or what we hope to see. Maps help us organize and summarize our observations (e.g., maps of constellations help us connect and make meaning from stars). Maps hold clues, but maps may not reveal these clues immediately. For example, maps of where people live may not be helpful if exposure occurs in the workplace. Where do love and compassion happen – at home or the workplace? Interpretation can be tricky. Maps do not eliminate pretense or bias; they merely organize information. "People often see what they want to see," Waller said.

Descriptive maps of compassion are typically represented as geographic coverage, for example of social support services by county. Mapping love and compassion may be an attempt to measure the unmeasurable, however mapping 'disease' and 'exposure' also involves mapping difficult-to-measure concepts. Epidemiologic mapping can illustrate the spatial aspects of disease risk, disease burden, and the social determinants of health. Waller presented a slide on the 'whirling vortex of analysis.' The question you *want* to answer leads you to the data you *need* to answer the question, but you have to use the data that you can *actually get*, and then pose the question that you *can answer* with those data – which leads you back to the question you *want* to answer. The process is not linear, but aims to improve with each trip through this cycle.

A spatial perspective, knowing where and when something happens, can give insight into what happened and how. Tobler's first law of geography says that everything is related to everything else, but nearby things are more related than those far apart. Several different types of spatial data are available: administrative data (e.g., census, registries); background data (e.g., roads, houses, weather); active data location (i.e., GPS); 'volunteer' data (e.g. from cellphones); and 'found' data (e.g., publicly available data through apps and social media).

What spatial questions can we answer? We can identify clusters and we can compare patterns between different groups (e.g., cases and controls). Waller described four different types or perspectives on clusters: geospatial (within a specific geographic area); statistical (greater than expected); epidemiologic (occurring in a group of people); and policy (is the cluster actionable – can anything be done about it?). Each of these four perspectives on clustering is important, but they are not identical. Mapping compassion and love would allow us to answer questions related to how they cluster in regions and communities, to compare patterns of prevalence and spread (e.g., a map of cases vs. a map of controls), and to estimate associations with other factors.

Scale matters. As we study the geospatial epidemiology of love and compassion, we must decide if we are interested in a local outcome, local exposure, a local effect modifier, or a local confounder. There is a tension between geographic precision (which would lead you to study many small regions) and statistical precision (which requires large sample sizes).

David Addiss offered examples of existing maps using 'found' data (e.g., Tweets), to illustrate 'agreeableness,' 'conscientiousness,' and 'well-being' in the United States. These examples illustrate the opportunity to map proxies for compassion and love, such as income inequality and human rights. He suggested that perhaps there are inferences we can draw when examining the dialectic between compassion and justice, particularly if we harness these data in a more systematic way.

Matthew Lee reflected on how we might truly understand love through mapping. He posited that the deepest, transcendent love may ultimately remain elusive and that there isn't necessarily a linear relationship between experiences of transcendent love and certain outcomes. It is important for us to decide what kind of love we are trying to study. Is it 'garden variety' love? Does mapping proxies for a 'good society' also capture love? He then shared a poem by Rumi: "The way of love is not a subtle argument. The door there is devastation." How do you map that? You could conceivably ask people if this poem resonates with their experience of love and plot the data on a map. But deep conceptual work is required and intentional choices must be made. Maps that reflect a good society also likely capture a loving society. However, these are merely modulations of love – you're not *fully* capturing it. A lot of philosophical and theological conceptualization needs to be done. In closing, Lee expressed optimism for our ability to meaningfully map compassion and love. Our efforts would benefit from an integration of technologies, data, and disciplines. In particular, seeking reflections from thinkers who approach the task from different angles would help us navigate the challenging conceptual work.

Session 8: Epidemiologic methods

Session 8 engaged more deeply with epidemiologic methods for studying compassion and love, including conceptual foundations and the adequacy of these methods for understanding both the effectiveness of interventions and the mechanisms through which compassion and love are enacted and sustained.

Panel – Epidemiologic methods for compassion and love
Participants: Jack Colford, Liz Grant, Stephen Blount, Marty Cetron, Eric Kim
Chair: Katie Gass

Randomized controlled trials

Jack Colford focused on the use of randomized controlled trials (RCTs) to evaluate the effectiveness of interventions to foster compassion and love. Bill Foege's quote, "It's not compassion itself that we need to measure, but rather, the results of compassion," points to the need for RCTs. While observational studies, including case-control, cohort, and ecological studies are useful, RCTs are more powerful for understanding causality, and are of increasing interest to both funders and policy-makers.

RCTs are considered the strongest design for assessing the effectiveness of interventions. They minimize the effect of potential confounding variables. They can be used to address multiple exposures (e.g., culture, emotional regulation, training), and determine if these exposures lead to changes in compassion or love (the outcome of interest). However, RCTs tend to be expensive and therefore, relatively small. Thus, they are more likely to be used in assessing the effectiveness of compassion training in individuals than compassion interventions in entire populations.

In meta-analysis of compassion-based interventions, Kirby reviewed and evaluated 21 RCTs over a 12-year period.[63] A range of self-reported outcomes were associated with these interventions, including greater compassion, self-compassion, and mindfulness, as well as less depression, anxiety, and psychological distress.

In an expanded application of RCTs to interventions on compassion and love, Colford described several key principles, considerations, and design elements. A more robust theory of change is needed for the scientific study of compassion and love through RCTs. The design of the study should follow recommendations for best practice, including using pre-registration of the trial (e.g., on the site www.clinicaltrials.gov); following CONSORT guidelines; separating the developers of the implementation from the evaluation team; ensuring an adequate sample size; measuring specific outcomes; selecting an appropriate sampling frame (e.g., with respect to adults or children, clinical patients or general population, and geographic focus); and making data available to other investigators for independent analysis or replication of study results.

Colford strongly recommended that investigators conduct pilot trials to work out the logistics of the study and to identify potential limitations and barriers to a successful RCT. He recommended using self-report instruments that were already validated, as well as increased use of biomarkers, such as oxytocin and physiologic measures (for example, those that are possible using an Apple watch, such as heart rate variability). He encouraged investigators to report details on randomization to study groups as well as how group allocation was concealed from both investigators and subjects. The reporting of 'negative' or disappointing studies is also essential, so that other scientists can learn from these experiences.

Other considerations for optimal RCT design include measuring attrition, compliance with the intervention, and fidelity with which the intervention is delivered. Quantifying compliance can help determine the 'minimum effective dose' of the intervention. In addition, the scale at which the intervention is delivered (and randomization assigned) can vary from the individual level to larger units or 'clusters' of individuals, the latter being useful for evaluating the impact of programmatic interventions delivered at scale.

Colford highlighted opportunities to take advantage of natural experiments, by introducing randomization into the roll-out of existing programs or using a stepped-wedge design with randomly assigned waitlist controls (in which interventions are delivered to specific cohorts or in waves). He encouraged investigators to consider large, simple trial (LST) designs for studying the effects of interventions that will be applied at scale. LSTs involve larger populations, but simplify data collection by using short questionnaires administered easily and remotely.

Finally, organizations and programs can also conduct small RCTs to help determine the optimal approaches or weigh the effectiveness of competing options for programmatic interventions. These RCTs are generally not intended for publication, but rather for organizational decision-making.

Policymakers are increasingly attuned to the value of randomized evidence, and RCTs will be important in scaling up interventions intended to foster compassion and love.

Reflections

Stephen Blount encouraged us to think *beyond* the discipline of epidemiology by also systematically incorporating contributions from anthropology, sociology, geography, behavioral science, and the neurosciences. Each of these fields has developed robust and useful methods, metrics, and tools. Advancing our understanding of the epidemiology of compassion and love in such an interdisciplinary way will take both patience and persistence. All of us will be beneficiaries of this effort. Blount recommended practical steps and making tangible commitments to advance the work, and strongly urged that we reconvene the group in 3-5 years – if not sooner – to review progress and chart next steps.

Methodological and conceptual considerations

Martin Cetron encouraged us to maintain a sense of humility as we seek to understand compassion and love through refining our scientific methods and optimizing the design of research studies. He returned to the analogy of compassion and love as 'contagion' to explore the appropriateness and optimal methods for studying them scientifically. He reflected on parameters from infectious disease epidemiology that we might draw on in considering the epidemiology of compassion and love:

Herd immunity. If we are inoculated with enough compassion and love, we don't just protect ourselves; we also protect the community around us. There is likely a threshold effect for such herd immunity.

Shadow effect. The quality of leadership within organizations has an effect on individuals within that organization. When a leader models compassionate or loving behavior, the effect of this leadership spreads throughout the organization. These consequences have a basis in neuroscience, in the notion of mirror neurons, and in epigenetics, which may be at play in the inheritability of compassion through training and teaching.

Causality. Infectious diseases lead to both proximal and distal outcomes, which can be traced through a chain of causality, although the chains of causality for compassion and love are likely to be more complicated.

Durability**.** How long does the effect last? The durability of the effects of compassion and love is probably similar to that of vaccine-induced immunity: each individual response will vary. Does 'infection' with compassion and love protect you for life? Can we be 're-infected' when immunity wanes?

Reproductive rate (R_0). How many people do you have to influence in order to propagate the effect of compassion and love, and at what point will that effect disappear? Who are the 'super-spreaders?' What are the super-spreading events? Where does one go to get charged up, where are the most likely places to receive compassion and love 'interventions?' What happens when R_0 drops below 1 (i.e., can compassion and love become unsustainable)?

Strength of association**.** How strongly are certain factors or interventions associated with compassion and love, and what proportion do these factors contribute to the overall quantity of compassion and love in a population (the attributable fraction)? How does the prevalence of a behavior or factor influence the strength of its association with compassion in a population? In what interventions should we productively and efficiently invest to scale up compassion and love?

However analogous, infectious disease epidemiology also has several limitations:

Effect modifiers and confounders**.** Compassion and love have multi-dimensional outcomes, and we are likely unaware of the many effect modifiers and confounders that cloud our understanding. But that's where the action is likely to be; effect modifiers and confounders are not something to be controlled for, but rather, to be embraced and explored.

False dichotomies*.* We need to be cognizant and humble about the potential for false dichotomies. In infectious disease epidemiology, we tend to think in terms of either/or. Compassion and love are unlikely to be dichotomous, but rather to reflect modulations on a spectrum, on which there are many interactive influences. We risk losing perspective by dichotomizing compassion and love in order to control them. It may be more useful to investigate compassion and love with the methods and models used to understand chronic diseases, which take into consideration multiple co-morbidities and complex interactions.

Tools. The toolkits that we have available to contain infections are either countermeasures or quarantine/isolation, which are transactional rather than relational; they are contrary to what is needed for healthy relationships and connections. Simply bearing witness and accompanying persons who are suffering may be among the best that we can do.

Issues of distance and intimacy*.* How do we deal with the dimension of spatial proximity and the variability of compassion and love at different scales and among different groups? Many of us in global health have a great deal of compassion and concern for addressing large-scale suffering or suffering that is geographically distant ('over there'), but we find ourselves in short supply of compassion for our immediate family or friends. What does this reveal to us? Where do we decide to place our energies? Is there really a distinction between global and local? In infectious disease, we have strict dichotomies of healthy and sick, infected and uninfected. With the relational realities of compassion and love, these dichotomies break down; it's not 'you' and 'me,' but, rather, *we*. And epidemiologically, how do we deal with that?

Considerations for moving forward

Eric Kim began his remarks with a question: How might we create a menu of high quality compassion and love interventions within the next few years? He suggested several possible immediate avenues for epidemiologic study of compassion and love.

Separate the dimensions of compassion and love**.** Two decades ago, the field of positive psychology was struggling to operationalize and study 'happiness.' Once researchers divided the concept of happiness into different dimensions, they were able to approach it with much higher resolution, studying its dimensions or elements of life satisfaction, vitality, optimism, and purpose. We could do the same with compassion and love.

Map these dimensions onto existing cohort studies – Searchable sites (e.g., Inter-university Consortium for Political and Social Research [ICPSR] and the Maelstrom catalogue) that provide an inventory of existing studies that may already be measuring these dimensions of interest are readily available. Analyzing these data, or adding questions to cohort studies, which are often done in multiple waves, could allow us to explore antecedents and outcomes of compassion and love and test for effect modification. The resulting insights could help us augment existing compassion interventions and the development of new ones to test in RCTs.

Use existing data sets. In addition to basic research, existing datasets can be used to explore multiple outcomes of a single-exposure, so-called 'outcome-wide' epidemiologic studies.[64] This approach may be particularly well-suited to compassion and love research.

Randomized controlled trials. In addition, we already have interventions that should be studied in RCTs.

Reflections on questions and methods

Liz Grant refocused our attention by noting that we've been talking about metrics, measurements, epidemiologic methods, and principles. "We've got lots of bits and pieces from these presentations, but are we getting to the *heart* of why we're doing this? Why are we trying to measure, to understand something that's so complex, something that's so collective, something that is extraordinary because it's the very basis of our nature. Something that belongs to each one of us and yet we don't own it. Something that, like the rain from heaven, can really influence and shape everything that we do. How do we take something that is precious – love and compassion – and see that the ambition in the end is to have a different paradigm in the world today?"

She posed two fundamental questions. First, epidemiology may well be the science to help us understand compassion and love, but we actually may need to question epidemiology. Is there a different science of epidemiology that would allow us to ask very different questions and develop new methods? Or are we being confined by the methods that are currently available to us? Second, what is the research question? Each of us seem to be asking quite different questions. A different kind of question would be how we change the paradigm of the world we live in, such that we understand that it isn't technology or big data that is going to respond to our global challenges, but rather, compassion and love.

If compassion is the glue that holds the SDGs together, what does that mean? To achieve each of the goals, we need a paradigm shift. We need collective action of people, who make changes in their individual and organizational lives, in order to bring about the SDGs. Simply throwing money at the SDGs won't work. Achieving them involves believing that the person on the other side of the world, who I've never met, matters as much to me as you or my family do. We need a different concept of what matters. How do we love the unloved and the unknown; how do we care?

Our lives and our societies are structured around borders and boundaries, which give us identity. But the space in between the boundaries is often filled with fear. What would it be like if the borders were porous and the spaces between were filled with love and compassion? How can we understand what that would be like, and what difference would that make?

The powerful images and metrics that we've heard in this meeting are not caught up in the science, but rather in the poetry, in stories, in sacred literature. What does this say about the science of compassion? How can we take those images, those stories, and enable them to become the driving force to support our work? We do have a way forward. With these images that communities hold dear, we can make a paradigm shift. Love and compassion *are* the glue that holds the SDGs together. As scientists, we can offer a novel way of doing epidemiology that moves us beyond where we are now.

Session 9: Summary reflections and next steps

David Addiss & Shams Syed

David Addiss reflected on the two fundamental questions that were asked at the beginning of the meeting: 1) to what extent can epidemiology contribute to our understanding of compassion and love; and 2) to what extent can epidemiology contribute to efforts to promote, guide, and realize a 'loving world' where compassion is a key driver for quality health services?

In addition to five potential functions or uses of epidemiology that were described at the beginning of the meeting (describe phenomena; identify risk factors; develop and test interventions; stewardship of resources; and monitor progress toward goals), another important function of epidemiology that is relevant to promoting compassion and love: advocacy.

An urgent need exists to further develop and test metrics for compassion and love at the individual, organization, and community levels. Individual self-report measures are available, but their validity,

particularly in cross-cultural settings, has not been extensively studied. Validated metrics are crucial for monitoring and assessing efforts to scale up compassion interventions in health care and community settings and for understanding the 'transmission' and spread of compassion and love.

Throughout the meeting, participants recognized the need to operationalize definitions, develop metrics, and use standard epidemiologist tools such as RCTs, while, in the words of Thupten Jinpa, "protecting the preciousness" of love and compassion. Reductionism as a method may be needed, but we must avoid reductionism as a metaphysics. New ways of thinking about epidemiology may be needed to understand and address the highly relational nature of compassion and love. Several models were suggested by various presenters for guiding and expanding our work, including the recently-developed fields of positive psychology, stress reduction, and contemplative neuroscience.

Next steps and recommendations are described below in Section V. They include immediate 'products' and reports, future research, and the development of a community of practice.

Shams Syed offered reflections from the perspective of quality health services, which provides a unique entry point for work on compassion and love. Syed articulated his reflections around three inter-related areas: technical foundations, learning, and supporting change.

Technical foundations. We need to dig a little deeper to understand and articulate the conceptual linkage between compassion and love and each of the seven domains of quality: effectiveness, patient safety, people-centeredness, timeliness, equity, efficiency, or integration. These linkages need to be practical and must be understood by those who are organizing and delivering health services.

Learning. We must broaden our thinking from quality of *care* (at the point of care) to a wider emphasis on health services and systems, and even wider – population health. Particularly, we need to locate compassion within the primary health care approach, with an emphasis on multisectorality as well as engagement and empowerment of communities.

Supporting change. Our meeting reaffirms to us the importance of working at all four levels of the quality agenda: (1) point of care, (2) facility, (3) organization, and (4) national health system. What are the key tools and resources that can support change at these four levels? What works? Why does it work?

Syed also reflected on other aspects of the meeting outside the quality paradigm. With regard to compassion and the SDGs, we have an opportunity not only to align compassion with each SDG, but also to begin work on how to influence the next iteration of the SDGs. What can we imagine for 2050?

Syed highlighted the need for a compendium of measures and definitions of compassion and love, which "would be a huge service to us all." We also need to focus on development and testing of our tools and interventions to understand what works and why it works. Finally, he supported the call for advocacy, not just externally, but also internally, and argued for a community of practice, a support group, for those of us working on compassion and love in global health.

IV. PRELIMINARY CONCLUSIONS

1. *Contributions to understanding*. There was broad agreement among meeting participants that epidemiology can make important contributions to our understanding of compassion and love. Epidemiology can play a crucial role in elucidating patterns and dynamics of transmission (or spread) of compassion and love at the population level. It can also provide insight into factors that inhibit or block compassion and love in different settings. However, agreement on the definitions of compassion and love for epidemiologic applications requires further systematic thinking to advance the field.

2. *Contributions to programs*. Significant progress has been made in developing case definitions and metrics for research on compassion at the individual level in recent years. Additional work on metrics is urgently needed, particularly for monitoring and evaluating programs within health systems, organizations, and communities that have committed themselves to compassionate action. Conceptual frameworks are available. For example, the framework presented at this meeting by Jennifer Mascaro, provides a helpful tool for categorizing and understanding the utility of specific measures of compassion.

3. *Interventions*. Descriptive epidemiology, further analysis of existing data, development of new tools and implementation of demonstration projects at different levels are needed to develop and scale up effective interventions to foster compassion and love in a wide range of settings, including global health. The role of compassion interventions to enhance the quality of health services is a particularly ripe area for exploration.

4. *Epidemiologic methods*. Existing epidemiologic approaches can be readily and fruitfully applied to compassion and love. However, the essential relational nature of compassion and love, as well as the important influence of perception, values, and culture on the lived experience of compassion and love, require further emphasis. Indeed, there is a clear need to develop innovative epidemiologic methods. Lessons and insights for a mature epidemiology of compassion and love can be drawn from similar developments in contemplative neuroscience, positive psychology, and mind-body medicine.

5. *Community-Building*. Meeting participants deeply appreciated the opportunity to interact with a broad interdisciplinary group in the spirit of intellectual generosity, heartfelt inquiry, and openness. They also expressed a desire to build on this experience to advance a community of practice and to build additional bridges of collaboration and exploration. Focused interest areas may warrant specific attention, for example the linkages between compassion and quality health services. Activities are already underway to build the community and support new collaborations.

6. *Advocacy*. In addition to its other uses, epidemiology can play a significant role in advocacy, through marshalling population-level data, highlighting causal pathways, and framing the case for action. Participants noted the critical need for advocacy, both internally (within the institutions where many of the participants work) and externally (in the broader society, with decision-makers, funders, and organizational leaders). The role of compassion in achieving the SDGs – as well as what replaces them beyond 2030 – needs careful attention.

V. RECOMMENDATIONS

Participants expressed a desire for further development in three distinct areas:

A. Meeting 'products'

Several publications are proposed, which would document insights from the meeting and provide material for ongoing advocacy.

1) *Meeting report* (current document).
2) *Summary versions of the meeting report* – to be disseminated on the FACE website and other venues, as well as published by the WHO Global Learning Laboratory as a knowledge product.
3) *Videos and photographs* – Video recordings of the meeting will be condensed and edited by the Task Force for Global Health and made available to participants and the general public. This footage will be used to advocate for expanding work on compassion and love in global health.
4) *Compendium of measures and definitions* – An initial compendium of measures and definitions of compassion and love, particularly definitions that can be operationalized for use in research and

programs, will document progress made during the meeting and serve as a resource for further work.

5) *'Compassion and Love in the SDGs*' – Several participants, including Liz Grant and Shams Syed, expressed interest in developing a policy and advocacy paper on the necessity of compassion and love for achieving the SDGs. A small working group will be convened to work on this document.
6) *Public health crisis, a dearth of compassion and love* – Presentations by Richard Davidson and Shams Syed, among others, highlighted the massive public health burden resulting from lack of compassion and love. A review and summary of these data could be useful for advocacy within and beyond the field of global health.
7) *Compassion and quality in universal health coverage* – Shams Syed proposed the development of a series of 1-page briefings that outline the link between compassion and key dimensions of quality health services.
8) *Peer-reviewed publications* – Speakers are encouraged to develop their presentations into manuscripts and submit them for publication. FACE can make audio recordings available to speakers to facilitate this process.

B. Research

In addition to informal discussions on potential research collaborations among individual participants, several priorities were identified for future epidemiologic research on compassion and love. Funding for these projects has not yet been secured.

I. Systematic review of existing data ('desk research')

'Risk factors' for compassion and love. While we have a general understanding of precursors or 'risk factors' for compassion and love, and a few intervention studies have assessed the impact of training or other measures on pro-social behavior or other markers for compassion or love, little is known quantitatively about the relative strength of these associations in different settings. A comprehensive systematic review of existing literature through an epidemiologic lens is needed to provide a foundation for further work. We may also consider the modifying effect of love and compassion on *other* risk factors associated with health outcomes, for example, does greater love in a community or compassion in a health facility mitigate the negative effects of unemployment or substance abuse?

Effect or impact of compassion and love on outcomes of interest, such as well-being, quality health care, pro-social behavior, world peace, and human flourishing. The most extensively investigated outcome measures have been related to health care, as summarized recently by Trzeciak and Mazzarelli in their book, *Compassionomics*. Similar reviews are needed for other fields using rigorous methods, which would provide a foundation for further research. The reviews should include the unintended consequences of compassion or love when it is immature or lacking in wisdom.

II. Strategic application of key existing measures and metrics

Current measures of compassion and love, particularly at the organizational and community levels, require further validation. However, several measures of compassion have been validated, particularly in health care settings, at least in limited populations. More widespread deployment of a select set of existing measures is needed to understand their use in different countries, cultures, and religious traditions, and to provide population-level data. Examples might include 1) more widespread testing of the 5-question patient survey on compassionate care; 2) inclusion of questions on compassion or love in nationally representative surveys or polls (e.g., Gallup); or 3) more extensive assessment of community-level indicators used by some cities that have signed the Charter for Compassion.

Application of existing measures could also advance our understanding of the geospatial dimensions of compassion and love. A related recommendation is to characterize geospatial relationships and to

systematically review data on local burden of the lack of compassion and love, in situations where cruelty and unaddressed human suffering predominate.

III. Intervention studies

Rigorous assessment of a range of interventions to foster compassion and love is needed, including related interventions to improve resilience, caring, empathy, and pro-social behavior, particularly at the organizational and community levels. Interventions are also needed to reduce burnout and other deleterious effects of inadequate compassion and love in health care settings and global health.

IV. New tools and measures

As helpful as deployment of existing measures will be, new tools for assessing compassion and love are urgently needed, particularly to understand transmission dynamics. Real-time sampling using smart phones, for example, can help understand how compassionate or loving states arise and dissipate over relatively short periods of time or limited distances, for example within a hospital. A comprehensive review and prioritization of potential tools could be included in a meeting to develop a coordinated epidemiologic research agenda on compassion and love.

V. Epidemiologic methods

Epidemiologic approaches to studying the dynamics and transmission of compassion and love will draw on methods used by social, behavioral, and infectious disease epidemiologists. Understanding the relational and transcendent nature of compassion and love at the deepest level will require innovative methods, not dissimilar to the challenges faced by neuroscientists in studying consciousness. Further deliberation on epidemiologic methods for compassion and love is needed.

VI. Research agenda

A comprehensive, prioritized agenda for epidemiologic research on compassion and love would help to galvanize support, unify an emerging community of practice, streamline this research, and increase the efficiency and speed with which it can be completed and the results channeled into programs. It will require engagement from a broad spectrum of epidemiologists, data scientists, social scientists, and health system experts and scholars from the humanities and religious and spiritual studies.

C. Community of Practice

The transdisciplinary nature of this meeting revealed that significant research and programs already exist on compassion and love, across a range of fields and perspectives. Several discipline-specific communities of practice already exist, but many participants were inspired by the rich interdisciplinary exchange and spirit of intellectual generosity and warmth that characterized the entire meeting. They expressed a strong desire to deepen our collective conversation and to support a community of practice to advance epidemiologic research, facilitate program support, and enhance collaboration on compassion and love.
Recommendations to build such a community of practice, in addition to 'products' listed in part A of this section, include:

- Share contact information among meeting participants.
- Develop an online forum to sustain momentum, facilitate collaboration, and deepen and challenge our thinking.
- Reconvene the full (or an expanded) group in 2-3 years' time, with more frequent virtual meetings.
- Convene specific working groups to advance progress on many of the products and research recommendations noted above.
- Invite participants to participate in quarterly 'Global Health Compassion Rounds,' a 90-minute webinar for discussion and debate on issues related to compassion and global health, co-sponsored by the WHO Global Learning Laboratory and FACE. See the summary of the latest rounds.
- Encourage cross-pollination of information and cross-linkage of organizational websites.

- Recognize which persons and groups did not have the privilege of participating in the meeting through rapid stakeholder mapping and encourage their engagement.
- Explore the opportunity for ‘twinning’ arrangements between health facilities in different countries to foster compassionate health care and learn together.

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Appendix 1. Meeting Agenda

Agenda

Epidemiology of Compassion and Love
Task Force for Global Health - Decatur, Georgia
January 8-10, 2020

Day 1 – January 8, 2020

	Time	Session	Presenters	Chair
	8:00 AM	Registration, light breakfast		
Orientation	9:00 – 11:00	**1. Welcome, introductions, orientation** a. Welcome (10 min) b. Introductions (20 min) c. Panel – "Three Great Streams" i. Fetzer Institute (10 min) ii. World Health Organization (15 min) iii. "Scaling up" compassion (10 min) d. Discussion (10 min) e. Panel i. Reflections on our task / Epidemiology 101 (20) ii. Response (10 min) iii. Discussion (15 min)	Addiss, Ross All Mohammed Syed Jinpa All Addiss Gass All	Graham
	11:00 – 11:20	Break		
	11:20 – 11:25	**Practice** (5)		Puchalski
Foundations	11:25 – 1:15	**2. Conceptual Foundations** a. Epidemiology of love – evolution of an idea (20) b. Origins of compassion: four views (20 min) c. Compassion – insights from neuroscience (25) d. Reflections (15 min) e. Discussion (20 min)	Levin Shlim Davidson Post All	Mascaro
	1:20 – 2:30	Lunch		
Perspectives: Individuals and Organizations	2:30 – 4:15	**3. Perspectives: Compassion and Love at Different Scales** a. Orientation (15 min) b. Panel – Compassion and love at the **individual** level i. Compassion and love in the life cycle (10) ii. Health care (10) iii. Discussion (15) c. Panel – Compassion and love in **organizations** (and health care facilities) i. Humanitarian organizations (10) ii. Compassionate healthcare organizations (10) iii. Compassionate leadership (10) iv. Compassionate corporations (10) v. Discussion (15)	Addiss G. Grant Puchalski All Howard Bingham Berland Davidson All	Syed

	4:15 – 4:45	Break		
Perspective: Communities	4:45 – 5:40	**3. Perspectives: Compassion and Love at Different Scales** d. Panel – Compassion and love in **communities** (and systems and nations) i. Compassionate communities (15) ii. National health system: Ethiopia (10) iii. Community wellbeing (10) iv. Discussion (20)	Barker and Jennings Burssa Kim All	L. Grant
	5:40 – 5:45	**Wrap Up, Day 1**	Addiss	
	5:45 – 5:50	**Practice (5)**		Mohammed
	6:00 – 8:00	**Reception**		

Day 2 – January 9, 2020

	Time	Session		Presenters	Chair
	8:00 AM	Registration, Breakfast			
	8:55 – 9:00	**Practice** (5)			Davidson
Training	9:00 – 11:00	**4. Becoming compassionate (role of training)** a. Orientation (10 min) b. Panel – Learning and training for compassion at the individual level i. Learning compassion as children (15) ii. Compassion training for adults (30) iii. Health care (10) iv. Discussion (20 min) c. Panel – Training for compassionate organizations i. Training in organizations (leaders) (10) ii. Health systems (10) d. Discussion (15)		Addiss Frazier Jinpa, Chun, Ash Vachon All Harrel Cunningham All	Mascaro
	11:00 – 11:30	Break			
Case definitions and metrics	11:30 – 12:45	**5. Case Definitions and metrics** a. Orientation: what are we counting? (15 min) b. Individual metrics (15) c. Metrics for compassionate health care (15) d. Metrics for compassionate organizations (15) e. Metrics for compassionate communities (15) f. Charge for Breakout groups (5)		Addiss Mascaro Trzeciak Lee Barker, Jennings Addiss	Post
	12:45 – 2:00	Lunch			
		5b. Case Definitions and metrics – breakout groups			
	2:00 – 3:30	**Individual**	**Organization**	**Community**	
		Bingham and Ash (Co-Chairs)	L. Grant and Howard (Co-Chairs)	Hall-Clifford and Lavery (Co-Chairs)	
	3:30 – 4:00	Break			

	4:00 – 5:25	Breakout group (Cont.)	Breakout group (Cont.)	Breakout group (Cont.)	
	5:25 – 5:30	**Practice** (5)			Berland
	5:45 – 6:30 6:30 – 7:45	**Reception** **Dinner**			

Day 3 – January 10, 2020

	Time	Session	Presenters	Chair
	8:00 AM	Registration, light breakfast		
	8:55 – 9:00	**Practice** (5)		Blount
	9:00 – 9:45	**6. Donors' perspectives**	Fetzer Institute, Izumi Foundation, Templeton World Charity Foundation	Casey
Spatial	9:45 – 11:00	**7. Spatial epidemiology of love and compassion** a. Geospatial epidemiology and "clustering" (30) b. Mapping indicators of compassion and love (15) c. Reflection (10) d. Discussion (25)	Waller Addiss Lee All	Richards
	11:00 – 11:30	Break		
Methods	11:30 – 1:00	**8. Epidemiologic methods for love and compassion** a. Methods (30) b. Epidemiologic reflections (30) c. Discussion (30)	Colford L. Grant, Blount, Cetron, Kim All	Gass
	1:15 – 2:15	Lunch		
Research	2:15 – 2:50	**9. Research and next steps**	All Syed	Addiss
	2:50	**Practice** (5)		Jinpa
	3:00	**Conclude**		

Appendix 2. Meeting Participants

Last Name	First Name	Organization/Institution	Discipline
Adiabu	Sedem	Task Force for Global Health	Public Health
Addiss	David	Task Force for Global Health	Public Health, Ethics
Ash	Marcia	Emory Rollins School of Public Health	Public Health
Baer	Caroline	Task Force for Global Health	Public Health
Barker	Charles	Charter for Compassion	Community Development, Social Change
Beck	Carol	Emory University	Contemplative Studies
Berland	Laura	Center for Compassionate Leadership	Compassionate Leadership
Bingham	Melissa	World Health Organization	Public Health
Blount	Stephen	The Carter Center	Public Health
Burssa	Daniel	Ethiopian Ministry of Health	Public Health
Carlson	Bruce	Fetzer Institute	Philanthropy, Social Change
Casey	Kenya	The Carter Center	Public Health
Cetron	Marty	Centers for Disease Control and Prevention	Epidemiology
Chun	Jane	Stanford University	Contemplative Studies, Social Change
Colford	Jack	UC Berkley	Epidemiology
Cunningham	Tim	Emory Healthcare	Health Care, Contemplative Studies
Davidson	Richard	University of Wisconsin, Madison	Neuroscience
Emerson	Paul	Task Force for Global Health	Public Health
Ertzberger	Andrew Perry	Emory Candler School of Theology	Spiritual Care, Ethics
Fasanmi	Abidemi	Morehouse School of Medicine	Health Policy
Fernandez-Carriba	Samuel	Emory University	Contemplative Studies
Frazier	Tyralynn	Emory University	Contemplative Studies
Gass	Katie	Task Force for Global Health	Epidemiology
Ghobrial	Cherini	WellStar Health	Pharmacy, Social Change
Graham	Ashley	Task Force for Global Health	Anthropology
Grant	Elizabeth	University of Edinburgh	Public Health
Grant	George	Emory University	Spiritual Care
Grek	Michelle	Emory Human Engagement Learning Platform	Public Health, Ethics
Hall-Clifford	Rachel	Emory University	Anthropology

Last Name	First Name	Organization/Institution	Discipline
Harrel	Evan	Center for Compassionate Leadership	Compassionate Leadership
Hooper	PJ	Task Force for Global Health	Public Health
Howard	Heather	Alight (Former)	Public Health, Community Development
Jacobsen	Julie	Bridges to Development	Public Health, Community Development
Jinpa	Thupten	Stanford University	Contemplative Studies
Kim	Eric	Harvard Human Flourishing Program	Public Health
Krowlewicki	Alejandro	Mundo Sano	Public Health
Lane	Charlie	Emory School of Medicine	Contemplative Studies, Healthcare
Lavery	James	Emory Rollins School of Public Health	Ethics
Lee	Matthew	Harvard Human Flourishing Program	Sociology
Levin	Jeff	Baylor University	Epidemiology
Lopez	George	Task Force for Global Health	Public Health
Mascaro	Jennifer	Emory University	Public Health, Anthropology
McFarland	Deb	Emory Rollins School of Public Health	Economics, Health Policy
Mohammed	Mohammed	Fetzer Institute	Philanthropy, Social Change
Morgan	Ellen	Templeton World Charity Foundation	Philanthropy, Social Change
O'Donoghue	Lucy	AidMamas	Public Health
Onipede	Iyabo	Compassionate Atlanta	Community Development, Social Change
Palmer	Kim	Emory University	Contemplative Studies
Post	Stephen	Stony Brook University	Ethics, Medical Humanities
Puchalski	Christina	The GW Institute for Spirituality and Health	Spiritual Care
Richards	Frank	The Carter Center	Epidemiology
Rosenberg	Mark	Task Force for Global Health	Public Health
Ross	David	Task Force for Global Health	Public Health
Rubenstein	Leanne	Compassionate Atlanta	Community Development, Social Change
Sheriff	Denise	Task Force for Global Health	Public Health
Shlim	David	Travel Medicine	Health Care
Slining	Meghan	Furman University	Epidemiology

Last Name	First Name	Organization/Institution	Discipline
Stoddard	Gretchen	Izumi Foundation	Philanthropy
Suchdev	Parmi	Centers for Disease Control and Prevention	Public Health
Syed	Shams	World Health Organization	Public Health
Thorpe	Jane	Meridian Herald	Law, Arts
Trzeciak	Stephen	Cooper University Health Care	Health Care
Vachon	Dominic	University of Notre Dame	Contemplative Studies
Waller	Lance	Emory Rollins School of Public Health	Biostatistics
Wilkers	Lee	Emory Human Engagement Learning Platform	Ethics
Williams	Katherine	Evidence Action (Former)	Public Health
Wodnik	Breanna	Emory Human Engagement Learning Platform	Ethics
Worrell	Caitlin M.	Centers for Disease Control and Prevention	Public Health
Yifrach	Ofer	Emory Healthcare	Contemplative Studies, Neuroscience
Yoshida	Yuko	Izumi Foundation	Philanthropy