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Approaches to Universal Health Coverage and Occupational Health and Safety for the Informal Workforce in Developing Countries

WORKSHOP SUMMARY

Rachel M. Taylor, *Rapporteur*

Forum on Public–Private Partnerships for Global Health and Safety

Board on Global Health

Institute of Medicine

The National Academies of
SCIENCES • ENGINEERING • MEDICINE

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Reviewers

This workshop summary has been reviewed in draft form by individuals chosen for their diverse perspectives and technical expertise. The purpose of this independent review is to provide candid and critical comments that will assist the institution in making its published workshop summary as sound as possible and to ensure that the workshop summary meets institutional standards for objectivity, evidence, and responsiveness to the study charge. The review comments and draft manuscript remain confidential to protect the integrity of the process. We wish to thank the following individuals for their review of this workshop summary:

Deena L. Buford, ExxonMobil Corporation
Somsak Chunharas, National Health Foundation
Hanifa M. Denny, Diponegoro University
K. Srinath Reddy, Public Health Foundation of India

Although the reviewers listed above have provided many constructive comments and suggestions, they did not see the final draft of the workshop summary before its release. The review of this workshop summary was overseen by **Georges C. Benjamin,** American Public Health Association. He was responsible for making certain that an independent examination of this workshop summary was carried out in accordance with institutional procedures and that all review comments were carefully considered. Responsibility for the final content of this workshop summary rests entirely with the rapporteur and the institution.

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Acknowledgments

The National Academies of Sciences, Engineering, and Medicine's Forum on Public–Private Partnerships for Global Health and Safety (PPP Forum) has been established to illuminate opportunities that strengthen the role of public–private partnerships (PPPs) in meeting the health and safety needs of individuals and communities around the globe. The forum seeks to foster a collaborative community of multisectoral health and safety leaders to leverage the strengths of varying sectors and multiple disciplines to yield benefits for global health and safety. Achieving global health will not only improve the health and well-being of individuals, but also contribute to the strengthening of families and communities, to international security, to economic productivity, and to other elements of social well-being. Progress toward global health is inherently multisectoral and more effective when sectors work synergistically based on the ever better discovery and implementation of best practices. Critical sectors for achieving global health include diverse elements of government, a wide range of academic disciplines, multinational companies of virtually all types, foundations willing to pursue high-yielding investments for mutual aims, nongovernmental organizations that play key roles in policy development and implementation, and other elements of civil society. Bringing together such a collection of stakeholders for innovation and action is a challenge at which the Institute of Medicine (IOM) of the Academies excels.

By regularly gathering and learning from leaders of diverse, exemplary, and innovative entities as described above, the forum focuses on

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catalyzing more effective global health initiatives that capitalize on the complementary assets and motivations of the sectors involved. The concept of PPPs to advance global health is well established, and various other groups offer convening activities to develop and share relevant knowledge. This forum, however, seeks to uniquely add value to complement many of those efforts. The membership is committed to engaging the expertise of its members and broader groups of stakeholders, its resources, and its networks to identify opportunities to catalyze partnerships; to elaborate norms that protect the interests of those partnered and those served; to capture and share best insights, evidence, and practices for decision making and resource allocation for partnerships; and to foster innovations that may increase efficiencies and equitable access to effective care.

A number of individuals contributed to the development of this workshop and report. These include a number of staff members from the IOM and the Academies: Marton Cavani, Angela Christian, Greta Gorman, Audrey Groce, Faye Hillman, Patrick Kelley, Sarah Kelley, Priyanka Nalamada, Jose Portillo, Patsy Powell, Bettina Ritter, Kimberly Scott, Rachel Taylor, and Julie Wiltshire.

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The overall successful functioning of the PPP Forum and its activities depends on the generosity of its sponsors. Financial support for the PPP Forum is provided by Air Products; Anheuser-Busch InBev; Becton, Dickinson & Company; The Bill & Melinda Gates Foundation; CARE USA; Catholic Health Association of the United States; e-Development International; Estée Lauder Companies; ExxonMobil; Fogarty International Center of the National Institutes of Health; Fondation Mèrieux USA; GE; Global Health Innovative Technology Fund; Johnson & Johnson; Lockheed Martin Corporation; Medtronic; Merck; Novartis Foundation; PATH; PepsiCo; Pfizer Inc.; Procter & Gamble Co.; The Rockefeller Foundation; Takeda Pharmaceuticals; United Nations Foundation; University of Notre Dame; UPS Foundation; U.S. Agency for International Development; U.S. Department of Health and Human Services Office for Global Affairs; U.S. Department of State/Office of the Global AIDS Coordinator; U.S. Food and Drug Administration; Verizon Foundation; and The Vitality Group.

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Acronyms

ICLS	International Conference of Labour Statisticians
ILO	International Labour Organization
IOM	Institute of Medicine
LMIC	low- and middle-income country
NIOSH	U.S. National Institute for Occupational Safety and Health
PAHO	Pan American Health Organization
PPP	public–private partnership
OHS	occupational health and safety
OOP	out of pocket
OSH	occupational safety and health
SDG	Sustainable Development Goal
SEWA	Self Employed Women's Association (India)
UC	universal coverage
UHC	universal health coverage
USAID	U.S. Agency for International Development
WHA	World Health Assembly
WHO	World Health Organization
WIEGO	Women in Informal Employment: Globalizing and Organizing

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1

Introduction[1]

Universal health coverage (UHC) has been recognized by the World Health Organization (WHO) as a key element in reducing social inequility and a critical component of sustainable development and poverty reduction (WHO, 2014b). In most of the world UHC is sought through a combination of public- and private-sector health care systems. In most low- and middle-income countries health systems are evolving to increasingly rely on the private sector (e.g., health providers from different parts of the private sector, corporations, social enterprises, and philanthropy) because the public sector lacks the infrastructure and staff to meet all health care needs. With growing individual assets available for private-sector expenditure, patients often seek better access to technology, staff, and medicines. However, in low-income countries nearly 50 percent of health care financing is out of pocket (Mills, 2014). With the expected increase in the overall fraction of care provided through the private sector, these expenditures can be financially catastrophic for individuals in the informal workforce.

Occupational accidents, diseases, and fatalities create significant burdens globally in terms of human suffering and economic costs, which are

[1] The planning committee's role was limited to planning the workshop. The workshop summary has been prepared by the rapporteur as a factual account of what occurred at the workshop. Statements, recommendations, and opinions expressed are those of individual presenters and participants and are not necessarily endorsed or verified by the National Academies of Sciences, Engineering, and Medicine. They should not be construed as reflecting any group consensus.

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estimated to be roughly 4 percent of the global gross national product annually (Takala, 2002). Occupational health and safety services, intially designed during the advent of industrialization, prevent and treat acute and chronic illness as well as injuries among the working population.The field is evolving in reponse to social, political, economic, and technological changes globally, but the services are usually private entities and continue to be primarily financed by the employers. In the global workforce of approximately 3 billion people, only 10 to 15 percent are estimated to have some type of access to occupational health services. The informal workforce is growing worldwide, and the degree to which its occupational health needs are satisfied depends on the capabilities of the general health care system. As noted by workshop speaker Ivan Ivanov from the WHO, general health care practitioners often lack the skills and knowledge to address work-related health needs, which is one of the primary limitations to meeting these needs in most countries, although there are some encouraging examples of capacity enhancement and building. In countries where the enforcement of occupational health and safety rules relies on labor inspection, such enforcement is usually confined to formal workplaces and employment relations. In contrast, there are examples of public health systems in several developing countries in which the enforcement of occupational health and safety is based in public health law that is not conditioned by the nature of employment relations. As was highlighted by several workshop speakers, there is a need to explore the roles, responsbilities, and opportunities of the labor and health minisitries in meeting the occupational health and safety needs of informal sector workers in developing countries. Additionally, the financing of universal quality care and the development of models to best deliver care, including occupational health and safety services, often require innovative solutions for this population, and promising examples and opportunities are worth illuminating.

On July 29–30, 2014, the National Academies of Sciences, Engineering, and Medicine's Forum on Public–Private Partnerships for Global Health and Safety (PPP Forum) held a workshop on approaches to universal health coverage and occupational health and safety for informal sector workers in developing countries. The PPP Forum was established in late 2013 to illuminate opportunities for strengthening the role of public–private partnerships (PPPs) in meeting the health and safety needs of individuals and communities around the globe. The forum seeks to foster a collaborative community of multisectoral health and safety leaders to leverage the strengths of varying sectors and multiple disciplines to achieve benefits for global health and safety. By regularly gathering and learning from leaders of diverse, exemplary, and innovative entities, the forum focuses on catalyzing more effective global health initiatives that

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will capitalize on the complementary assets and motivations of the sectors involved. The membership is committed to engaging the expertise of its members and broader groups of stakeholders, its resources, and its networks to explore opportunities to catalyze partnerships; to elaborate norms that will protect the interests of those partnered and those served; to capture and share best insights, evidence, and practices for decision making and resource allocation for partnerships; and to foster innovations that may increase efficiencies and equitable access to effective care. This workshop was the first public convening of the forum.

The workshop examined the approaches, successes and challenges, and lessons learned in a purposefully selected group of countries in order to explore the topics of universal health coverage and occupational health and safety for the informal workforce in developing countries. Many of the presenters described the roles of the existing PPPs that are engaged in promoting universal health coverage and meeting the occupational health and safety needs for informal workers. The overall workshop objective was to illuminate best practices and lessons learned for the informal workforce in developing countries in the financing of health care with respect to health care delivery models that are especially suitable to meeting a population's needs for a variety of occupational health issues, including the prevention or mitigation of hazardous risks and the costs of providing medical and rehabilitation services and other benefits to various types of workers within this population. These experiences and lessons learned may be useful for stakeholders in moving the discussions, policies, and mechanisms (including enhanced or new PPPs) forward to increase equitable access to quality health services without financial hardship for the informal workforce, including prevention, curative, and rehabilitation services for injuries and illness due to occupational hazard exposure.

OPERATIONAL DEFINITIONS FOR THIS WORKSHOP

To establish a consistency in the terms used in the workshop presentations and discussions, the planning committee selected operational definitions for universal health coverage, health system, and the informal workforce in the context of the workshop.

Universal Health Coverage

The planning committee chose to use two widely accepted definitions of universal health coverage, one from the WHO and the other from the United Nations General Assembly, as both were highly relevant to the workshop discussion and to the current discussions on UHC at the global and national levels.

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The WHO defines *universal coverage* (UC) or *universal health coverage* (UHC) as

> ensuring that all people can use the promotive, preventive, curative, rehabilitative and palliative health services they need, of sufficient quality to be effective, while also ensuring that the use of these services does not expose the user to financial hardship. This definition of UC embodies three related objectives:
>
> - Equity in access to health services—those who need the services should get them, not only those who can pay for them;
> - That the quality of health services is good enough to improve the health of those receiving services; and
> - Financial-risk protection that ensures the cost of using care does not exposure individuals to risk of financial hardship.
>
> Universal coverage brings the hope of better health and protection from poverty for hundreds of millions of people, especially those in the most vulnerable situations. Universal coverage is firmly based on the WHO constitution of 1948 declaring health a fundamental human right and on the Health for All agenda set by the AlmaAta declaration in 1978. Achieving the health Millennium Development Goals and the next wave of targets looking beyond 2015 will depend largely on how countries succeed in moving towards universal coverage. (WHO, 2015a)

The United Nations General Assembly has defined UHC as a situation in which "all people have access, without discrimination, to nationally determined sets of the needed promotive, preventive, curative and rehabilitative basic health services and essential, safe, affordable, effective and quality medicines, while ensuring that the use of these services does not expose the users to financial hardship, with a special emphasis on the poor, vulnerable and marginalized segments of the population."[2]

Health System

The WHO's Framework for Action defines *health system* as follows:

> A health system consists of all organizations, people, and actions whose primary intent is to promote, restore, or maintain health. This includes efforts to influence determinants of health as well as more direct health-improving activities. A health system is therefore more than the pyramid of publicly owned facilities that deliver personal health services. It

[2] United Nations General Assembly Document A/67/L.36, Global Health and Foreign Policy (accessed May 10, 2015).

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> includes, for example, a mother caring for a sick child at home; private providers; behavior change programs; vector control campaigns; health insurance organizations; occupational health and safety legislation. It includes inter-sectoral action by health staff, for example, encouraging the ministry of education to promote female education, a well-known determinant of better health. (WHO, 2007, p. 2)

For the purposes of this workshop summary, a health system and its six essential building blocks—medical products, vaccines, and technologies; health financing; leadership and governance (stewardship); health services (delivery); human resources; and health information systems—were considered operationally at a national scale. The system building blocks are linked through the attributes of access, coverage, quality, and safety to a set of overall goals and desired outcomes. These goals and outcomes include improved health (both in terms of level and equity), responsiveness, social and financial risk protection, and improved efficiency.

The Informal Workforce

The concepts of "informal sector" and "informal employment" are relatively new in the field of statistics. The 1993 International Conference of Labour Statisticians (ICLS) adopted an international statistical definition of the informal sector that subsequently was included in the revised international System of National Accounts 1993 (SNA, 1993). In order to fit into the framework of the System of National Accounts and to provide for a separate accounting of gross domestic production in the informal sector, the definition was based on characteristics of production units or enterprises rather than of employment relations (Hussmanns, 1996). The *informal sector* refers to unincorporated small or unregistered enterprises (e.g., fewer than five employees) in which employment and production take place.

Ten years later in 2003, following from the 2002 International Labour Conference resolution on Decent Work and the Informal Economy, the 17th ICLS defined the concept of "informal employment."[3] *Informal employment* refers to all employment arrangements that leave individuals without social protection through their work, no matter whether the economic units they operate in or work for are formal enterprises, informal enterprises, or households.

Workers who are employed in the informal sector or in informal employment can be further classified according to the categories of the

[3] For the full definition of informal employment, see ILO (2003). See also the explanatory notes to the country-specific tables in the annex of this publication. A discussion of the conceptual change and its implications for survey design is given in Hussmanns (2004).

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International Classification of Status in Employment (ICSE-93). Based on this classification, the specific groups of workers employed in the informal sector and in informal employment outside the informal sector are as follows:

- Persons employed in the informal sector (including those rare persons who are formally employed in the informal sector):
  - Own-account (self-employed) workers in their own informal enterprises;
  - Employers in informal enterprises;
  - Employees of informal enterprises;
  - Contributing family workers working in informal enterprises; and
  - Members of informal producers' cooperatives.
- Persons in informal employment outside the informal sector, specifically
  - Employees in formal enterprises not covered by social protection, national labor legislation, or entitlement to certain employment benefits such as paid annual or sick leave;
  - Paid domestic workers not covered by social protection, national labor legislation, or entitlement to certain employment benefits such as paid annual or sick leave; and
  - Contributing family workers working in formal enterprises.

In summary, there are three related statistical terms and definitions based on ICLS resolutions/guidelines: The "informal sector" refers to unincorporated enterprises that may also be unregistered or small; "informal employment" refers to employment without social protection through work both inside and outside the informal sector; and the "informal economy" refers to all units, activities, and workers so defined and the output from them. Together, workers identified in these categories form the broad base of the workforce and economy, both nationally and globally.

ORGANIZATION OF THE REPORT

This report provides a summary account of the presentations given at the workshop. Opinions expressed within this summary are not those of the Academies, the PPP Forum, or their agents, but rather of the presenters themselves. Such statements are the views of the speakers and do not reflect conclusions or recommendations of a formally appointed committee. This summary was authored by a designated rapporteur based on the workshop presentations and discussions and does not represent the views of the institution, nor does it constitute a full or exhaustive overview of the field.

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During the workshop many of the sessions touched on more than one of the topics within the statement of task (see Box 1-1). Given the overlap in the issues and topics discussed at the workshop, this summary is organized topically rather than chronologically. The agenda from the workshop and a complete listing of the speakers are included in the appendixes.

Chapter 2 includes presentations that provided an overview and orientation to the issues that the workshop addressed. Robert Emrey from the U.S. Agency for International Development presented frameworks for understanding and approaching UHC. Marty Chen from Harvard University and Women in Informal Employment: Globalizing and Organizing (WIEGO) provided an overview of the informal workforce through definitions, data, and illustrative examples. Peter Berman from the Harvard School of Public Health shared a perspective on the evolution of the UHC movement, some of the challenges in its definitions, and issues to consider for the inclusion of the informal workforce in UHC. Ivan Ivanov from the WHO expanded on the challenges of the inclusion of the informal workforce within the objectives of UHC in regard to occupational health risks and exposure. Victor Dzau from the National Academy of Medicine addressed the role of partnerships as a mechanism to accelerate progress in the inclusion of the informal workforce in UHC and occupational health and safety (OHS) protections and services. Mirai Chatterjee from the Self-Employed Women's Association (India) (SEWA) illuminated the challenges and opportunities for addressing the interrelated issues of UHC, OHS, and the informal workforce from the experience of India.

Chapter 3 includes presentations on mapping solutions to UHC that are inclusive of the informal workforce. Lorna Friedman from Mercer discussed the role of global employers in UHC. Marleece Barber from Lockheed Martin shared her insights on the role of the employer in providing and extending coverage and also addressing occupational health. Orielle Solar from the University of Chile Medical School described efforts to map the informal workforce and health coverage in Latin America.

Chapter 4 includes presentations on institutional efforts to respond to the work-related health needs of the informal workforce. Ivan Ivanov presented an overview and data from the WHO on primary care–based interventions for informal sector workers. Julietta Rodriguez-Guzman of the Pan American Health Organization (PAHO) provided an overview of PAHO's current and historical efforts to respond to the work-related needs of informal sector workers in Latin America. Yuka Ujita from the International Labour Organization (ILO) presented on the ILO's approach and good practices for occupational safety and health (OSH) for informal workers. John Howard from the National Institute for Occupational

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BOX 1-1
Statement of Task

Approaches to Universal Health Coverage and Occupational Health and Safety for the Informal Workforce in Developing Countries: A Workshop

Health systems in most low- and middle-income countries (LMICs) are evolving to increasingly feature a major private-sector component because the public sector lacks the infrastructure and staff to meet all health care needs. The use of private-sector care though often necessitates that patients make significant out-of-pocket expenditures.

Occupational health programs, initially designed during the advent of industrialization, prevented and treated acute and chronic illness, as well as injuries among the working population. While occupational health and safety are still a part of health services for workers, the advancements in public health and health systems strengthening have shifted the occupational health focus to the overall health and well-being of workers, particularly the prevention and control of occupationally determined outcomes. In the global workforce of approximately 3 billion people, however, only 10–15 percent has some type of access to occupational health services.

An ad hoc committee will plan a public workshop of at least 2 full days in length to illuminate best practices and lessons learned in the financing of health care for the informal labor force in LMICs; the best practices with respect to health care delivery models that are especially suitable to meet needs; a variety of occupational health issues, including the best practices for preventing or mitigating hazardous risks as well as the costs of providing medical and rehabilitation services and other benefits to various types of workers in the informal sector. The committee will develop the workshop agenda, select and invite speakers and discussants, and moderate the discussions.

The workshop will feature at least 15 invited speakers expert in financing innovation, health care delivery schemes; and occupational health and safety from the United States and overseas. They will be asked to address not only innovative approaches to providing health insurance for the informal sector in LMICs, but also to share best practices with respect to health care delivery models that include occupational health and safety issues that are especially suitable for the informal workforce. The workshop will include presentations and moderated panel discussions. An individually authored summary of the presentations and discussions at the workshop will be prepared by a designated rapporteur in accordance with institutional guidelines. The workshop may be webcast.

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Safety and Health (NIOSH) provided a brief perspective on OHS for informal sector workers in the United States.

Chapter 5 includes presentations on select country experiences with UHC and OHS for the informal workforce. The presentations are organized alphabetically by the country of focus. In some cases, more than one presentation from a single country is included to provide a deeper and more diverse overall picture of the experience within the country. Vilma Santana from the Federal University of Bahia presented on building the National Occupational Health Services Network in Brazil; Charu Garg from the Institute for Human Development presented on inequities in financing, coverage, and utilization of health care by informal sector workers; Mirai Chatterjee from SEWA presented ideas for action from experiences in India; Hanifa Denny from Diponegoro University presented on the effectiveness of occupational health interventions for the informal sectors and options for delivery in Indonesia; Barry Kistnasamy from the Department of Health in South Africa presented on services to workers in the informal economy in that country; Francie Lund from the University of KwaZulu University presented on OHS and the inclusion of informal workers in South Africa; Laura Alfers from WIEGO presented on linking occupational health and universal health coverage in South Africa and Ghana; Somsak Chunharas from the National Health Foundation in Thailand presented on the UHC system and informal workers in that country; Orrapan Untimanon from the ministry of public health in Thailand presented on OHS delivery for informal workers and financial resources within the country; Poonsap Tulaphan from HomeNet Thailand presented on experiences from a pilot project on OHS promotion for informal workers; and Karen Sichinga from the Churches Health Association of Zambia presented on the country's experiences with PPPs in health.

Chapter 6 focuses on the way forward and includes comments and suggestions from the workshop speakers and participants on how to make progress in developing countries toward the inclusion of the informal workforce in universal coverage and occupational health and safety. The chapter closes with a perspective from Michael Myers of The Rockefeller Foundation on the foundation's history and interest in addressing the topic and plans for moving forward.

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2

Universal Health Coverage and Occupational Health and Safety Issues for the Informal Workforce

This chapter includes presentations from the workshop that provided an overview of the scope and challenges of providing universal health coverage and occupational health safety for the informal workforce in low- and middle-income countries (LMICs).

THE INFORMAL WORKFORCE

Marty Chen, Harvard University and WIEGO Network

Marty Chen from Harvard University and the Women in Informal Employment: Globalizing and Organizing (WIEGO) network provided an overview of the informal workforce by introducing definitions and concepts, presenting recent data, explaining some of the common risks and barriers to access, and sharing some illustrative examples. Much of the information Chen offered was based on her experiences and research through the WIEGO network. The WIEGO network consists of membership-based organizations of informal workers, researchers and statisticians, and practitioners from development agencies who seek to increase the voice, visibility, and validity of the working poor, especially women, in the informal economy and thereby enable them to demand an enabling policy environment.

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Informal Sector, Informal Employment, and the Informal Economy

Chen provided some context on the interrelated concepts of "informal sector," "informal employment," and "informal economy." Initially the informal sector was thought about in terms of enterprises, and in 1993 the International Conference of Labour Statisticians (ICLS) adopted an enterprise-based definition that refers to employment in unincorporated enterprises that might also be unregistered or small. "Informal employment" is a broader concept that includes not only those who work for informal enterprises, but also those who work for formal enterprises or for households. The concept of informal employment, which was developed with the International Labour Organization (ILO) and adopted by the ICLS in 2003, refers to both self-employment and wage employment without social protection through work, both inside and outside the informal sector. Chen said that the fastest-growing segment of informal employment in many countries is informal wage employment for formal enterprises. "Informal economy" is the broadest of the concepts and refers to the diversified set of economic activities, enterprises, and workers that are not regulated by the state and do not have employment-based social protection as well as the output that they produce.

Chen discussed the characteristics of the two basic categories of workers within informal employment: self-employed and wage workers. Self-employed workers in informal enterprises are part of the informal economy, and they include employers who hire others (less than 5 percent in most countries), workers who operate on their own account, unpaid contributing family workers, and members of informal producer cooperatives. The other basic category is wage workers in informal jobs, which includes informal employees of informal enterprises, informal employees of formal enterprises, and domestic workers without employer contributions. Chen commented that within these official categories, some groups are still left out, such as casual day laborers and industrial outworkers. She suggested that the inclusion of more categories of informal employment, including different types of employees, could improve the data and understanding of the informal workforce. Table 2-1 provides data that have been collected on the averages and ranges of the incidence of informal employment as a percentage of nonagricultural employment within regions. (Chen commented that the next frontier in defining the informal economy will be to define informality in agriculture.) While earlier models had assumed that economies in LMICs would move away from informal employment and toward modern wage employment, Chen said that this shift is not happening in most countries.

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TABLE 2-1 Informal Employment as a Percent of Nonagricultural Employment, 2004–2010

Region	Average	Range	
South Asia	82%	62% (Sri Lanka)	84% (India)
Sub-Saharan Africa	66%	33% (South Africa)	82% (Mali)
East and Southeast Asia	65%	42% (Thailand)	73% (Indonesia)
Latin America	51%	40% (Uruguay)	75% (Bolivia)
Middle East and North Africa	45%	31% (Turkey)	57% (West Bank and Gaza)

SOURCES: Marty Chen presentation to workshop, July 29, 2014; data from WIEGO and ILO, 2013.

Informal Workers, Universal Health Coverage, and Occupational Health

Basing her comments on WIEGO's research, Chen described some of the risks that informal workers face relative to formal workers. Informal workers have greater exposure to health risks due to their living and working environments, less protection against loss of income associated with health risks, and less protection against the costs of health risks because of the lack of employer contributions to health insurance and a limited access to universal coverage. Informal workers also experience more barriers to access. They have less access de jure to health insurance and health services, often because the systems and the schemes are not appropriately designed to take into account the specific realities of informal work (as is detailed by Robert Emrey in his presentation on the elements of universal health care design). Furthermore, informal workers have less access de facto to health insurance and health services, including occupational health services to which they are entitled, due to a lack of knowledge of their entitlements, less ability to negotiate the bureaucracy, and leakages, blockages, and lack of coordination in health insurance and health services.

Table 2-2 illustrates these risks and barriers through three examples: home-based workers, street vendors, and waste pickers. Chen's research and the research of WIEGO, among others, provide an opportunity to better understand the populations, characteristics, and needs of members of the informal economy and thus how occupational health and safety (OHS) reforms should take into account different places and types of work and how reforms can be sector specific.

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TABLE 2-2 Informal Workers' Occupational Health Risks and Barriers to Health Care

Occupation	Risks	Barriers
Home-based workers	• Musculoskeletal stress • Exposure to toxic substances • Psychological stress from irregular work and earnings • Place of work is small, cramped with poor ventilation	• Isolation • Lack of knowledge about preventive health measures • Lack of bargaining power • Limited ability to negotiate bureaucracy • Lack of integration in health insurance and services
Street vendors	• Musculoskeletal stress from transporting goods • Physical abuse by police • Psychological stress from fear of evictions, confiscation of goods, irregular work and earnings • Exposure to the elements and pollution • Lack of water and sanitation	• Lack of knowledge about preventive health measures and health entitlements • Lack of bargaining power • Limited ability to negotiate bureaucracy • Lack of integration in health insurance and services
Waste pickers	• Musculoskeletal stress from transporting goods • Exposure to hazardous materials • Psychological stress from harassment by authorities and public, irregular work and earnings • Exposure to elements and pollution • Lack of water and sanitation • Risk of accidents	• Lack of knowledge about preventive health measures and health entitlements • Lack of bargaining power • Limited ability to negotiate bureaucracy and markets • Lack of integration in health insurance and services

SOURCE: Marty Chen presentation to workshop, July 29, 2014.

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UNIVERSAL HEALTH COVERAGE: FRAMEWORKS FOR DISCUSSION

Robert Emrey, U.S. Agency for International Development

To provide an overview of approaches to universal health coverage in LMICs, keynote speaker Robert Emrey from the U.S. Agency for International Development (USAID) introduced several frameworks that currently are being used or explored to achieve universal coverage and discussed their relevance to the inclusion of the informal workforce.

Health Systems Strengthening

Emrey listed the six items that the World Health Organization (WHO) has identified as the key building blocks of the health system—governance and leadership, finance, service delivery, health workforce, information, and medical products, vaccines, and technology—and elaborated on the relevance of the building blocks to the topic of the workshop. Each block is relevant to both the public sector and the private sector, and each extends beyond the patient–provider relationship to include family members and members of the community. Emrey also commented on the labeling of the six components as building blocks. As blocks, he said, the components are sometimes thought of in terms of a linear stack, which is misleading. Rather, he suggested that the components should be thought of as interconnected and overlapping, as shown in Figure 2-1.

To demonstrate the linkages between the interconnected health system components and universal health coverage, Emrey presented a vision for an action framework that included the health system components from Figure 2-1 as inputs, processes, and outputs, and the objectives of universal health coverage (UHC) as outcomes (see Figure 2-2). The UHC objectives include the three primary objectives of financial protection, essential services, and population coverage as well as a fourth objective added by Emrey—responsiveness. Responsiveness to people's expectations has been identified by the WHO as an additional objective to which health systems strengthening initiatives should give attention, in particular, to address issues related to stigma and consumer satisfaction. The areas of impact included in the framework are the primary focus areas of the U.S. government's health programming in LMICs, Emrey said, and they provide context from the U.S. perspective on the ultimate goals of the inputs, outputs, and outcomes for health systems strengthening.

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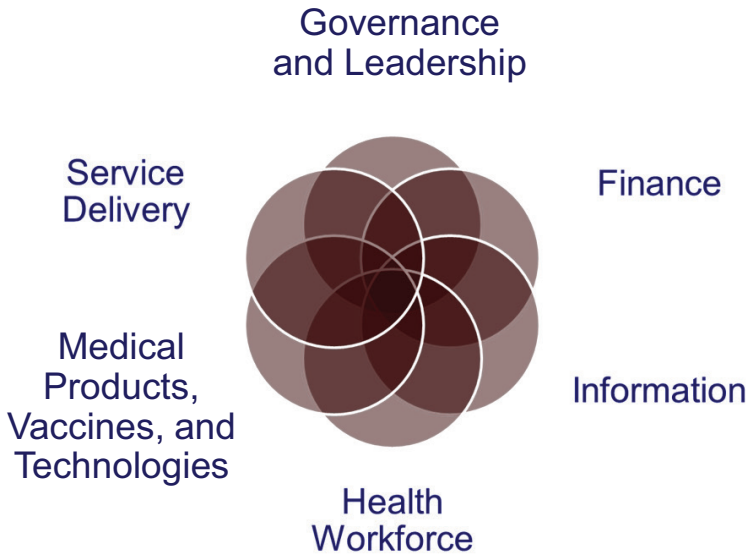

FIGURE 2-1 Health systems in developing countries.
SOURCES: Robert Emrey presentation to workshop, July 29, 2014; USAID Office of the Standard Health Systems Functions; data from WHO, 2007.

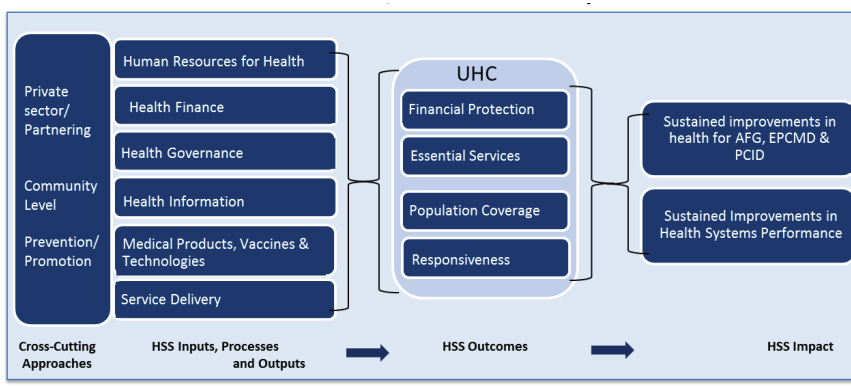

FIGURE 2-2 Vision for action: core functions, outcomes, and impact.
NOTE: AFG = AIDS-free generation; EPCMD = ending preventable child and maternal deaths; HSS = health systems strengthening; PCID = protecting communities against infectious diseases; UHC = universal health coverage.
SOURCES: Robert Emrey presentation to workshop, July 29, 2014; USAID's Vision: Strengthening Health Systems for Lasting Health Impact 2015 (Draft).

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Universal Health Coverage

To frame the discussions on universal health coverage, Emrey displayed a three-dimensional cube that was developed by the WHO and which served as a reference point throughout the workshop discussions (see Figure 2-3). The three sides of the cube represent the three primary objectives of UHC: population coverage, essential package of services, and financial protection.

Currently, the financing situation at the national level for both the formal and informal sector in most countries is divided up into small categories, Emrey said. These arrangements have developed over time according to the politics and the economic situations and the opportunities to move forward in various countries. This process has created systems where coverage is spread into categories that were politically acceptable at the time they were created, and in many cases the financing arrangements have stayed in place for the long term. For example, a health financing arrangement before a national approach to universal coverage is implemented might include within the formal sector a mix of coverage

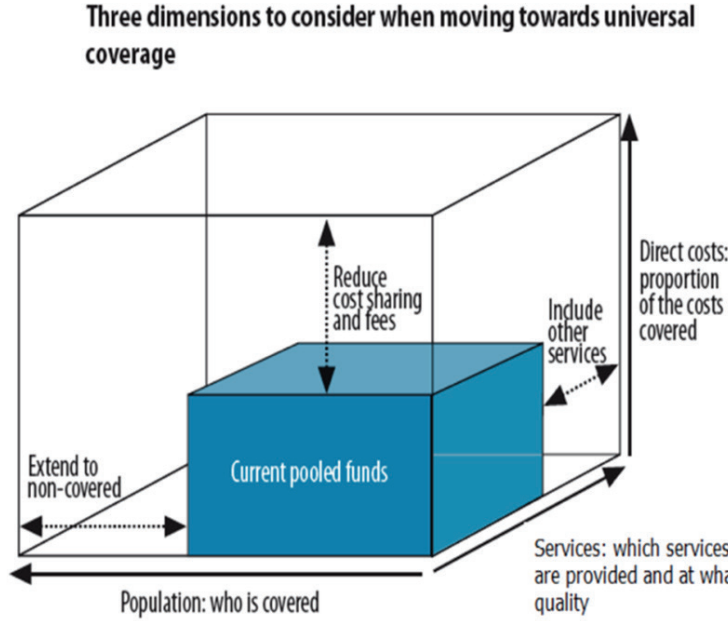

FIGURE 2-3 Dimensions of universal health coverage.
SOURCES: Robert Emrey presentation to workshop, July 29, 2014; WHO, 2015b.

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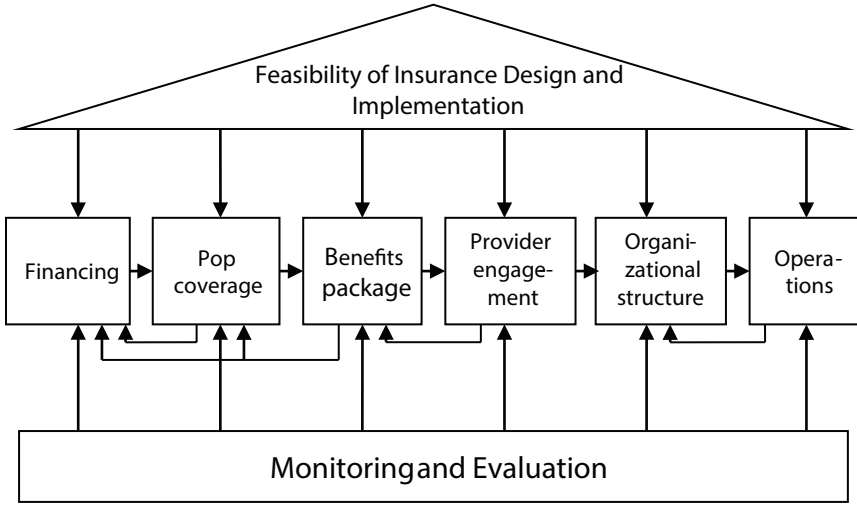

FIGURE 2-4 Design elements of health insurance.
SOURCES: Robert Emrey presentation to workshop, July 29, 2014; Wang et al., 2012.

provided by employers, social security, and through private commercial insurance; and within the informal sector a mix of coverage through user fees, fee exemptions, vouchers, and community-based health insurance or mutual health organizations (Wang et al., 2012). Emrey stressed that reforming, improving, or expanding coverage in a country requires starting from such a base, looking at what is already there, and determining how to move forward.

Emrey commented that the process of developing a UHC scheme in a country will occur in the middle of an ongoing dialogue about the opportunities to redesign and improve the current system. Approaching UHC is not a linear process, but rather very cyclical. With this context, Emrey said that, when approaching the development of a UHC scheme at the national level, it is helpful to consider the design elements that make up the system and how they interact and contribute to the overall system (see Figure 2-4). He presented the individual elements and the potential barriers within each element for the inclusion of the informal workforce.

Feasibility of Insurance Design and Implementation

Emrey said that a national conversation about UHC should start with establishing an understanding of the financing arrangements that are in place, the situational politics, and where there are gaps. It is important

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early on to find the gaps, to have conversations about the availability of existing financing arrangements, and to look at the way in which the insurance arrangements, if there are any, and the fees and other finances work their way through the system as it currently stands in a given country. Small and poorer countries often need different kinds of health services than bigger or richer countries, but the same set of issues applies across national contexts and is an important part of the conversation about the feasibility of redesign within any given country. Ultimately, to determine this feasibility Emrey suggested that policy makers and other stakeholders from the legislature, executive branch, private sector, and civil society be brought together for a conversation about what is possible. Tools have been developed to assess the feasibility, including political mapping tools, health accounts and service access datasets, and community cohesion assessment tools (see Box 2-1 for examples of existing tools).

During his discussion of the feasibility of insurance design and implementation, Emrey noted some potential barriers for the inclusion of the informal workforce: Major stakeholders may not be aligned with the informal workforce or even aware of it; the informal workforce may not accurately be captured in the statistical systems and studies of a given country; and the beliefs and behaviors of the informal workforce may not be clear.

Financing

Emrey listed three objectives of financing and insurance arrangement: (1) to create health insurance systems that will efficiently pool the losses associated with health risks so that in return for a premium (or tax), beneficiaries are protected from those losses if the insured risk occurs; (2) to ensure that risks of loss are spread and shared among many individuals; and (3) to find ways to create large pools of people to protect the stability of the health insurance scheme (Wang et al., 2011). To facilitate the financing process, Emrey suggested the following steps:

1. Study the effectiveness of health insurance models that the country is currently using to finance health care.
2. Examine other options for financing mechanisms for addressing the need for more resources, more efficient collection systems, more efficient purchasing systems, and involving other stakeholders, such as the private sector and informal workforce.
3. Identify the political, social, and implementation considerations.

Emrey cautioned that the success of these steps depends on the availability of good data; otherwise the process can be misled. Two poten-

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BOX 2-1
Tools for Understanding Health System Performance

Emrey said that several tools have been developed for measuring and better understanding how a health system is performing. He identified several of these tools, and they are briefly described here:

- HSAA (Health Systems Assessment Approach): Developed in 2004 by USAID and Health Systems 20/20, the HSAA uses a combination of document review and stakeholder interviews to assess each health system function as defined by the WHO. It has been used in more than 25 countries. The tool emphasizes inclusion of the private sector and capacity building for sustainability.
- iHRIS (Human Resources Information System): Developed by the USAID-funded Capacity Plus project, iHRIS is an open-source health information software program designed for use in low-resource settings that allows health leaders to track, manage, and plan the health workforce. It is currently being used in 19 countries.
- National Health Accounts (NHA) tool: This is an internationally standardized methodology for measuring financial resource flows, both public and private, in the health sector.
- NHAPT (National Health Accounts Performance Tool): NHAPT is a tool used to streamline and simplify the NHA process so as to reduce the need for technical assistance and allow the NHA tool to be institutionalized in low-resource countries.
- SARA (Service Availability and Readiness Assessment): Developed by the WHO and USAID, SARA is a systematic survey and health facility assessment tool designed to assess and monitor service availability and the readiness of the health sector.

SOURCE: Presented by Robert Emrey on July 29, 2014.

tial barriers to the inclusion of the informal workforce in the financing arrangements are not being organized or recognized as a population able to participate in a scheme and having poor—or nonexistent—data on the informal workforce for use in informing financing decisions.

Population Coverage

The basic objectives of population coverage are to reduce inequities and to reach frequently marginalized populations within society. As part of the effort to reach these populations, individuals are often grouped according to their relative ability to contribute as well as their relevant political, social, or cultural characteristics. Emrey stressed the importance

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of having well informed, country-specific expertise when designing a system in order to be able to develop insights about the characteristics of the population and the different political, tribal, and cultural patterns of the country. Concerning population coverage for informal sector workers, Emrey said that the barriers may include the proximity of informal sector workers to service providers; the workers' age, gender, and health status; and the special burden of HIV for informal workers who need both coverage and access to social welfare benefits.

Benefits Package

The benefits package specifies which services are covered and which are not. Developing a benefits package requires understanding the trade-offs between benefits and available financial resources, analyzing who should pay for the services that have externalities, determining which services should be prioritized, and considering how to integrate these services into the health insurance system (Wang et al., 2012). Emrey said that determining what services should be in the benefits package is an important step in the overall design process which may need to be revisited several times.

Emrey said that there are a number of tools for designing benefits packages. However, the tools can be complicated to use and require projecting and modeling both costs and benefits. To ensure the inclusion of informal workers in the insurance system, Emrey suggested that the benefits package design should consider how to increase the utilization of services among the poor and how to achieve the widespread use of benefits for essential life-saving health interventions.

Provider Engagement

Provider engagement focuses on creating a payment system with incentives for providers and patients to improve quality and equity and to align health insurance policy goals with the choices of providers and with payment methods. Policy considerations may include access, quality, cost containment, inclusion of preventive versus curative care, simplicity, and the prevention of fraudulent behavior. Emrey suggested several important factors to study when addressing provider engagement: the supply of health care providers, options for adequate provider networks, and the mapping of providers to service areas with geographic information system tools. He also suggested the use of franchise models to guide the selection, contracting, and payments for quality services. Potential barriers to the inclusion of the informal workforce related to provider engagement are that providers may not be located near the places of work for

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informal sector workers and that trust may be lacking between providers and the informal workforce.

Organizational Structure

Emrey stated that the organizational structure of the insurance system is critically important for aligning all of the system elements into an efficient arrangement that is accountable, transparent, answerable, and controlled. Several core components of the organizational structure include governance and management, provider services, consumer services, actuarial and risk management, clinical standards and quality assurance, and financial management. In terms of barriers for the inclusion of informal workers, Emrey said that governance arrangements and staffing may not be aware of the needs of the informal sector workers and that there are not many options for involving the informal workforce in policy development and management arrangement.

Operations

The operations component is the "back office" part of the system, and the relevant objective when developing an insurance system is to create operational functions that are adaptable, efficient, accountable, and sustainable. Within operations, Emrey identified several key functions: financial processes and management, contract management, marketing, and communications; enrollment and member services; utilization and quality management; premium collections; claims management; and information systems and monitoring. Emrey suggested that there is a promising opportunity to apply e-health and mobile health technologies to accelerate progress and improve the efficiencies of operations. For example, handheld devices, Internet connectivity, and arrangements with information systems are permitting the use of technologies and approaches that would have required huge investments in infrastructure in the past. Emrey said that including informal sector workers may be challenging because of the lack of a secure means for collections of payments and premiums. However, he added that examples like the RSBY smart card in India and M-Pesa in Kenya are demonstrating the potential for innovations to overcome this barrier. In India, the National Health Insurance Scheme, or RSBY, makes payments through a smart card system overseen by a third-party administrator. M-Pesa in Kenya is a cellphone device that serves as a means of transmission of funds and which has been used to arrange health insurance payments and other types of payments within rural and urban areas.

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Monitoring and Evaluation

Most insurance arrangements are limited in their monitoring and evaluation mechanisms, Emrey said; however, he emphasized how important investments in monitoring and evaluation are for determining impacts and cyclical improvements, particularly given how complicated the systems are. Concerning existing tools, he said that tools have been developed for monitoring enrollments, reimbursements, financial performance, and the utilization and burden of the financial arrangement. However, Emrey posited it is probably the case in almost every country that the monitoring and evaluation arrangements are not giving attention to the informal sector workers.

To sum up his remarks, Emrey said that within the efforts to achieve UHC, involving different groups that are currently working with informal sector workers as well as private sector stakeholders is an opportunity to incubate new ideas in order to make better progress and overcome barriers to achieving UHC.

UNIVERSAL HEALTH COVERAGE AND THE INFORMAL WORKFORCE

Peter Berman, Harvard School of Public Health

Peter Berman from Harvard University provided an overview of the evolving definition of UHC since it has entered into the global political discourse, the challenges with how it is defined, and implications for including informal sector workers. Berman said that the initial discussions about UHC were broad and aspirational. The World Health Assembly in 2005 stated that a health system that provides universal health coverage would guarantee everyone access to all necessary services while providing protection against financial risk (WHA58.33, 2005).[1] Berman acknowledged that no health system in the world achieves this goal today; still, he said, it is a notable goal that all should work to achieve. This kind of a health system would produce the highest attainable outcomes that a health system can achieve—top performances in terms of health output and status as well as financial protection. Berman said that since its entry into the global discourse, the definition of universal health coverage has been modified to be less aspirational and less broad. He used the following definition from the United Nations General Assembly resolution as an example:

[1] World Health Organization Document WHA58/2005/REC/1. 58th World Health Assembly Decisions and Resolutions (accessed May 10, 2015).

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> Universal health coverage implies that all people have access, without discrimination, to nationally determined sets of the needed promotive, preventive, curative and rehabilitative basic health services and essential, safe, affordable, effective and quality medicines, while ensuring that the use of these services does not expose the users to financial hardship, with a special emphasis on the poor, vulnerable and marginalized segments of the population.[2]

To illuminate the challenges related to the definition of UHC as it has evolved within the global discourse, Berman pointed to some areas where there is debate about how it is interpreted. For example, it is not clear if access refers to the use or receipt of services; how basic versus necessary services are determined; or if an entitlement to benefits is the same as coverage. UHC has been defined in a complete sense, but how does one characterize or compare different positions on the road to UHC in terms of the coverage of some services but not others, the coverage of some population groups but not others, or the different degrees of financial protection?

In grappling with some of these issues that emerge within the definition, Berman recommended several areas to consider within each country context when addressing the inclusion of informal workers:

- What kind of "coverage" (e.g., services, financial protection) is currently available, and to whom (e.g., informal sector)?
  - For instance, if government guarantees comprehensive free services, what is actually provided?
  - Employers may provide financial coverage, but, again, what is actually provided?
- What should be the strategy for reducing missing coverage or expanding coverage to priority populations?
  - Should government financing and delivery be strengthened?
  - Should insurance coverage be expanded? Should it be expanded as a substitute or a complement?

Designing the right strategies for a particular country requires a sound diagnosis of the situation and the causes of gaps, a willingness to honestly assess the potential for remedies to address gaps, and developing capacity and learning from the experiences of others.

Berman listed a number of risks in the movement toward UHC:

[2] United Nations General Assembly Document A/67/L.36, Global Health and Foreign Policy (accessed May 10, 2015).

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- Unfunded entitlements
- Duplicative schemes competing for scarce funds (financing) or scarce delivery inputs (e.g., human resources)
- Multiple tiers of coverage entitlement (e.g., civil servants, formal sector workers, and the informal sector) fragment risk pools and are difficult to integrate.

UNIVERSAL HEALTH COVERAGE, INFORMALITY, AND WORKERS' HEALTH

Ivan Ivanov, World Health Organization

Ivan Ivanov from the WHO expanded on some challenges in the inclusion of the informal workforce within the objectives of UHC and on specific OHS needs for the population.

While the primary objectives of UHC are to reduce the gap between the need for and the use of services, to ensure that the quality of health services is such that they improve the health of those receiving the services, and to provide financial risk protection, Ivanov emphasized that UHC is also about prevention and about the poor and vulnerable populations. UHC relates not only to primary care but also to secondary and tertiary care. It is not only a package of essential health services, but it is about needed services based on demographic and health status conditions as well as the expectations of the covered populations. It is not only about curative care, but also includes prevention, promotion, rehabilitation, and palliative care. It is not only about essential medicines, but it is also about health technologies. It is not about specific population groups, it is for all, including formal and informal workers and the poor and vulnerable.

Ivanov provided some comments specifically about UHC governance and the informal workforce. While the governance of UHC for informal workers should be held to the same standards and accountability as the formal sector, Ivanov said, the formal sector is typically better organized and able to lobby more effectively for arrangements that explicitly apply to it. This can result in separate governance systems, including separate information systems and management arrangements, for the formal and informal sectors. There are documented cases of formal sector organizations being reluctant to extend benefits to the informal sector and to extend the pools of health financing to members from the informal sector.

Ivanov suggested that a primary problem facing the informal sector is that countries lack the fiscal capacity and ability to collect taxes from the informal sector, which limits the capacity and resources that countries have to meet the needs of the informal sector. Other problems and challenges related to the informal sector reflect past policy choices

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and implementation failures, such as the attachment to contributory based entitlements, fragmented pooling systems that reinforce underlying social differences and constrain redistribution, weak purchasing from general budget revenues according to bureaucratic line item practices, and unclear and poorly communicated entitlements. Because of these historical arrangements, Ivanov suggested that inclusion of the informal workforce will require distinguishing between the problems that have been inherited and those problems that arise from the financial mechanisms and schemes that can be changed. Ivanov said that UHC will likely be one of the targets for the Sustainable Development Goals, thus the topic is attracting significant political attention. However, in many countries redressing the past inequalities within the health system is a challenge.

In including informal sector workers as a recognized population with unique needs and services, it will be important to understand the burden of occupational health risks. Ivanov suggested that occupational risks are

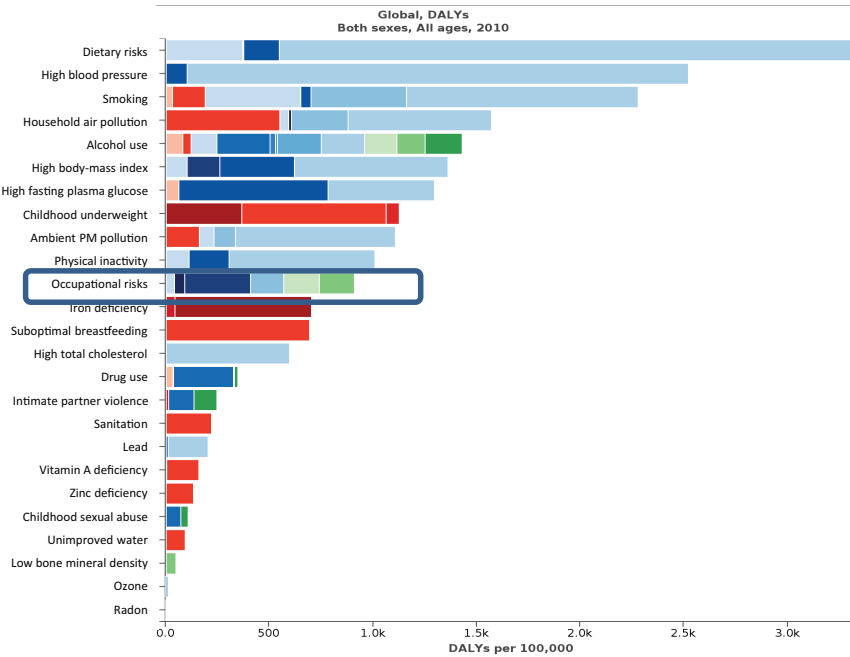

FIGURE 2-5 Burden of occupational risks.
NOTE: DALY = disability-adjusted life year; PM = particulate matter.
SOURCES: Ivan Ivanov presentation to workshop, July 29, 2014; data from IHME Global Burden of Disease 2010.

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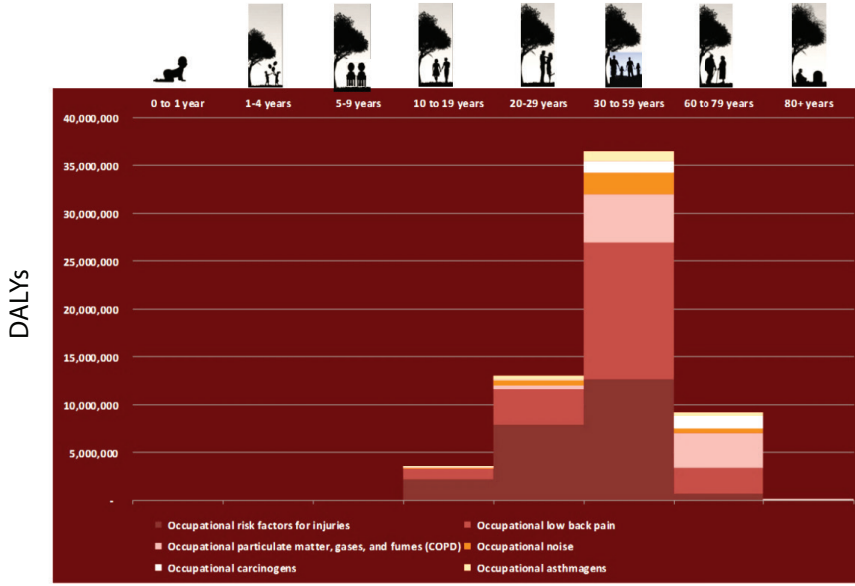

FIGURE 2-6 Burden of occupational risks by age, globally. Roughly 2.3 million deaths and 60 million DALYs are lost annually to occupational injuries and conditions.
NOTE: DALY = disability-adjusted life year.
SOURCES: Ivan Ivanov presentation to workshop, July 29, 2014; data from ILO, WHO Global Health Risks 2010, IHME Global Burden of Disease Estimates 2010.

sufficient to justify special action on the health of workers in the context of UHC. Occupational risks are among the 10 top risks that determine the burden of disease and disability worldwide (see Figure 2-5) and lead to the deaths of about 2.3 million people every year and cost more than 60 million disability-adjusted life years annually. Furthermore, much of this burden falls during the most productive part of people's lives, in the age interval between 30 and 39 years of age (see Figure 2-6), leading to an enormous impact on productivity. Occupational risk costs to society amount to an annual financial loss of approximately 4 percent of gross domestic product.

In discussing the burden of occupational risks and how to better understand occupational health needs for specific populations, such as informal sector workers, Ivanov shared a figure that listed the factors that determine the health of workers, such as their working environment, health behavior, social factors, and access to health services (see Box 2-2).

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BOX 2-2
What Determines the Health of Workers?

Working Environment
- Mechanical
- Physical
- Chemical
- Biological
- Ergonomic
- Psycho-social risks

Health Behavior
- Individual risk-taking behavior
- Physical exercise, sedentary work
- Diet and nutrition
- Unhealthy habits (smoking, alcohol)

Social Factors
- Occupational status, employment conditions
- Precarious work
- Income
- Inequities in gender, race, age, residence, etc.

Access to Health Services
- Primary care
- Occupational health services
- Health and accident insurance
- Financial health protection
- Health technology
- Medicines

SOURCES: Ivan Ivanov presentation to workshop, July 29, 2014; data from WHO, 2014a.

PARTNERSHIPS AS A MECHANISM FOR PROGRESS

Victor Dzau, National Academy of Medicine

One of the focuses of the workshop was exploring opportunities for public–private partnerships (PPPs) to advance the inclusion of informal sector workers in universal health coverage and occupational health and safety in developing countries. To illuminate the potential of PPPs for accelerating progress, Victor Dzau, president of the National Academy of Medicine, shared insights based on his experiences with partnership development. Dzau said that solving a complex global problem requires

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multisectoral partnerships. Each sector offers different skill sets, expertise, resources, and perspectives for solving complex problems, such as those faced in health and health care.

As with many complex global problems, Dzau said, when it comes to addressing the challenge of universal health coverage and OHS for the informal workforce in developing countries, there are two ingredients necessary for success: innovation and implementation. In under-resourced countries and communities, innovation provides opportunities to change the way that things have traditionally been done to solve complex issues. There is evidence of innovations and solutions on the ground in LMICs, but the innovators there face many problems in implementing, sustaining, and scaling their work. The result is that even excellent innovations often remain quite local and small; scalability and replication are not easy. Dzau stated that once one comes up with an original idea, it is necessary to figure out business modeling, financing, and regulatory barriers, among many other issues. Dzau suggested that PPPs are a mechanism to bring together expertise from the private sector, public sector, academia, and

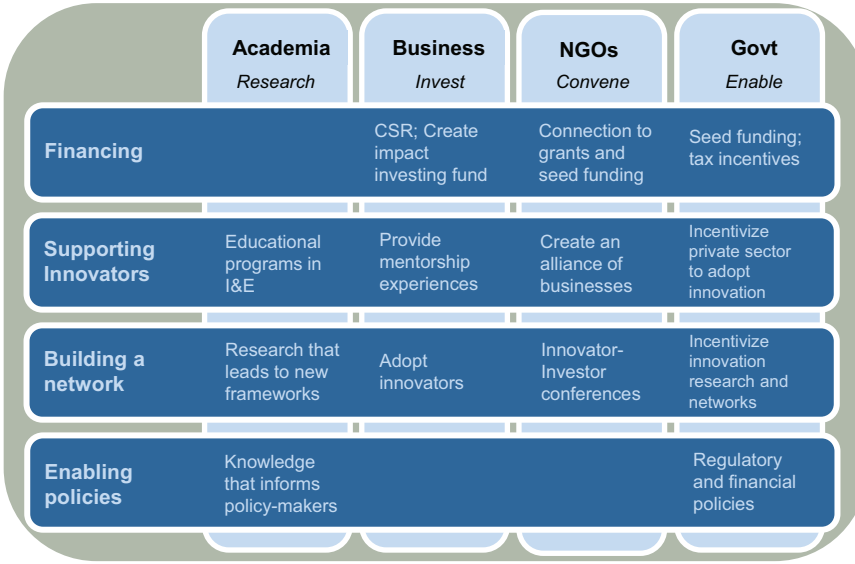

FIGURE 2-7 Potential roles of stakeholders in multisectoral partnerships.
NOTE: CSR = corporate social responsibility; I&E = innovation and entrepreneurship; NGO = nongovernmental organization.
SOURCE: Victor Dzau presentation to workshop, July 29, 2014.

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nongovernmental organizations, to help innovators scale and replicate, so that their ideas can move beyond pilots and become large-scale solutions.

Dzau also said that PPPs can support innovations through financing, specific knowledge and expertise about management systems and platforms to help increase reach, incentivizing the sharing of resources, and enabling a policy network or framework to integrate innovation into public health systems. To provide context on how multiple partners and sectors can contribute to and accelerate progress toward universal health coverage and OHS for informal workers in developing countries, Dzau shared a framework that he had developed to illuminate what different sectors bring to the table in PPPs (see Figure 2-7).

UNIVERSAL HEALTH COVERAGE AND OCCUPATIONAL HEALTH AND SAFETY FOR INFORMAL WORKERS: A VIEW FROM INDIA

Mirai Chatterjee, SEWA Social Security

To provide an example of the problem that is being addressed by the workshop, including its challenges and the opportunities for addressing it, Mirai Chatterjee, director of the Self Employed Women's Association (SEWA) in India, gave a presentation on universal health care coverage and occupational safety and health for the informal workforce in India. SEWA is a national union of nearly 2 million informal workers.

Drawing on inspiration from Mahatma Gandhi and his call to start with the poorest and the weakest and, from them and from that experience, to allow ideas for action to emerge, Chatterjee shared the stories of two SEWA members, Rajiben Chavda and Fatimaben Sheek. Rajiben is a small farmer who owns a small plot of land with her husband. When the rain fails or their yields are low, she will also work as a laborer, breaking stones along with her husband to make roads in the town nearby. Rajiben is also a community health worker at the LokSwastha Health Cooperative, along with 400 other women. She provides basic health education, simple dos and don'ts, linkages with the public health system, and referrals for emergency and immediate care. Rajiben also promotes and provides information about two health programs: the national health insurance scheme, which largely serves below-poverty-line families, and the health insurance cooperative VimoSEWA, which serves both those below the poverty line and those above the poverty line. In particular, VimoSEWA serves large numbers of workers who do not qualify as being below the poverty line but who are still poor and vulnerable.

Fatimaben, the second SEWA member Chatterjee spoke about, is a kite worker. She is from the city of Amirabad and makes about 1,000 kites

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per day from her home. From this work, she earns about 120 rupees per day, approximately US$2, which keeps her family fed and her children in school. Fatimaben suffers from heavy bleeding, and the doctor advised a hysterectomy, but because she does not qualify as being below the poverty line, she was not part of the national health insurance plan, and she has been unable to afford the operation. Recently, her daughter had an emergency appendectomy which cost about 15,000 rupees, approximately US$250, which the family had to cover out of pocket (OOP). A few years ago Fatimaben joined SEWA. She now uses SEWA's childcare center and is able to work more and provide better for her family.

Chatterjee emphasized that Rajiben's and Fatimaben's lives mirror those of thousands of informal workers, not only in India, but all over the globe. In India more than 94 percent of the workforce—or more than 430 million workers—is informal. These workers are poor, they are hardworking, and they work long hours. Theirs is a lifelong quest for basic security, including work security and social security.

Chatterjee said that many of the SEWA members see work security and social security as two sides of the same coin. In SEWA, social security refers to a minimum of health care, childcare, insurance, pension, and shelter, including basic amenities such as a tap and a toilet in every home. As in many countries, health care tops the list, as the lack of basic health care leads millions of families into poverty. It is estimated that about 60 million Indians fall into poverty every year due to sickness and health expenditures (Shepherd-Smith, 2012). A recent McKinsey Global Institute report on poverty in India calculated that 680 million Indians, or about 56 percent of the population, are without basic services, including health care, water, and sanitation. In India, OOP expenses account for about 67 percent of all health care costs (McKinsey Global Institute, 2014). Often, families sell their land or other belongings to save and care for a loved one. SEWA has its own bank, and Chatterjee said that sickness is the number one reason for SEWA members to take out loans from that bank. Thus, she suggested, a lack of health coverage is trapping individuals into a debt–poverty cycle.

Universal Health Coverage in India

According to Chatterjee, the provision of UHC in India is a major anti-poverty measure that is firmly on the national agenda. However, actually reaching all Indians is a huge challenge, given the large and diverse population.

In 2010 the Planning Commission of India set up a small team to develop an architecture for universal health care, and that commission developed a definition for India of UHC: "ensuring equitable access for all

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Indian citizens, resident in any part of the country, regardless of income level, social status, gender, caste or religion, to affordable, accountable, appropriate health services of assured quality (promotive, preventive, curative, and rehabilitative) as well as public health services addressing the wider determinants of health delivered to individuals and populations, with the government being the guarantor and enabler, although not necessarily the only provider, of health and related services" (Planning Commission of India, 2011, p. 3).

Chatterjee stressed that equity is at the core of this definition, which is based on the recognition that lack of access to health care is both a continuing cause and a symptom of poverty and exclusion. The definition also recognizes that the government can play a crucial stewardship role but that it cannot be the only provider (currently about 80 percent of Indians seek private care for their health needs). What is envisioned by the planning commission are partnerships between government, private health care providers, the insurance industry, civil society, including workers' organizations like SEWA, and citizens themselves.

The commission based its recommendations on how to establish UHC in India on 10 principles:

1. Universality
2. Equity
3. Non-exclusion and non-discrimination
4. Comprehensive care that is rational and of good quality
5. Financial protection
6. Protection of patients' rights which guarantee appropriateness of care, patient choice, portability, and continuity of care
7. Consolidated and strengthened public health provisioning
8. Accountability and transparency
9. Community participation
10. Putting health in people's hands

After discussions with various groups, including community-based organizations; state government officials across the country; doctors, nurses, and their associations; and the pharmaceutical industry and insurance companies, the commission recommended a national, essential health package that would cover primary, secondary, and tertiary care. This essential health package is yet to be finalized, and consultations are under way. There will be room for flexibility and inter- and intra-state variations in health care needs. But a basic package will be guaranteed to all, including outpatient and inpatient care, provided free of cost from government or contracted-in-private providers. Free essential drugs will be part of the basic health package.

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It was decided that the package will cover high-cost, relatively low-frequency health events but will not be used as a financial protection mechanism for more common illnesses. This decision was based on previous examples where such inclusion has driven up costs and proved to be unsustainable in the long run. Also, with a large population of informal workers who have no easily identifiable employer—or no employer at all—the costs of collecting premium or contributions would be high, and the mechanisms would be difficult to set up. Currently, some state governments and the national government are running health insurance programs, with mixed results. These programs have been found to use up significant amount of resources at the expense of primary health care. Furthermore, these health insurance programs are not linked to preventive care, nor are they integrated with the health system. For all these reasons, the emphasis of the UHC provision is on primary health care with a preventive focus and on insurance as a support, but not lead intervention. SEWA's own grassroot-level experience of providing health insurance to women suggests that this model will be successful.

Chatterjee provided an overview of what the commission has proposed, which has been broadly accepted and what the government and others in India should undertake over the next 10 years. Rather than discussing all of the details, she focused on some essential pillars of the UHC architecture, some of which are already in place and others of which will be worked out over the next few years.

Increased Investment

Chatterjee said one of the major recommendations for UHC in India is to increase the central and state governments' investment in public health from about 1.2 percent of gross domestic product (GDP) to 2.5 percent by 2017 and to 3 percent of GDP by 2022. Chatterjee said that such a change would reduce OOP spending by about half (Planning Commission of India, 2011), affording financial protection for many citizens. The funding would come from general taxation.

Essential Medicines

Another key recommendation from the planning commission of India is providing all medicines included on the WHO list of essential medicines free of charge. This policy has already been implemented by several state governments and has been announced in the national budget by the new government, in response to the fact that almost 74 percent of OOP expenses are accounted for by drugs (Planning Commission of India, 2011). This recommendation from the planning commission will involve

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many changes in the current drug policy and will require new systems of procuring drugs and even promoting the growth of India's large and competitive indigenous drug industry.

Primary Care

Chatterjee said that primary health care will be the cornerstone of UHC, and in the proposed architecture it will account for 70 percent of all expenditures. This figure will include investments in human resources at the local level—front-line workers, paramedics, nurses, and a new category of doctors trained in public health. It is this team that will provide the first-line care, screening patients and referring them as appropriate to secondary health care.

Human Resources for Health

Investing in human resources for UHC is the fourth recommendation from the planning commission. This investing should focus mostly on community-level workers but also on doctors in states where there are the greatest shortages. The goal will be to achieve at least 23 health workers per 10,000 people, as is recommended by the WHO. To achieve this, Chatterjee stressed, significant changes must be undertaken in medical and nursing curricula, in increased investments in other health workers through state and district-level training and research institutes, and in ensuring quality education. One mechanism to meet the human resource challenge is to create a new public health cadre, with people professionally trained in public health and the administering of UHC. This has already been found to be effective in the southern state of Tamil Nadu, a leader in public health and a state with among the best health indicators in the country. Another mechanism is to engage with and harness human resources, both doctors and others, from India's indigenous and traditional systems of medicine such as Ayurveda. As there are many of these doctors and healers in India, this represents a great opportunity.

Community Engagement

The fifth recommendation from the planning commission is to engage communities and citizens in their own health and well-being. Given the diversity of the population in India, Chatterjee said, communities need to be equipped to assess their own needs and then to act to improve their own health, with the government and the private sector supporting and enabling the process. To this end, local health committees in both rural and urban areas—with representatives that include local

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leaders, members of civil society and women's groups, and public health functionaries—are being entrusted with budgets to undertake health-related action, including providing extra food to malnourished children, ensuring that clean water reaches all, and arranging for garbage disposal. UHC reform in Thailand has provided an example of how to develop such mechanisms, with the country's system of health assemblies from the local, regional, and national levels used to determine health priorities and, ultimately, to act for health.

Regulations and Standards

India has one of the largest unregulated private health care industries in the world and there is variation in quality standards among private and public health providers and institutions. Chatterjee said that patients have very little bargaining power. For these reasons, UHC in India will be regulated with standard treatment protocols, rational therapy, and cost regulation. The private sector will be very much involved in UHC. However, it will have to adhere to standards of treatment, quality, and costs.

Chatterjee acknowledged that regulatory systems and laws will not be easy to develop and monitor. She stressed that significant dialogue will be required with doctors, hospital associations, and others, so that there is consensus and not resistance to regulation, adhering to standard treatment protocols, and accepting ceilings on charges to patients. The move to regulation in the health sector is slow, but she predicted that policy makers and others will eventually recognize that this is essential.

Urban Health

Another recommendation from the planning commission is that there should be a focus on the health of urban India. Nearly one-third of all Indians live in urban areas, where there is a lack of appropriate health infrastructure, especially of primary health care centers. The result, Chatterjee said, is that hospitals are full of patients who could have been screened and treated near their homes, instead of waiting in long queues in large tertiary care facilities.

Social Determinants of Health

Chatterjee emphasized that UHC cannot be achieved without positive steps to address the social determinants of health, including improving water and sanitation, instituting measures to end hunger and to improve food security, improving education, developing measures to promote women's equality, increasing employment opportunities, and providing

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regular and decent work and income for all Indians. While addressing all of these determinants may seem like a daunting task, Chatterjee said that she has learned from her experience at SEWA that there can be no shortcuts. It is this integrated approach to people's well-being that will ultimately lead to a reduction in poverty and improved health. UHC is part of the fight against poverty, and it will be realized only if adequate attention is paid to social determinants.

Occupational Health and Safety for Informal Sector Workers in India

Chatterjee said that SEWA's 40-plus years of organizing women for work security and basic social security, including health care, supports the approach chosen by India for UHC. She suggested, however, that there are some gaps that will require special attention. One of the major gaps is OHS, especially for workers engaged in the informal economy. Informal workers account for more than 94 percent of the Indian workforce and for more than 50 percent of the nation's GDP, yet their occupational health has remained neglected, particularly for women in the informal economy.

Chatterjee suggested several reasons for the neglect of OHS for informal workers: the overall neglect and underfunding of health care, the difficulty of organizing informal workers into their own unions and cooperatives which would enable them to raise these issues, continuing gender inequality and a limited understanding of women's health, and a poor research and evidence base.

In April 2013, SEWA organized a national conference on the occupational health of women workers in the informal economy. The conference was carried out in partnership with government, some employers, ILO, the WHO, researchers from occupational health and design institutes, and some workers from the informal economy. It was supported by the WIEGO Network. WIEGO arranged for colleagues from South Africa and Brazil to describe their experiences in occupational health and speak about how their services are integrated into their public health systems and into UHC.

Chatterjee said that the key issues discussed at the conference were that there is an absence of a policy on OHS for informal workers; that partnerships have great potential to lead to safe work tools and processes and to higher productivity and incomes for workers; and that there should be a greater awareness about occupational health all around—among workers, researchers, employers, and health care professionals. The conference was a first step toward a nationwide process of consultation with unions, workers' groups, employers' associations, researchers, policy makers, and legislators. This process was led by the National Advisory Council, a body of advisors to the government from civil society.

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From these nationwide discussions, a set of recommendations was developed; these recommendations have been accepted by the government and are awaiting implementation. Chatterjee highlighted some of the recommendations that were proposed via this process. The first recommendation Chatterjee highlighted was that a task force should be assembled, consisting of government representatives, OHS professionals, researchers, employers and workers, and their organizations, with the goal of the task force to develop a national OHS policy that will adequately recognize the needs and reflect the realities of India's workforce. This task force would be under the stewardship of the Ministry of Labor, but with the ministries of health, agriculture, and women and child development, among others, also in the task force. The focus would be on how to implement the policy by developing programs and mechanisms, adequately financed, that will reach the poorest and most vulnerable of workers.

A second recommendation was that a national database on OHS should be developed that includes data collected at state and central levels. While there are significant gaps in data, she said, there are enough data to get started, and the data need to be put together and shared widely.

The third recommendation Chatterjee noted was that OHS services should be integrated with primary health care and UHC, so that primary health care workers recognize possible work-related diseases and that workers are screened and referred in a timely manner to higher levels of care. Another recommendation was to invest in educational programs from schools onward in order to develop awareness among workers and the general public, with the aim of enabling prevention and the early detection of conditions. There is a huge gap of knowledge and information among workers, despite the fact that they suffer daily and that there are known ways to prevent many conditions.

The fifth recommendation was for the development of tools and equipment to safeguard workers' health and productivity—an area that Chatterjee suggested can only be addressed by partnerships. Chatterjee said that SEWA has found that the low-cost development and production of tools and equipment leads to significant productivity and income increases for these poorest of workers. It also leads to a reduction in drudgery and in the aches and pains that workers experience daily but that are often ignored because they are not life-threatening or else because they are poorly understood. SEWA's experience with partnering with others to improve tools and equipment has shown that there is much to be learned by all involved. One challenge is the cost of some of the tools. An improved sickle for Rajiben costs US$2, which even she could afford. And Fatimaben's income increased by US$8 per day with the improved

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kite-making table she got from SEWA. But she and other kite workers cannot afford to buy the new table, which would reduce back pain but costs US$35. There is a strong case for cofinancing such tools by employers through the governments' workers welfare boards and even loans from neighborhood banks.

A sixth recommendation was to invest in the development of more health care professionals in the OHS sector—in particular, in those willing to research and develop services for informal workers. The task force suggested starting with training programs for existing primary health care doctors, nurses, and other frontline workers.

The final recommendation Chatterjee mentioned was that the state governments, the main implementers of all health services, and the relevant government ministries should undertake OHS impact assessments in their sectors before undertaking new development programs and projects.

Lessons Learned from SEWA

Chatterjee closed her remarks by sharing what SEWA has learned over the years about the broader vision for UHC with a special emphasis on informal workers. She said that improving the health of workers and others is a long-term endeavor that requires action at both the macro and micro levels. A strong base of workers' and people's organizations can help ensure that the recommendations from the UHC commission reach the most vulnerable in society, including informal workers. Chatterjee suggested that the political economies of villages and urban settlements, the exploitative nature of work arrangements, the lack of essential services and basic social security, and other factors lead to the perpetuation of sickness, deprivation, and poverty. Thus, she said, the struggle for OHS and UHC is closely linked to the struggle for justice in the workplace and in society and to the struggle for gender equality for women workers facing discrimination and violence within their very homes and families. The various barriers and hurdles can only be overcome when people come together, organize for their own rights, and find local solutions to their own health problems, with the government and others as enablers and supporters. Her SEWA experience has shown her, Chatterjee said, that frontline health workers like Rajiben are key.

Chatterjee suggested that it is not the lack of resources that is the major challenge but rather the lack of political will and an inability to develop strong partnerships and to include all in the long journey for OHS and UHC. India has acknowledged the gaps in policies at the macro level for UHC and is willing to engage with others in the search for solutions. It has recognized that poverty reduction and health improvements must go hand in hand. Meeting the challenges ahead, Chatterjee stressed,

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will require much greater investments, greater political will, and more partnerships.

DISCUSSION

In response to Emrey's and Dzau's presentations, Roger Glass from the Fogerty International Center of the National Institutes of Health said that although the topic of research had not entered the conversation, there are significant contributions that it can make. As examples of research that could make such contributions, he mentioned research on conditional cash transfers, delivery mechanisms, and innovation through mobile technology.

Derek Yach from The Vitality Institute said that he noticed a contrast in the presentations between the opportunities and potentials for tackling the issue through innovation and partnerships and the view that currently progress is slow. Yach urged the workshop participants to think about how innovations in technology and insights into behavioral economics can transform opportunities in LMICs.

In response to a question from Paurvi Bhatt about the inclusion of services for the management of noncommunicable diseases within the benefits packages that are being designed, Emrey said that while there is certainly a growing awareness within the global health community about the burden of noncommunicable diseases in LMICs, in many cases the resources have not been made available through any financing arrangement or delivery system to adequately cope with the growing burden that those diseases present. In any country, from India to small countries in sub-Saharan Africa, designing the benefits package requires working with the resources available to cover the costs. There has to be a political and rational economic conversation about how to align benefits packages with needs and resources. Fortunately, there are readily available tools with which to look at a benefits package and try to perfect it in a way that more fully addresses the burden of disease and covers parts of the population that do not yet have coverage, but there is no way to cover everything for everybody tomorrow; it will take time. However, Emrey stressed that while conversations about benefits design need to be both reality-based and evidence-based, there are opportunities for innovations to provide some solutions for how to cover more services with given resources.

Martha Chen from Harvard University commented on the burden of disease from the perspective of informal workers. Chen said that there is a need to better understand the burden of chronic disease on these workers, whose only asset is their labor, and how that burden affects their earning opportunities. She added that the indirect costs of disease include the

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opportunity costs related both to earning income and to negotiating the bureaucracy in order to access the health services.

In response to a question from Bob Bollinger of Johns Hopkins University about the potential to leverage innovation and technology to enhance and accelerate community participation and the accountability and transparency of developing communities of health, Chatterjee mentioned several promising opportunities, some of which are very low tech and low cost. For example, some states have written details about services in the local language on the walls of the primary health center so that people know what services and medicines they are entitled to and which are free of charge. Another example is instituting certain community processes into the government public health system, including a social audit, which involves periodically sending a joint team of public–private community organizers into communities and holding large public meetings. Chatterjee said that it is not easy for people to speak out, particularly women, but slowly they will begin to speak out, and this provides a public platform so that they can democratically exercise their right to ask questions and to find out more information; meanwhile, the public health authorities and the private providers can hear from the communities. Chatterjee also mentioned promising opportunities that use technology. One example is Swasthya Slate, a tool being developed by the Public Health Foundation of India. It is a small tablet for frontline health workers that can be used to collect data to be sent and shared centrally. Putting this type of tool in the hands of frontline workers who are more concerned about their neighbors' children than anybody makes it more likely that authentic data will be provided.

Peter Berman commented on the shifts between formal and informal employment. Given the data from countries where 50, 60, or even 90 percent of the workforce is informal, he asked, what does it mean to be formal in those countries? The data on the size of the informal workforce indicates a profound transformation in the model of the future of employment and services. Historically the assumption has been that people would move into formal sector employment and that some combination of the state and formal sector employers would assure their coverage. Countries differ greatly in their arrangements for care, for example, in whether it takes place through mandates or through taxes. Although the mix of the arrangement differs from one developed country to another, there is usually the same outcome—that is, that nearly all individuals have fairly good coverage with a fairly good package of benefits. Considering this, Berman asked, Is this model delayed, or is it profoundly restructuring in a world that has changed? He said that there has been a growing concern that UHC could increase informality, because with more

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public-sector coverage there can be less responsibility placed on employers for providing coverage.

Francie Lund from WIEGO highlighted the complexity of establishing a defining line between formal and informal workers through the example of a large factory producing car parts. The informal workers are not outside of the factory. They are inside in a corner working for themselves by making belts to put into the engines. However, when a new large order comes in, they are pulled in under contract for several weeks to work on filling that particular order. Drawing a line and defining whether these are formal or informal workers and whether they should be the focus of different interventions is very complex.

Charu Garg from the Institute for Human Development in India brought up the example of another subpopulation that adds complexity to the discussion—informal sector workers who have stopped working because of age or illnesses. If individuals in this subpopulation develop diseases or conditions based on their previous exposure to occupational hazards, Garg asked, then how are those conditions to be defined and treated?

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3

Mapping Solutions to Universal Health Coverage Inclusive of the Informal Workforce

During the workshop presentations and discussions on how to meet the health and safety needs of informal workers in developing countries, two reoccurring themes arose: the potential of global employers to provide coverage to informal sector workers, and the need to understand and map the size, characteristics, and needs of the informal sector workers. This chapter includes presentations and discussions on these themes.

ROLES OF GLOBAL EMPLOYERS IN UNIVERSAL HEALTH COVERAGE

Lorna Friedman, Mercer

Global corporate employers are answerable to their shareholders, Lorna Friedman from Mercer noted, and thus any role they serve in promoting universal health care (UHC) must have a value component that is recognized by the shareholders. Friedman's own perspective from working with corporate clients is that employers have multiple potential roles to play in establishing UHC: for instance, extending coverage through existing formal schemes for their own populations for employees; addressing management efficiency issues in the delivery system; developing funding mechanisms with innovative components; and importantly addressing the issues of stigma in health care. She added that global corporations have an opportunity to address UHC by working through

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an integrated sustainability model that integrates corporate resources in the areas of occupational health, benefits coverage, and human capital and talent.

Friedman said that a major issue for global corporations is acquisition and retention of human capital and talent. There is often poor alignment between where talent is needed and where it is located geographically. In particular, it is increasingly the case that the employees of U.S.-based corporations are predominantly outside the United States, so these corporations are invested in competing for talent outside the United States and the quality of health available to the labor pool is important.

Concerning why global corporations have an interest in the health and wellness for their workforces, Friedman presented several key factors: employee engagement, consumer engagement, reputation, medical and disability costs, and safety (see Figure 3-1). Furthermore, the health and wellness of populations within countries has been recognized by the World Economic Forum as one of the four pillars that undergird economic prosperity.

The corporate sector is investing in ways to better meet the health needs of its employees globally, Friedman said. She added that offering supplemental health insurance is an increasingly popular response to public systems that are increasingly under duress and to employees who

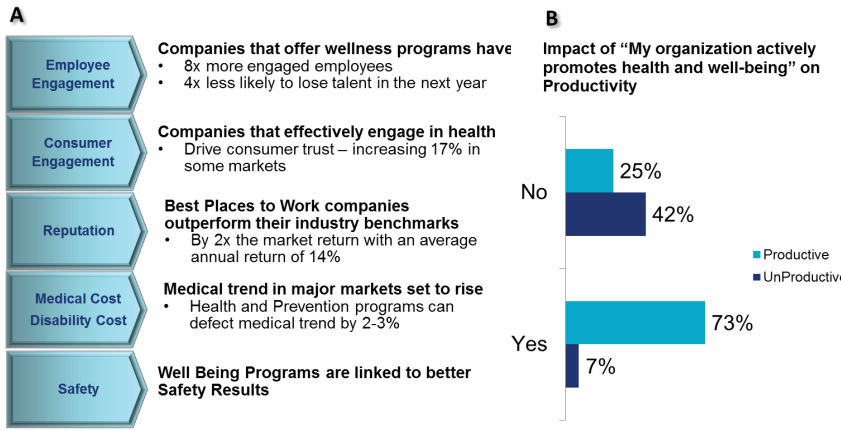

FIGURE 3-1 Key business factors supporting global health and wellness strategies. SOURCES: Lorna Friedman presentation to workshop, July 29, 2014; (A) The Edelman Health Barometer, 2011 (http://www.slideshare.net/EdelmanInsights/edelman-health-barometer-2011-global-deck [accessed July 29, 2014]); Edmans, 2007; Henke et al., 2011; Hymel et al., 2011; WEF, 2008. (B) Adapted from WEF, 2008.

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are looking for options that will meet their needs. However, progressive global employers are realizing that supplemental insurance is not always in sync with either corporate philosophies or employee needs. These progressive employers see a role in mitigating stigma and promoting access within the countries where they operate. Through such actions, they are influencing local market norms in regard to both the expansion and the elements of coverage.

THE ROLE OF EMPLOYERS IN COVERAGE AND OCCUPATIONAL HEALTH: A PERSPECTIVE FROM THE U.S. EXPERIENCE

Marleece Barber, Lockheed Martin

From her perspective as an occupational physician within the corporate sector, Marleece Barber from Lockheed Martin shared her thoughts on the role of the corporate sector in universal health coverage and on where opportunities exist for potential partnerships with public entities. In examining solutions for providing universal health coverage to the global and informal workforce, Barber suggested that there are lessons to be learned from experiences in the United States. There are examples of employer-sponsored health benefits that date back to the colonial era, but it was not until the early 1900s that the concept of a partnership between employers, workers, and government emerged. Employer-sponsored benefits offer citizens a safety net that can protect workers and their families from catastrophic losses due to unforeseen illnesses. Businesses need a healthy, robust, energized, and committed workforce to be able to develop innovative products and deliver services. Providing health coverage is a mechanism that directly addresses productivity: Healthy workers are able to perform meaningful tasks and to perform at their peak, which allows companies to be competitive in the marketplace. Government is also heavily invested in the model of employer-based coverage because a nation needs a workforce that is economically stable and healthy. Thus, governments contribute to this model by offering tax incentives to employers who offer benefits to their employees.

Given escalating health care costs in the United States and the changes that will occur as a result of health care reform, Barber suggested that employers are considering the impact on how they will provide health care coverage to their workers and their families. Employers are also looking to their employees to share more of the costs of coverage and to take a more active role in their health maintenance. Recognizing that productivity is essential in order for businesses to thrive, most employers remain committed to supporting their employees' health for the good of the employer and employee.

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Beyond profitability and workforce productivity, Barber stressed, most corporations want to be good corporate citizens and are interested in developing partnerships with other groups that are in sync with their core values. She suggested that, given this context on the health care climate and the motivations of global corporations, the time has never been better to start advancing smart collaborative approaches to addressing health issues that are affecting workers and communities around the world. Barber offered some examples of areas where she believes there is progress emerging and pointed to some opportunities for advancing these efforts through partnerships.

Within occupational health, Barber said, there is a movement toward a focus on health as an outcome and toward a public health approach focused on determinants of health. From this movement, promising population health strategies are emerging and changing the way that companies think about where they want to make investments in their workforce and their communities. For example, companies are offering free preventive care to their workers, and some are erecting medical clinics and hospitals in their communities to extend the care to family members and beyond.

Employers are developing health behavior change strategies and, by providing education, tools and ongoing support, employees and their families have an opportunity to be more successful in reaching their health goals. Barber suggested that this is an area that is ripe for collaboration among community advocates, businesses, and local public and private entities. For example, such collaborations could sponsor events in which workers and their families come together to participate in health-related activities and to receive information or services related to preventive care. There also are opportunities for corporations to invest in improving the social and environmental conditions of communities in ways that promote health and safety—for example, building safer roads and erecting safe recreational spaces.

EFFORTS TO MAP THE INFORMAL WORKFORCE AND HEALTH COVERAGE IN LATIN AMERICA

Orielle Solar, Latin American Social Sciences Institute, FLACSO Chile[1]

Understanding the size and characteristics of populations of informal workers as well as their current access to services can help stakeholders target the workers' health and safety needs. Orielle Solar from the

[1] The speaker acknowledges the contributions of the additional members of the research team: Pamela Bernales, Amalia Valdes, Andrew Cardenas, Simon Ramirez, Maria Jose Gonzales, Alejandra Vives, Denise Lama, Rodolfo Tagle, and Vicente Alamos.

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FLACSO Chile presented preliminary findings from the Project for Health Inequalities and Access to Social Security of Informal Workers in Latin America, Asia, and Africa. Supported by The Rockefeller Foundation, this ongoing research program is mapping the size of and trends concerning informal workers in Latin America; the heterogeneity of informal workers; their working conditions, access to health service, and barriers they encounter; and existing interventions to address their needs.

To provide context for analyzing and comparing interventions and results across countries, Solar's research group developed a taxonomy based on a set of indicators that divides countries into four groups (see Figure 3-2). Group 1 is characterized by low informal sector size and high health system coverage. Group 2 has medium-low informal sector size and medium-high health system coverage. Group 3 has a medium-high informal sector and medium-low health system coverage. Group 4 has a high informal sector and low health system coverage.

Using the taxonomy, Solar's research group has mapped trends of informal employment over time across the Latin American countries included in their study (see Figure 3-3). Solar also commented on the

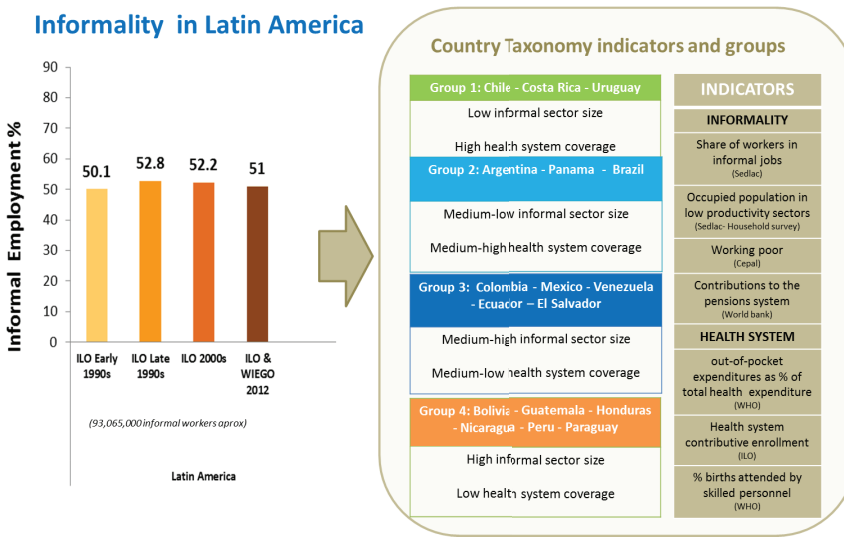

FIGURE 3-2 Country-level taxonomy for informal workers in Latin America.
NOTE: ILO = International Labour Organization; WHO = World Health Organization; WIEGO = Women in Informal Employment: Globalizing and Organizing.
SOURCES: Orielle Solar presentation to workshop, July 29, 2014; elaborated by FLACSO-Chile; data from International Institute for Labour Studies Informality Database, ILO and WIEGO, 2013.

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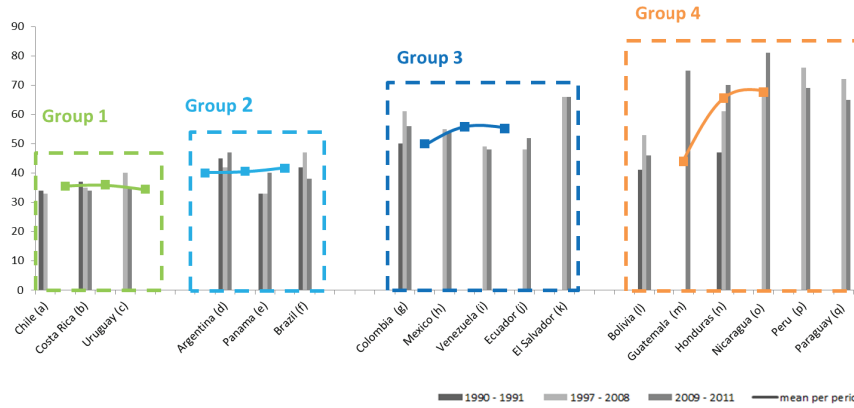

FIGURE 3-3 Trend of informal employment in total nonagricultural employment (%) 1990–2011 based on country taxonomy.
SOURCES: Orielle Solar presentation to workshop, July 29, 2014; elaborated by FLACSO-Chile; data from Key Indicators of the Labour Market, 8th edition.

heterogeneity of the informal workforce within and across countries and how this affects the types of interventions that are needed. Income levels, age, employment status, and gender are all variables that affect the needs and types of interventions for the target population groups in the informal workforce.

Solar's research group has developed a model to understand the barriers to access that are associated with employment conditions and as well as those associated with the organization of the health system (see Figure 3-4).

The next step of their research program included collecting primary information through qualitative studies on the informal workers' perceptions of access and barriers to access to health care, employment conditions, and working conditions and health status; and building indicators of informal work and health that are relevant, robust, and comparable between countries. The indicators were developed through a secondary data analysis of each survey, recognized key survey questions, potential indicators, and proxies; and per country information on the magnitude of informal work, the health of informal workers, and their access to social protection and health care. The final product was a minimum set of core indicators and questions for surveillance and monitoring. Solar's team is in the process of mapping interventions that are available to informal workers. Through a preliminary review of the gray literature, key informants, and a review of case studies, the research team has iden-

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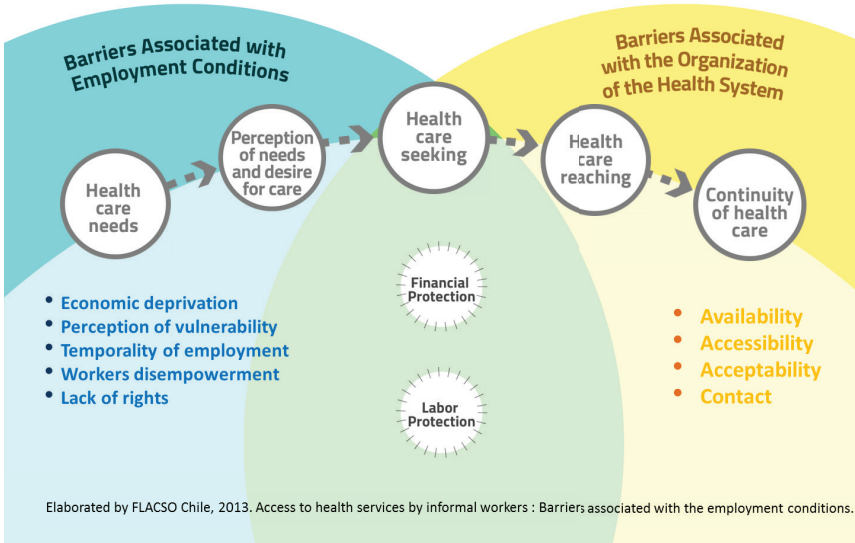

FIGURE 3-4 Access to health services domains for informal workers.
SOURCES: Orielle Solar presentation to workshop, July 29, 2014; elaborated by FLACSO-Chile, 2013; adapted from Frenk, 1985.

tified 361 interventions, 54 percent of which are focused specifically on informal workers. Most of them focus on *expanding social protection* (23.7 percent), followed by *formalizing informal jobs* (20.1 percent), and expanding health care coverage (17.1 percent). The majority of the interventions are programs and projects; very few are legislative interventions. Most interventions were initiated by the central and local government (60 percent) with workers' organizations accounting for the second-highest number (10 percent). Solar said that the majority are not implemented with a specific focus on informal workers and they approach informality from a general and generic perspective. In the case of interventions that are directed specifically to informal workers, 21 percent of them were focused on own account workers and 17 percent on depend informal workers.

Solar said that the challenge for UHC for informal workers is that on one side there are barriers associated with employment conditions, while on the other side there are barriers associated with the organization of the health system. To address the barriers on both the demand and supply sides, Solar suggested it may be necessary to extend the labor rights of informal workers and to provide health care options that are not conditional on employment status and recognized the heterogeneity of informal workers.

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DISCUSSION

During the discussion, several workshop participants offered comments on the role of employers in developing solutions for UHC for informal sector workers. Derek Yach from The Vitality Institute suggested five reasons why global employers should be investing in the health and well-being of informal sectors workers:

- Investments in the corporate supply chain: The health and well-being of informal workers in the supply chain affects productivity just as the health and well-being of formal employees does. Additionally, corporations are beginning to be evaluated based on the treatment of workers in their supply chains.
- Investments in future employees: Informal workers may be future employees of global corporations, and investments in their health are investments in the future workforce productivity.
- Investments in the consumer base: For many corporations, informal workers are the consumer base. Investing in their health can improve their stability and purchasing power.
- Investments in reverse innovation: The best opportunities for reverse innovation occur where the price point is extremely low and where developing new products and services can be done in the most cost efficient way. Many of these reverse innovations are springing up from the informal sector.
- Investment in corporate reputation: Many companies can be persuaded to invest in the health of their local communities if doing so will have positive impacts on their reputation or if inaction or harm to the health of the community will negatively affect the corporate reputation.

Marty Chen from Harvard University and Women in Informal Employment: Globalizing and Organizing added to Yach's list the observation that informal workers are also part of the distribution chain, whether they are selling newspapers, soft drinks, or other products. Thus, corporations should be investing not only in informal workers who are part of the production chain and consumer base but also in informal workers who are part of the distribution chain.

Victor Dzau of the National Academy of Medicine said that employers' increasing engagement in health is encouraging, but developing the right tools and being able to measure outcomes will also be important. Barber said that occupational health professionals and corporations have long admired the success of their safety peers. Often occupational health has struggled to have the same level of support that the safety community

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has had. She suggested that perhaps what is lacking is transparency and the sharing of information on the health status of the workforce. Yach added that there is currently an initiative under way to develop corporate health metrics as part of integrated financial and environmental reports and to build that into the reporting structures of the sustainability index, the global reporting initiative.

In elaborating on the opportunities for employers to engage in UHC, Paurvi Bhatt suggested that one area ripe for partnership is providing technical assistance to UHC efforts through the application of various tools that corporations have developed, such as insurance models and wellness packages.

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4

Responding to Work-Related Health Needs of Informal Sector Workers

This chapter includes presentations describing institutional efforts to protect and promote the working capacity of informal sector workers and to provide protection from occupational health and safety hazards in the work environment.

PRIMARY-CARE BASED INTERVENTIONS FOR INFORMAL SECTOR WORKERS

Ivan Ivanov, World Health Organization

Ivan Ivanov from the World Health Organization (WHO) discussed efforts by the WHO and its partners to enhance the abilities of primary care organizations to address work-related health needs. Primary care is the most widely available option that informal sector workers have for accessing health services, and thus enhancing capacities within primary care is one way to effectively reach that population.

The health impacts and global burden of occupational risks are significant; occupational risks are among the 10 leading risks for disease and disability worldwide (Institute for Health Metrics and Evaluation, 2010). In 2007 the World Health Assembly (WHA) adopted a global plan of action on workers' health which sets forth a 10-year agenda for the worldwide health sector to respond to the specific health needs of workers. As part of the resolution, the member states of the WHO committed themselves to work toward full coverage for workers, including those

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in the informal economy, in small and medium-sized enterprises, and in agriculture and also migrant and contractual workers; this full coverage would include essential interventions and basic health services for primary prevention of occupational and work-related diseases and injuries. In a continuation of this commitment, the draft agenda of the post-2015 United Nations Sustainable Development Goals includes targets that are well aligned with the vision of the global plan of action for workers' health. Even before these recent commitments to workers' health, Ivanov said, occupational health was seen as a human right for everyone, not only for formal sector workers, as set forth in the Universal Declaration on Human Rights and the International Covenant on Economic, Social and Cultural Rights. Ivanov stated that globally the provision of employment injury benefits is greatly unequal and, overall, quite low.

Ivanov showed an adaptation of the WHO's universal health care cube to the world of work (see Figure 4-1). In occupational health, cost sharing has important implications for employers, the public sector, and the workers. Ivanov suggested that, rather than society at large, it should be

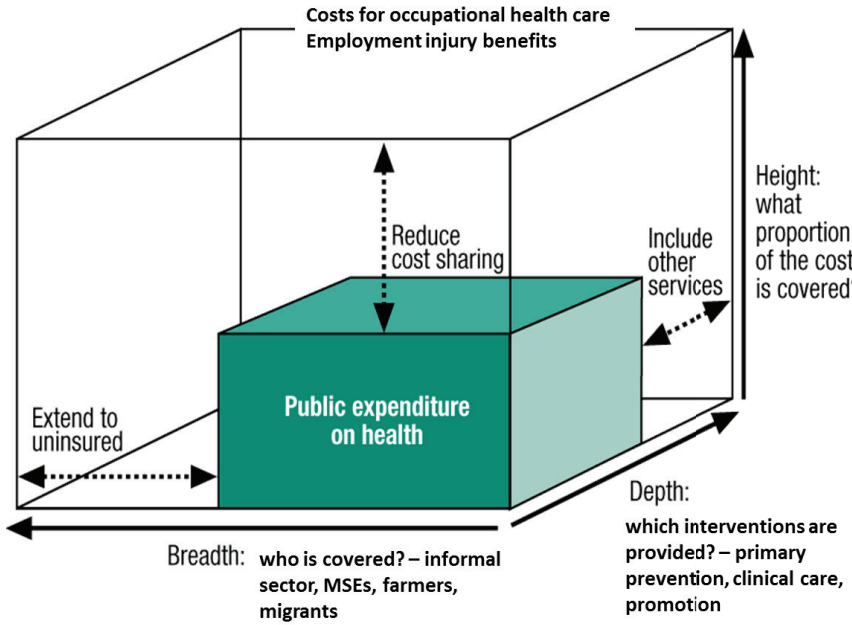

FIGURE 4-1 Three ways of moving toward universal coverage for workers.
NOTE: MSE = micro and small scale enterprise.
SOURCES: Ivan Ivanov presentation to workshop, July 30, 2014; adapted from WHO, 2015b.

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the entities that profit from economic activity that bear the consequences of exposure to occupational hazards. Furthermore, workers who become ill or injured as a result of their work should have social protection that is independent of whether they have a formal or informal employment contract.

Ivanov said that in the universal health care discussions at the WHO, the working poor and the informal sector are the target populations. These groups include about 1 billion workers who are below the global poverty line of US$2 per day. Globally, the informal sector constitutes up to 50 percent of the labor force, and in some countries the informal sector is nearly 90 percent of the labor force. The health of informal sector workers is directly linked to their earning potential. Informal sector workers sometimes are the only breadwinners in their families, and if an informal worker becomes sick or injured, his or her whole family can become trapped by persistent poverty. Protecting the health of informal sector workers and extending occupational health and safety services is part of the WHO's poverty alleviation agenda.

The WHO currently is working with countries to scale up primary care–based interventions for the informal sector workforce. In 2011, the WHO held a meeting between occupational health providers, primary health care providers, and general practitioners to discuss the connections between health and labor at the primary care level within the health system. Ivanov said that the WHO meeting resulted in a recommendation for three groups of interventions that can be and should be provided at the primary care level: advice for workplace improvements, the control of work-related and occupational diseases and injuries, and health surveillance.

Following this meeting, the WHO reviewed the literature on the types of interventions for workers' health that are being delivered at the primary care level. The literature review found that a group of environmental interventions and behavioral interventions for the primary prevention of occupational work-related diseases and injuries are delivered in countries where the primary care system has the responsibility for a defined area. Such interventions are not in primary care systems that are based on liberal medicine and free choice of provider (WHO, 2013). A second group of interventions delivered in many countries consists of interventions for the case management of occupational and work-related diseases, including taking work history, reporting occupational diseases, the followup of cases, and medical surveillance. The review found such interventions in both developing and developed countries (WHO, 2013). Several barriers to the delivery of interventions were identified by the review:

- Accessing workplaces in the informal sector
- No mandate to enter private enterprises

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- Rapidly changing work practices
- No occupational health training program for primary care
- Shortage of health workforce
- Lack of knowledge of occupational health hazards among providers
- No time to visit workplace
- Lack of knowledge about occupational diseases and their causes
- Complex diagnostic and exposure criteria
- Difficulties with identifying occupational exposures and communicating with employers and occupational health services
- Fear of repression from employers
- No relationship with occupational physicians and no referral pathways
- Need extra time
- Long waiting time for specialists
- Inappropriate denial of workers' compensation
- Refusal of workers to have their case notified

Following the literature review, the WHO conducted field studies and interviewed primary care providers in six countries. Ivanov said that the studies were conducted with the support of national collaborating centers for occupational health, and one country per region was picked based on feasibility and established networks. The selected countries were Colombia, Iran, Italy, Philippines, Thailand, and South Africa. The results of the field studies are summarized in Table 4-1.

Based on the results of the studies, Ivanov said, the WHO is encouraged that the delivery of certain interventions for improving the health of workers and keeping them on the job through primary care is possible, and the WHO is working toward scaling up effective models. The WHO is working to enable the primary care sector to address workers' health by working with ministries of health to include work-related tasks and activities in the terms of reference of the primary care providers so that they can establish referral pathways to occupational health services. The WHO can set up programs for the training and retraining of primary care providers, ideally as part of continuous medical education. Additionally, the WHO is working to strengthen occupational health services, increase their numbers, improve their quality and effectiveness of delivery, and ensure that the occupational health services are connected to primary care. Furthermore, the WHO is working with ministries of health to provide financial protection for all workers, including workers in the informal sector, through social health insurance and noncontributory coverage for the poor, and by scaling up coverage of employment injury benefits.

Ivanov suggested that informal work should be considered as a social

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TABLE 4-1 Results of the WHO Field Studies, 2012–2014

Intervention	COL	ITA	IRA	PHL	THA	ZAF
1. Primary prevention at the workplace level						
• Workplace visit/survey	Yes		Yes	Yes	Yes	Yes
• Workers' health education			Yes	Yes	Yes	Yes
2. Detection and case management of occupational and work-related ill health						
• Taking work history	Yes	Yes	Yes	Yes	Yes	Yes
• Clinical examination	Yes	Yes	Yes	Yes	Yes	Yes
• Notification of suspected cases of occupational diseases	Yes	Yes	Yes	Yes	Yes	Yes
• Counseling to patients for work modification	Yes		Yes	Yes	Yes	
• Contact/visit to patient's workplace	Yes	Yes	Yes	Yes	Yes	
• Provision of medicines for treatment				Yes	Yes	
• Provision of personal protective equipment for sick workers					Yes	
3. Fitness for work and health surveillance						
• Assessment of functional capacity				Yes		Yes
• Periodic preventive medical examination			Yes	Yes	Yes	
• Return to work counseling				Yes		
• Screening of high-risk workers				Yes	Yes	

NOTE: COL = Colombia; IRA = Iran; ITA = Italy; PHL = Philippines; THA = Thailand; ZAF = South Africa.
SOURCES: Ivan Ivanov presentation to workshop, July 30, 2014; data from the WHO Field Studies 2012–2014.

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determinant of health. If informal work is classified as a social determinant, it would facilitate achieving a better understanding of risks and needs and their effects on income; removing the financial, structural, and cultural barriers to access to health services; and promoting social protections. Ivanov also suggested that informal work should be considered an environmental determinant and that the health sector should address it by mapping health risk (occupational, environmental, and behavioral) in typical informal settings; by identifying cost-effective interventions for health protection and promotion; by promoting policy options for delivery channels for informal sector workers; by developing resources for workers' health; and by detecting and reporting occupational disease and injuries.

Ivanov said that the next steps for the WHO in the area of primary care–based interventions for informal sector workers will be developing

- definitions of essential interventions, target population, and channels and competencies for delivery;
- methodology for measuring workers' health coverage;
- software for costing and planning scale-up scenarios (International OneHealth Costing Tool);
- standard modules for training of primary care providers;
- practical tools for delivery of interventions in low-resourced settings;
- support to countries to develop national road maps for scaling up workers' health coverage; and
- special action on the health of the informal sector workforce—social determinants, occupational health, and health financing.

RESPONDING TO THE WORK-RELATED NEEDS OF INFORMAL SECTOR WORKERS IN LATIN AMERICA

Julietta Rodriguez-Guzman, Pan American Health Organization

Julietta Rodriguez-Guzman from the Pan American Health Organization (PAHO) described PAHO's milestones in addressing workers' health and the tools that PAHO uses to promote it in Latin America.

In 1984 PAHO hired the first regional advisor on workers' health, and it has maintained the post continuously since then. In 1994 the *Global Strategy for Occupational Health for All* was issued and approved by the 3rd WHO Global Collaborating Centers Meeting held in Beijing, and was later endorsed by the WHA in 1996. Based on this strategy, PAHO developed a regional action plan for worker's health that was approved by the Directive Council in 1999. The action plan originally had four strategic

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lines of action, Rodriguez-Guzman said: policy and legislation, improving working environments, workers' health promotion, and comprehensive workers' health care services. Many activities and projects were carried out aiming to support member states. A strategy on workers' health promotion in workplaces of Latin America and the Caribbean was launched in 2000. Campaigns to strengthen comprehensive health services delivery and capacity building in Members States through primary health care was also done. In 2006 the results of the first evaluation of the regional action plan led to prioritizing actions that could tackle needs of more Member States. Some initiatives are protecting the health of health care workers, preventing occupational disease (eliminating of silicosis, asbestos-related diseases, occupational cancer, etc.), and preventing emerging diseases (such as H1N1). In 2012 additional adjustments were made to include the protection of critical occupational sectors (including the informal sector), to strengthen the prevention of occupational disease and non-communicable disease, and comprehensive OHS services in primary health care. To pursue in these actions strengthening of occupational health sciences was strongly needed. These adjustments also considered the dynamic changes of the theoretical framework of workers' health during the past 20 years. The approach evolved from the heath and work relationship, to the new concept of work and labor as social and environmental determinants of health.

Rodriguez-Guzman listed PAHO's current principles for global and regional action in workers' health:

- The highest attainable standard of physical and mental health should be set.
- Workplaces should promote and protect health (and not be detrimental to health).
- Primary prevention should be made a priority.
- The workplace should be used as a setting for health interventions for adult working populations.
- The health system should use coordinated responses to address particular settings and economic sectors.
- There should be a focus on reducing inequities in workers' health.
- Actions should be taken with the active participation of workers and employers.
- Coverage of basic occupational health services should be expanded to all workers.

Rodriguez-Guzman stressed that tackling the needs of workers in the informal sector will require advocacy, policies, education, training, surveillance, and research. In Latin America, she said, there are approxi-

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mately 250 million people in precarious work and poverty (ILO, 2013). She said that child labor is also a significant problem in the region, often found and hidden in domestic or agricultural settings. Rodriguez-Guzman also pointed to several other hidden populations within the informal sector, including rural agricultural workers, immigrants and forced laborers.

In addressing the health and safety needs of informal sector workers in Latin America, Rodriguez-Guzman said, there are a number of challenges including defining, quantifying, and characterizing categories; the diversity of characteristics in and within countries, which makes it difficult to implement general interventions; and the payments or co-payments for social benefits are out of reach because of extreme poverty.

To implement the regional action plan on workers' health, PAHO works with 21 WHO Collaborating Centers in the Americas. To address the needs of informal sector workers, several research alternatives have been assessed, aiming to identify who makes part of the sector, where they are located, and how they can be reached. PAHO has concluded that there is no "one-size-fits-all" solution for improving working conditions in the informal sector; but rather, that the solutions rise from bottom-up, with active participation of the communities involved in the problem. They are often vulnerable and poor populations, mainly composed by women, children, indigenous, immigrants and elderly people. PAHO is also committed to identifying interventions and best practices for reaching and helping these informal sector groups.

THE INTERNATIONAL LABOUR ORGANIZATION'S APPROACH AND GOOD PRACTICES FOR OCCUPATIONAL SAFETY AND HEALTH FOR INFORMAL WORKERS

Yuka Ujita, International Labour Organization

Yuka Ujita from the International Labour Organization (ILO) provided an overview of ILO's tools for occupational safety and health. Ujita said that the occupational safety and health unit within ILO is merged with the labor administration. She also noted that ILO uses the term "occupational safety and health," not occupational health and safety. For ILO, safety and prevention are seen as primary factors, and health is viewed as an outcome.

There are nearly 200 international labor standards, and Ujita said that 60 to 70 percent of the standards are related to safety and health. ILO has a two-dimensional approach to safety and health. The first dimension is advisory support at the national level using the International Labour Standards, and the second is technical support at the workplace level. Based on the experiences of ILO, Ujita said, several best practices have

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been identified for successful occupational safety and health programs at the workplace level:

1. Realistic goal setting in achieving "good practice"
2. Self-help stepwise action aimed at low-cost solutions
3. Link to increase of productivity
4. Measures to ensure sustainability

When implementing occupational safety and health (OSH) programs at the workplace level, ILO applies a participatory, action-oriented training, or PAOT, methodology. As presented by Ujita, the flowchart of the PAOT methodology contains four steps: learn local good practices, check multiple areas jointly, implement simple improvements, and confirm benefits and follow up. The PAOT model typically follows a 2- to 3-day program. The program starts with a very short orientation, and then all participants visit a selected workplace nearby with the action checklist. When the participants return to the classroom, they are divided into small groups, and, through discussion, they identify three good characteristics of the visited workplace, three good examples of improvement on safety and health, and three points to be improved in terms of safety and health. Then the trainer presents principles of safety and health and good practices collected from the other regions. Following the trainer presentation, the small group discussions are repeated across different typical areas. In the last session, each participant developed action plans for his or her own workplace. One to six months later, the trainer visits the participants' workplaces to see if they have implemented their action plans.

Ujita provided examples of ILO OSH programs that apply PAOT methodology. They are presented in Table 4-2.

TABLE 4-2 ILO OSH Programs Applying PAOT

Program	Target
WISE: Work Improvement in Small Enterprises	Small enterprises
WIND: Work Improvement in Neighborhood Development	Small-scale farmers
WISH: Work Improvement in Safe Home	Home-based workers
WISCON: Work Improvement in Small Construction Sites	Small construction site workers
WARM: Work Adjustment for Recycling and Managing Waste	Waste recycling workers

SOURCES: Yuka Ujita presentation to workshop, July 30, 2014; data from Khai et al., 2011.

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Ujita said that the ILO does not provide any money to make OSH improvements through the PAOT programs. Instead, to promote sustainable changes, the improvements are made using available materials at the cost to the local organizations or workers. The idea is to shift the ownership for the improvement, and typically very low cost or free improvements are developed.

However, to ensure sustainability, Ujita said, support is needed from the national authority in terms of policies, and it is through coordination at the national and workplace levels that the best outcomes for OSH improvements will be achieved. For example, in Kazakhstan and Vietnam successful implementation of Work Improvement in Neighborhood Development (WIND) programs at the village and district levels led to the adoption at the government level of WIND as the national strategy for every worker in small-scale farming.

A PERSPECTIVE FROM THE UNITED STATES

John Howard, U.S. National Institute for Occupational Safety and Health

John Howard from the U.S. National Institute of Occupational Safety and Health (NIOSH) provided some brief remarks on the response to work-related health needs of informal sector workers in the United States. He noted that it is a topic that is not often discussed. However, it is a pertinent issue because low-wage jobs represent nearly one-half of all new jobs that are created in the United States, and evidence from research shows that workers in low-wage jobs are at an increased risk of work-related injuries and illnesses. There are some channels for accessing federally funded OHS services. Federally qualified health centers administered by the Health Resources and Services Administration sponsor community and migrant health centers that provide services to individuals who are frequently employed in the informal sector in the United States. The Patient Protection and Affordable Care Act, which was passed in 2010, provides a special fund over the first 5 years to support the expansion of these clinical centers and their services to increase the number of patients served by this population. Howard said that NIOSH is assisting these centers by helping provide preventive health services, but in the crush of providing rescue medicine, it is often very difficult to add preventive occupational health services despite a recognition of their value. NIOSH is working in several different areas to improve the diagnosis and management of and patient education concerning occupational health in the health centers.

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5

Select Country Experiences

Many countries have the challenge of meeting the demands for the provision of quality health services to its varied populations. With a purposeful sampling of countries and diverse perspectives from the public and private sectors, the workshop included a number of presentations that explored efforts within countries to achieve universal health coverage or occupational health and safety, or both, for the informal workforce. For several countries, more than one speaker presented a perspective on the country's efforts as a way of providing diversity and depth to the depiction. The presentations included in this chapter are organized alphabetically based on the country of focus.

BRAZIL: BUILDING THE NATIONAL OCCUPATIONAL HEALTH SERVICES NETWORK: AN EXPERIENCE WITH UNIVERSAL HEALTH CARE PROVISION

Vilma Santana, Federal University of Bahia, Brazil

Vilma Santana from the Federal University of Bahia in Brazil described the experience of developing occupational health services (OHSs) in Brazil. Brazil is a large country with more than 200 million citizens and the world's seventh largest economy, which has a major focus on food production. Santana shared that since the late 1990s, social policies in Brazil, including those focusing on universal health coverage, have been strong, and she suggested that many of the gains in the human develop-

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ment index for Brazil in the last several decades have been the result of a focus on social development and policies. Santana provided some statistics to give a brief overview of the world of work in Brazil: There are more than 100 million workers, 20 percent of whom are rural workers, 44 percent are women, and 22 percent are living below the poverty line. Child labor is illegal under the age of 14, and decreasing child labor through policy efforts is currently an important social issue. The portion of the workforce that is informal is significant but has decreased in recent years, from 51 percent in 1999 to 42 percent in 2013.

Santana then described the institutional framework for workers' protection in Brazil, which includes the ministries of social insurance, labor and employment, and health. The social insurance ministry provides compensation benefits for sickness-related disability, both occupational and nonoccupational, and pensions. This set of benefits is limited to registered workers who contribute 8 percent of their paychecks toward social insurance. The labor and employment ministry provides labor protection through the occupational health and safety authority, which carries out workplace inspections and various other safety-related measures. The labor protection measures are universal but apply only for specific legal issues such as bonded work, child labor, and illegal wage workers. Thus, informal workers are excluded from this aspect of labor protection. The health ministry provides overall health care, clinical care at all levels of complexity, health surveillance, prevention, hazards monitoring, and health promotion. The health ministry also serves as the coordinator for universal free services. In Brazil out-of-pocket costs are universally free, with private firms providing supplementary health care services. Universal coverage is enshrined in Article 196 of the federal constitution of 1988: "Health is everyone's right and a State duty . . . that is guaranteed by social and economic policies aimed at reducing the risk of disease and other hazards . . . and to provide universal and equal access to healthcare services intended to health promotion, protection, and recovery."

The efforts in Brazil to provide universal health care (UHC) are undertaken through the Brazilian National Health System (SUS). Santana noted that SUS was created as a result of the health reform movement that developed in the 1980s after the fall of the country's previous dictatorship. The health system was built by a coalition of parties and labor unions, academics, and intellectuals under the political claim that health is a citizen's right and a state duty. It was based on the premises that the major asset of a nation is its people and that it is the nation's workers who build the nation's wealth. Santana emphasized that because health is a citizen's right, health care cannot be treated as a commodity like other goods. SUS is directed by a set of fundamental principles: Coverage should be universal and include informal or formal workers regardless of sex, age,

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and ethnicity; health care should be equitable; there should be free access at all levels of the system; the health system should be integrated across all public management levels; health care should focus on prevention and health promotion; and the system should be based on participatory management.

Within the SUS, occupational health is integrated into primary health care services at the federal, state, and local levels. In every state there is a workers' health state center which provides specialized expertise and support to all workers through Reference Centers for Occupational Health (CERESTs). There are more than 200 CERESTs distributed throughout Brazil which provide support to primary health care, family health programs, and community health agents at the household level. Santana noted that the centers provide occupational health and safety services which include clinical assistance, diagnosis, treatment, and recovery as well as workplace inspection, identification of hazards, and treatment of the hazards.

Some examples of the activities that CERESTs carry out are health promotion and protection based on priorities drawn from local epidemiological data; education and community participation through workshops, rallies, and local health councils; and enhanced dialogue with social movements, labor unions, and organizations. Additionally, Santana pointed out that CERESTs map all local economic activities, including the informal workforce, and they identify industry trades that have higher OHS risks, both in the formal and the informal economy.

Despite the progress that has been made in Brazil to provide UHC, to integrate OHS into UHC, and to target both formal and informal workers, Santana noted that there are still challenges remaining. There is a lack of training in OHS among health workers, for example, and the participation of informal workers in local or state OHS counsels is often weak because they are not well organized. Underfunding is also an issue. Furthermore, the geographic areas covered by some CERESTs are quite large, and access to and from these regional centers can be challenging because of the distances and poor road conditions.

INDIA: INEQUITIES IN FINANCING, COVERAGE, AND UTILIZATION OF HEALTH CARE BY INFORMAL SECTOR WORKERS

Charu Garg, Institute for Human Development, India

Charu Garg from the Institute for Human Development in New Delhi spoke on financing coverage and utilization among informal sector workers in India. According to 2014 data, almost 83 percent of the 487 mil-

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lion workers in India that work for small enterprises (defined as having fewer than 10 employees) are informal sector workers, with another 9 to 10 percent working as casual laborers on a contract basis in the formal sector. The primary industries in which they are concentrated are agriculture, construction, shops and establishments, cigar manufacturing, waste management, food service, transportation, and home-based work. Some of the major occupational health problems that have been recognized are injuries due to accidents; chronic respiratory/lung diseases (asthma, chronic obstructive pulmonary disease, pneumoconiosis, and silicosis); musculoskeletal disorders (such as low back pain); skin diseases (contact dermatitis); noise-induced hearing loss; poisonings, especially due to pesticides; lung cancer; leukemia; and certain infectious, parasitic, and mental diseases.

Within the financing and delivery mechanisms for covering formal workers in India, financing is provided mainly by government and employers, with small premiums from employees. Comprehensive benefit packages include an entire continuum of care, including prevention, promotion, outpatient, inpatient services, medicines, and diagnostics. Garg noted that delivery is provided through a mix of public and private facilities.

After providing some perspective on the schemes and services available for formal sector workers, Garg presented a table with the major government initiatives to cover informal sector workers (see Table 5-1).

The Rashtriya Swasthya Bima Yojana (RSBY), which is the largest initiative for informal sector workers, covers about 400 districts across 27 states. It is financed through a mixture of contributory and noncontributory schemes. The center and the state split the financing 75 percent and 25 percent, respectively, and the beneficiary pays only a small registration fee. For example, the smart card costs only 30 rupees. For individual premium for the Yeshaswiny scheme is 200 rupees, and the other four schemes are entirely financed by the government. The benefit package mostly covers tertiary hospitalization and maternity care, with limits on the cash disbursed per unit per year per procedure. The annual inpatient benefits vary from about 32,000 to 192,000 rupees per family, and some schemes also cover secondary care but not outpatient care. There is some coverage for transportation, but the limit is about 1,280 rupees.

The government of India had provided coverage to the entire population in the public delivery system for nearly 30 years; however, the facilities and human resources had been limited and inadequate to serve the population needs and meet the standards for accessibility and acceptability. With recent reforms, the population coverage has improved significantly, from 55 million people being covered in 2003 to 375 million in 2014.

However, Garg stressed that the service is limited, covering only

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TABLE 5-1 Financing and Delivery Mechanisms to Cover Informal Workers Presented by Charu Garg on July 30, 2014

Scheme	State/ Year Started	Household Covered/Premiums	Annual Coverage per Household	Delivery – Hospitals Empanelled	Reimbursed in the Last Year (No.)	Implementing Authority
Rashtriya Swasthya Bima Yojana (RSBY)	400 districts across 27 states	37 million below poverty line (BPL) households and recently informal workers	Rs. 30,000 for a family of 5, plus annual transport limit Rs. 1000	11,000	Approx 11 lakhs	MOLE + state nodal agency + insurer
		75%: 25% central and state government; Rs. 30 per beneficiary		30% are public		
Rajiv Aarogyasri	Andhra Pradesh (2007)	23 million Household's annual income below Rs. 75,000	Rs. 2 lakhs (family defined by BPL card)	529	Approx 4 lakhs	Rajiv Aarogyasri Trust
		85% state government		20% are public		
Yeshasvini	Karnataka (2003)	3 million households in a farmer's cooperative	Rs. 2 lakhs per member paying contribution. Secondary and tertiary and discounted medicines	511	73,963	Yeshasvini Coop Farmers Healthcare Trust + TPA
		40–60% of reimbursements by state government + Rs. 200/enrolled				

continued

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TABLE 5-1 Continued

Scheme	State/ Year Started	Household Covered/Premiums	Annual Coverage per Household	Delivery – Hospitals Empanelled	Reimbursed in the Last Year (No.)	Implementing Authority
RSBY-CHIS	Kerala	1.6 million household member of 25 workers welfare board 75%: 25% central and state government; Rs. 30 per beneficiary	Rs. 2 lakhs (family defined by BPL card)	NA	NA	State government + insurer
CM's -CHIS	Tamil Nadu (2011)	13.5 million households earning less than Rs. 72,000 100% budgetary allocations	Rs. 100,000 per family (defined in BPL card), Rs. 50,000 buffer	850 + about 40 diagnostic facilities	NA	State government + insurer

NOTE: CHIS = Comprehensive Health Insurance Scheme; CM's= Chief Minister's; MOLE = Ministry of Labour and Employment; NA = not available; Rs = rupees; TPA =Third Party Administrator.
SOURCE: Presented by Charu Garg on July 30, 2014; data compiled by author from available resources.

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tertiary care and some medicines and diagnostics during hospitalization. There is limited financial protection for keeping individuals and families from falling below the poverty line from health expenses. Many of those who fall below the poverty line because of health expenses do so not because of hospital expenses but rather because of out-of-pocket expenditures for outpatient services and medicines. Garg also said that while there has been increased coverage, utilization has been limited. The barriers to utilization include a lack of knowledge about the availability of services, the stigma associated with certain conditions, and a lack of available facilities and providers.

Garg concluded that coverage has increased for informal sector workers but that the depth of coverage and financial protection is still very low. She suggested that the best way to improve the utilization of health services by informal sector workers, after coverage is increased, is to raise awareness of available services and remove the stigma associated with occupational diseases. On the supply side, risk assessment at the workplace, early screening, and better trained doctors at the first point of contact are required. To improve the benefits package design and better meet the needs of informal sector workers, Garg suggested that more robust data needs to be collected on the population characteristics and disease patterns of informal sector populations based on geographic locations, and more data is needed on the costs of services that are provided. She also stressed that more research needs to be conducted to illuminate the linkages between workers' health and productivity and changes in the gross domestic product.

Mirai Chatterjee of the Self Employed Women's Association (SEWA) also presented ideas for action from India (see Box 5-1).

BOX 5-1
Ideas for Action: Examples from India
Presented by Mirai Chatterjee, SEWA Social Security

Mirai Chatterjee from SEWA Social Security presented several ideas and workable models for supplementing the Indian government's approach to UHC and OHS. The areas in which she focused were community action, tools and equipment for safeguarding health and increasing productivity and income, and financial protection and support related to illness. Chatterjee's ideas for action included

- Community action—Primary health care through local health workers: Example of Lok Swasthya Mandli, People's Health Cooperative

continued

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BOX 5-1 Continued

- Incorporated in 1990, today it has more than 1,400 shareholders, all of them informal workers and all of them women, who are engaged in some way in providing health services.
- Front line health workers are organized to support solidarity, learning, and capacity building.
- Activities include health education, referral services, linkage with public and private providers, occupational health and safety, low cost pharmacies, and a health insurance cooperative.
- Outcomes and impacts have included greater awareness, high cure rates and reduction in default rates from a tuberculosis control program, the availability of drugs at reduced rates, and the training of health workers and educators.

• Low-cost tools and equipment
  - The development of low-cost tools and equipment can affect not only the health and safety of workers but also their productivity and income (see Table 5-2)
  - There were opportunities for partnerships and rich exchanges between technical organizations and workers for the development of effective products.
  - Examples of simple tools that have been developed include modified embroidery frames and lightweight sugar cane sickles designed for female workers.
• Financial protection through insurance cooperative: Example of the National Insurance VimoSEWA Cooperative
  - It was registered under the Multistate Cooperative Act and was the first of its kind in India. It is a cooperative entirely owned, managed, and run by women informal workers. VimoSEWA has been providing insurance services since 1992 by working with insurance companies.
  - Initially there was resistance from the insurance companies, but interest grew as the SEWA membership grew from a small union of 20,000 to hundreds of thousands.
  - The cooperative's establishment provided an opportunity to educate informal workers about insurance and to help them understand insurance as a financial protection instrument.

TABLE 5-2 Impact of Low-Cost Tools on Income Presented by Mirai Chatterjee on July 29, 2014

Occupation	Average Income Before Use of New Tool (Rs./day)	Average Income After Use of New Tool (Rs./day)
Garment workers	50–100	200–300
Kite workers	80–100	150–180
Sugarcane workers	70–100	150–200
Embroidery workers	70–100	150–200
Rag pickers	70–100	150–200

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INDONESIA: THE EFFECTIVENESS OF OCCUPATIONAL HEALTH INTERVENTIONS FOR THE INFORMAL SECTOR AND OPTIONS FOR DELIVERY

Hanifa Denny, Department of Occupational Health and Safety at Diponegoro University, Semarang, Indonesia

Hanifa Denny from Diponegoro University provided an overview of OHS interventions for informal sector workers in Indonesia, their effectiveness, and options for their delivery. She began with an overview of the situation in Indonesia. Indonesia's population of 237 million people has a population density of 323.05 per square mile and is spread out over 17,000 islands. There are approximately 5,000 occupational health posts at the village level (POS UKKs) in Indonesia that promote occupational health as part of an initiative to empower communities through participation. POS UKKs are established where there is both a need and a willingness for volunteerism from workers, including workers in informal sectors, home industries, and small-scale enterprises. The government assists in setting up a POS UKK.

The activities of the POS UKKs are assisted by the community health centers, or PUSKESMASs. Denny noted that Indonesia has nearly 10,000 PUSKESMASs, which offer inpatient or outpatient services or both. Indonesia also has four referral centers specifically for occupational health services that were established as part of a pilot study.

Denny described the OHS government policies in Indonesia. In 2009 a law was passed to ensure coverage of occupational health services for workers in both the formal and informal sectors. In 2005 the scope of the Center for Occupational Health within the Ministry of Health was expanded under the new Directorate of Occupational Health. The annual budget for the Occupational Health Program has increased three-fold since 2005, from US$1.5 million to US$5 million currently. Fifty percent of the budget is for the delivery of occupational health services to informal sector workers. Besides the spending by the central government, a discretionary spending budget has been made available to the provincial health offices. Additionally, local governments contribute some money, although their funding is generally patchy and mostly engaged in pilot projects.

Denny listed several service delivery interventions for occupational health for the informal sector that have occurred in Indonesia:

1. What started as pilot projects for the establishment POS UKKs in 2002 and 2006 has to date resulted in 5,518 operational posts.

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2. A pilot project focused on the establishment of the Center for Occupational Health Services in 2002 has resulted in five operational occupational health services referral centers.
3. Occupational health risk mapping has been done by Directorate of Occupational Health together with some provincial health offices at selected provinces and workplaces, including informal sectors, home industries, and small-scale enterprises.
4. Training volunteers for the POS UKKs (e.g., farmers, craftsmen, fishermen, traditional divers, etc.) is conducted by the Directorate of Occupational Health together with some provincial health offices.
5. Occupational health training for PUSKESMAS personnel has been carried out for 3,000 PUSKESMASs in Indonesia.
6. Training and technical assistance on occupational health has been provided for traditional divers and fishermen at Cilacap, Maluku, Riau Island, Semarang, Seribu Island, and Situbondo.
7. Training on the diagnosis of occupational diseases was delivered and general physicians were recruited to participate.
8. Occupational health guidelines and information education communication materials for informal sectors of specific occupations, such as farmers, traditional fishermen, traditional divers, and footwear workers, have been distributed.
9. Since the enactment of the universal health care program in 2014, medical services in Indonesia have been free for any person who has obtained a Social Security card.

To illustrate the multisectoral nature of OHS, Denny noted that government agencies in sectors other than the health sector are involved, including the ministry of manpower and transmigration, ministry of agriculture, and ministry of industries.

Concerning the sustainability and scaling of OHS services for informal sector workers in Indonesia, Denny said that the primary issues are financing, technical assistance, service delivery, and relationships and partnerships. The success that Indonesia has experienced is based on the government's supervision and assistance for PUSKESMASs, and the PUSKESMASs' assistance to the POS UKKs and outreach programs aimed at improving the skills of workers in workplace hazard identification and solutions.

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SOUTH AFRICA: SERVICES TO WORKERS IN THE INFORMAL ECONOMY

Barry Kistnasamy, Department of Health, South Africa

Barry Kistnasamy from the Department of Health in South Africa described the situation and characteristics of workers in the informal economy in South Africa and also the mix of services and interventions that are available to those workers.

Overall unemployment is high in South Africa, with only 17 million of the 53 million citizens employed. Of the 17 million workers who make up the labor force, 34 percent are informal workers. Thus, Kistnasamy pointed out, South Africa has a smaller percentage of workers who are informal than many other countries in Africa, such as Zambia, where 90 percent of the labor force is informal workers. However, the informal sector in South Africa still accounts for $30 billion, or 7.1 percent, of the South African gross domestic product. The largest portion of the informal economy is classified as retail (41.5 percent), with other significant contributions from transport (18.5 percent), construction (10 percent), and subsistence agriculture (9.3 percent) sectors.

Kistnasamy said that there is a sizeable population of migrant and cross-border workers in South Africa who are acutely vulnerable. Their informal employment is typically as farm workers and domestic workers. Many of the policy pronouncements and the legislative instruments in South Africa cover only workers in the formal economy.

In South Africa there are 15 million individuals who are covered by social security and poverty alleviation measures, such as child support grants, pensions that are means tested, and disability benefits. The key problem that informal workers such as street traders face in South Africa is that although they have a free primary health care service that they can access, they lose money whenever they leave work for health care or other reasons. Unlike the workers in the formal employment, where sick leave is covered by legislation covering basic conditions of employment, a street trader who leaves the job to visit a primary health care center may lose a day's earnings, even though the care itself is free. So, invariably, such workers do not choose to use the system until the onset of a serious illness.

Concerning data on occupational health problems, Kistnasamy said that epidemiological studies are lacking and that workplace hazards are not well understood because there are no inspections of informal workplaces. The occupational health problems are often a combination of occupational hazards and poor living conditions. Poor working practices and conditions include long work hours, widespread failure to maintain

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workplace facilities, the lack of even simple personal protective equipment, the absence of inspection authorities, the lack of an organizational base for support of workers, and the absence of a system for collecting, compiling, and disseminating information. Even if individual workers are aware of hazards and risks, there is little that they can do about the hazards, and they continue to work in risky environments.

Intervention models for addressing the occupational health and safety of informal workers are limited. Kistnasamy noted that the Brazilian and Thai models are examples from which to learn; however, in Africa there are very few models.

Kistnasamy suggested that several elements are needed in order to move forward in implementing effective interventions to address the occupational health and safety needs of workers in the informal economy in South Africa:

- Policy dialogue that is inclusive of political parties, ministries, organized labor, standing committees in parliament, relevant stakeholders, and the workers themselves
- Ongoing discussions at multilateral, regional, national, and technical levels
- An evidence base on the size and scope of the sector, its contributions to the economy, the risks and hazards that workers face, and existing interventions
- Capacity building and training for health professionals
- Surveillance that can create a loop from data to interventions
- A networking strategy that includes discussions with informal workers on agendas for change
- The promotion of safety, health, and environment activities
- Universal coverage and financing for a national health insurance model that covers informal economy workers
- Integration into the primary health care system

SOUTH AFRICA: OCCUPATIONAL HEALTH AND SAFETY: TOWARD THE INCLUSION OF INFORMAL WORKERS

Francie Lund, WIEGO Social Protection

To open her remarks, Francie Lund from Women in Informal Employment: Globalizing and Organizing (WIEGO) Social Protection offered several lessons learned from her experiences and the work of WIEGO in addressing OHS for informal sector workers:

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- Employment is the most important way in which the benefits of economic growth can be shared.
- For poorer people, their own labor is their most valuable asset.
- The health of the worker and health conditions in the workplace are key factors in the quality of informal work.
- Informal workers have little autonomy or control in the places they work.

With these framing comments, Lund discussed efforts aimed toward the inclusion of informal workers in occupational health and safety (OHS). Within the formal sector, OHS is part of the legal obligation of employers, she said. There are inspectors equipped with standards and tools for the identification of problems, and there are clear paths for reporting injuries and diseases, appeal mechanisms for workers and employers, and rules for compensation. By contrast, the efforts by international organizations aimed at establishing OHS for self-employed small businesses and industrial outworkers tend to emphasize self-regulation, placing the responsibility largely with workers themselves. Lund said that WIEGO is attempting to go further in finding ways to extend OHS to informal workers.

Various forces of exclusion prevent informal sector workers from receiving OHS protections and benefits, Lund said, including a lack of recognition as workers and a lack of reliable statistics on informal work in labor force surveys. For example, surveys may ask a household whether an injury has taken place at home, but no distinction is made between work-related injuries and domestic violence–related injuries. Another force of exclusion is the lack of connections between governmental agencies, both vertically (between the national and local levels) and horizontally (between departments at the local level).

Lund listed several barriers to improving work conditions for informal workers. At the government level, resources for OHS are frequently insufficient even to cover the formal workforce. There is also a lack of coordination among departments, often because of a lack of political will rather than costs. Employers, especially those with disguised employment relationships, have no responsibility for the informal places of work or conditions under which producers or service workers work. Within the trade union movement, there is a lack of recognition of informal workers and their organizations. Lund also stressed that the informal workers themselves may be a barrier to improvement of working conditions. Their income is their priority. For example, headload porters are paid per load carried and thus may carry extra loads, which may to lead to injury to back and neck over time. Additionally, the high turnover of workers may mean that informal employers resist paying for health screenings, as

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these are expensive. Furthermore, there is a lack of information among the workers about the consequences of poor work practices.

Lund described a 4-year occupational health project being carried out by WIEGO. The project is investigating the possibilities of an OHS discipline and practice that is more inclusive of informal workers, especially poorer working women. Urban sites in five countries were chosen for the project— Brazil, Ghana, India (two sites), Peru, and Tanzania—and informal workers from multiple sectors (such as street vendors and home-based workers) were included. The project seeks to understand better the risks faced by the different sectors of informal workers, how to modify legal and institutional barriers to inclusion. It is also analyzing whether the most important priorities are legal or resource deficits, and whether improvements could be made through better coordination and by working with organizations of informal workers to shape demands for OHS interventions. The project is building in-country research and organizing capacity in OHS for informal workers, to improve the collection of statistics, to contribute to the development of a module for data collection on OHS for informal workers in labor force surveys, and to contribute to the development and implementation of an expanded or alternative curriculum that integrates OHS for informal workers and work places into mainstream training institutions.

Lund noted that the main activities of the project include establishing partnerships in each country; carrying out research with worker groups on mobility mapping, risks and hazard analysis, and prioritization of problems; performing country-based institutional analysis and mapping of who controls, regulates, trains, and has resources for OHS; instituting policy dialogues at the local government level; and sharing best practices concerning national level policy change.

Lund offered several lessons that have been learned from work on the project over the past 4 years:

- A sectoral approach helps in understanding the challenges to and opportunities for inclusion of informal work and workplaces.
- Municipal infrastructure such as water, sanitation and lighting are vital to workers' health, regardless of workplace.
- There is a need for a coherent, consistent, and supportive stance from local and national authorities.
- There are positive lessons from the active and enduring involvement of organizations of informal workers in health policy development.
- There is a need for greater and expanded support for an ergonomics focus for informal workers and workplaces.

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- There are benefits of integrating OHS into primary health care, but such an action also risks losing the preventive component of OHS.

SOUTH AFRICA AND GHANA: LINKING OCCUPATIONAL HEALTH AND UNIVERSAL HEALTH COVERAGE

Laura Alfers, WIEGO

Laura Alfers described two WIEGO projects that have been conducted over the past 3 years with partners in Ghana and South Africa. She noted that while they are small projects, they illustrate some of the bigger problems with the institutional setup of health systems when it comes to covering informal workers.

Alfers pointed out that Ghana and South Africa have very different labor markets. Ghana has a much higher share of informal employment—more than 90 percent, versus around 33 percent in South Africa. Still, both countries have significant numbers of street and market traders, many of whom are self-employed and do not employ others. The street and market traders who were the focus of the project work in urban public spaces.

In both Ghana and South Africa the move toward universal health coverage has resulted in a move toward national health insurance schemes. Ghana has a national health insurance scheme which has been running since 2003. In South Africa there is a free public health care system, although the quality of its services can be limited. There is also a very strong private health care system in South Africa. Currently, a national health insurance plan for South Africa has been proposed and is in a pilot stage. Alfers said that these reforms address the imbalance between the private and the public sectors.

In Ghana the national health insurance scheme is a version of social health insurance that includes a voluntary component for informal workers to insure themselves. On the invitation of the Ghana Trades Union Congress, WIEGO conducted a small study on the barriers that informal workers face in accessing the scheme. Alfers pointed out that from the results of that study, although the cost of the premiums was a problem, especially for the poorer workers, and an even bigger problem was administrative issues on the ground and how long it took people to get registered.

In the field of occupational health and safety, one common institutional problem is a lack of coordination between the ministry of health and the ministry of labor. When dealing with informal workers working in open public spaces, there are additional layers of complexity—that is, the ministries of local government and, beneath them, the municipality's

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local government, including the departments of environmental health, waste management, and urban infrastructure. Alfers also said that, in the case of street vendors, workplace hazard problems are not limited to neglect in terms of non-provision of basic services to informal workplaces like sanitation and water; the municipal regulations can actively threaten the health and safety of these workers through violent evictions, the confiscations of goods, and the mental stress that street traders and market traders go through on a daily basis, knowing that they are constantly under threat from municipal regulation.

Alfers described the Accra Health and Safety Platform, which was started in Ghana in 2010. Its activities focus on building a platform for informal workers to engage with municipal institutions, including building the capacity of worker organizations so that they will be able to articulate their problems and concerns appropriately and in a strategic manner. The results of the engagements with local government have included the establishment of waste management committees, the provision of fire extinguishers, and the clearing of drains. Alfers noted that, through the Accra Health and Safety Platform, they learned that it takes many interactions on a constant basis to implement reforms. One of WIEGO's goals is to institutionalize the platform for informal workers who, unlike formal workers, do not have bargaining councils and other platforms with which to communicate with employers and with governments.

In 2014, with a grant from The Rockefeller Center Centennial Innovation Fund, WIEGO adapted the Accra program to implement a project in Durban, South Africa. In collaboration with a local nongovernmental organization, Asiye eTafuleni, WIEGO helped to develop the Phephanathi Platform. The platform provides a basic institutional architectural framework in which a range of health interventions, including occupational health interventions, public health interventions, and urban health interventions, can be embedded. Alfers noted that at the center of the project is the Phephanathi Health and Risk Management Committee, made up of 12 elected traders from each of the markets in Warwick Junction in Durban. Each market has its own association of arbitrators, and they are trained now in basic first aid and fire safety. Municipal officials, local university occupation and environmental health departments, and public health officials also have been invited to join the platform. The committee helps to bridge the institutional divides among the national health services and the municipal health services. The platform also provides training in fire safety, first aid, and basic understanding of workplace hazards and in hazard mapping and the urban design process, including experimenting with crowd mapping technology and developing basic emergency plans and installing basic infrastructure.

In the future, the goals for Phephanathi Phase 2 are to partner with

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universities that have specific knowledge on ergonomics, occupational hygiene, and workers' health education; to facilitate health and hygiene mentorship systems among food vendors; to run health diagnostics camps; and to think about further urban design solutions.

THAILAND: UNIVERSAL HEALTH COVERAGE SYSTEM AND INFORMAL WORKERS

Somsak Chunharas, National Health Foundation, Thailand

Somsak Chunharas from the National Health Foundation in Thailand provided an overview of the universal coverage system in Thailand and how it applies to the informal workforce. In Thailand total health expenditures account for 3.9 percent of the gross domestic product, or US$194 per capita. However, Chunharas said that in the Thai experience, it is important to recognize that health reform did not start with financing but rather with system development. With the opportunity to develop the system gradually, Thailand managed to create a system at various levels from the grassroots level upward. The system includes a mix of private and public providers, with the private sector accounting for about 30 percent of all providers.

Chunharas mentioned several key historical developments in health financing in Thailand. Before 1975, the government had provided health security to civil servants on a retrospective reimbursement basis. Then, starting in 1975, the government provided indigent cards for the poor that granted free health services at public sector facilities. In 1990 social security was established, with health insurance as an integral component for formal sector workers. With the introduction of these new policies, coverage steadily increased. However, by 2001 around 25 percent of the population was still without any health security. At this time, the indigent cards for the poor were discontinued, and a general tax was instituted to start a new universal coverage system to cover those who were without coverage, including those previously covered by the indigent cards.

When Thailand started introducing reforms in 1975, the government had limited experience in managing money on an insurance base. The civil service medical benefits scheme that predated the expanded coverage reforms provided a starting point, Chunharas said. He noted that the government began monitoring the scheme and found that its spending had been excessive, partly because of the retrospective reimbursement on a fee-for-service basis. In 1990 the government started a social security system with the first per capita prospective payment financing model, and then it gradually moved toward a participatory policy process. Currently there are three systems working together: universal coverage, the Social

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Security Scheme (SSS), and the Civil Servant Medical Benefit Scheme (CSMBS), with 75 percent of the population covered by universal coverage, and a total of 99.87 percent of the population covered by one of the systems. In the movement toward universal coverage, government financing through taxation has increased substantially, from US$25 per capita in 2000 to US$45 per capita in 2013 for the outpatient services; inpatient services have also been increasing.

In the benefit package there has been a continuous evolution of what is covered, as can be seen in Figure 5-1. The changes and additions to the benefits package have resulted from continuous review and revisions based on cost–benefit analysis, assessments of new technologies, and lobbying by advocacy and other interested groups. The system includes separate funds for specifically recognized special conditions, such as HIV treatment and renal dialysis. There is also a separate fund for prevention and health promotion.

Thailand created a separate organization within the ministry of public health to serve as the purchaser; this is the National Health Security

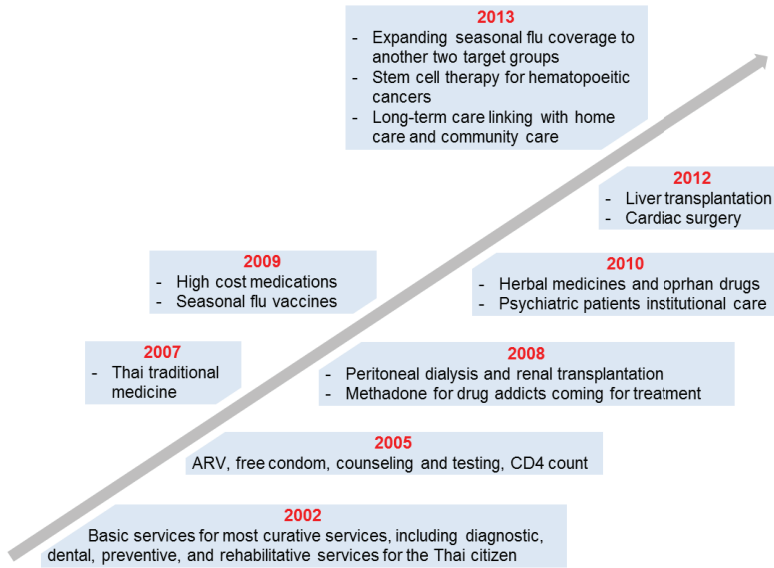

FIGURE 5-1 Benefits package evolution in Thailand.
NOTE: ARV = antiretroviral; CD4 = cluster of differentiation 4.
SOURCES: Somsak Chunharas presentation to workshop, July 30, 2014; data from National Health Security Office.

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Office. Within the system, at the community level in rural areas the primary care units are used as the key provider. District or community hospitals are given funds to pay the primary care providers that are providing service linkage and referrals to the hospitals. Furthermore, Chunharas said, there are modest community funds which provide the community with the opportunity to work with the purchaser and the providers to address the social determinants of health.

To improve quality of care within the system, Chunharas said, Thailand uses an accreditation system for service facilities and has seen steady improvements. Satisfaction differs between the users and the providers. Survey data show that satisfaction among the general population has been quite high since the beginning of universal coverage reforms. Among providers, in the beginning there were a number of concerns about increased workload and other changes to the provider side. Over time, provider dissatisfaction has decreased, but not significantly. Public spending has increased from 45 percent to 65 percent of total health expenditures. There are efforts in the government to cap public spending at 50 percent; however, there are debates based on budget projections and spending concerning the need for such caps. There is evidence that universal coverage has prevented poverty caused by health expenditures (see Figure 5-2).

Chunharas said that while universal health coverage in Thailand has helped to ensure that almost all informal workers in Thailand have health insurance, the preventive and promotive dimension has not been robust. As described below in the presentation from Orraphan Untimanon from the Ministry of Health in Thailand, some OHS interventions by the government and by nongovernment organizations have been piloted on a small scale and have shown positive outcomes, but the resources for such interventions are limited. Chunharas suggested exploring a separate fund for preventive and promotive health efforts among informal workers. With the existence of community funds and the increasing roles of the local government, Chunharas said, there are opportunities for reorienting the universal coverage funds to increase the motivation and capability of the health system to better address avoidable health risks of informal workers and to avoid a health service infrastructure specifically for informal workers.

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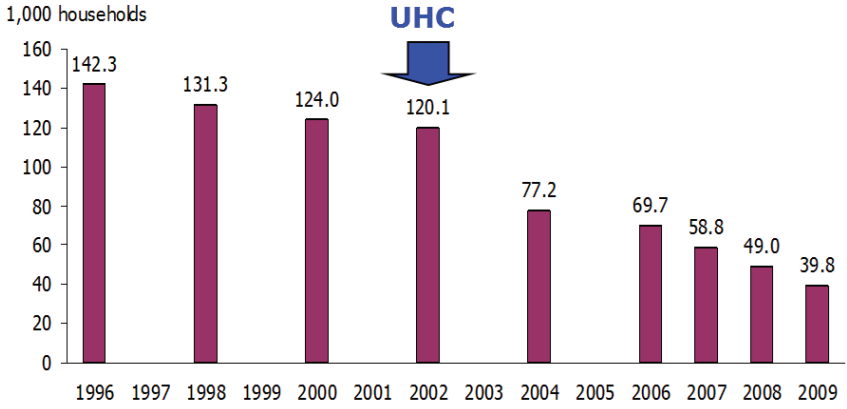

FIGURE 5-2 Universal health coverage (UHC) in Thailand, 1996–2009.
SOURCES: Somsak Chunharas presentation to workshop, July 30, 2015; adapted from Tangcharoensathien et al., 2014.

THAILAND: OCCUPATIONAL HEALTH SERVICES DELIVERY FOR INFORMAL WORKERS AND FINANCIAL RESOURCES

Orrapan Untimanon, Ministry of Health, Thailand

Orrapan Untimanon from the Ministry of Health in Thailand described access to occupational health services for informal workers in that country. Thailand has a total population of 65.8 million, with 39 million of them employed. Around 64.2 percent of the workforce is in the informal sector. Within the informal sector, workers are divided into three groups: agricultural, trade and services, and manufacturing, with the agricultural group representing the largest percentage (61.3 percent).

Within the Thai health system, Untimanon said, most occupational health services are provided at the subdistrict level through primary care units. A successful example of OHS services has been the farmer clinic project, which has been expanded nationwide through primary care units that have experience with OHS. The clinics are structured to meet the needs of the target community, and dissemination efforts are made to inform workers about the clinic and when it will be available. At the clinic, a worker's health problems are assessed, and a determination is made as to whether the specific problems are occupational in nature or from an underlying disease. When a problem is determined to be occupation-related, treatment is provided. Common occupational diagnoses include contact dermatitis and musculoskeletal disorder, and the

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treatments include traditional Thai massage and drugs. Health education is provided to the farmers as well. Diagnoses of occupational diseases are recorded in an existing central data system. For proactive OHS, the clinic collaborates with relevant agencies to conduct risk management for occupational diseases or injury prevention.

Around 10 percent of the primary care units in Thailand have participated in the farmer clinic project. Most of these primary care units were able to provide occupational health services as described above; however, since the clinics were set up on a temporary basis or open only 1 or 2 days per week, many agricultural workers were not reached. Untimanon suggested that fully integrating OHS into primary care could overcome this barrier to access and availability. Other limitations of the clinic intervention were that the primary care unit staff were limited in their ability to make early diagnoses of occupational disease and that some of the data collected were incomplete. Furthermore, while common hazards related to health problems have been identified, risk management needs to be developed further.

Budgetarily, OHS is included as a very small percentage of the allocations under universal care for prevention and promotion, which makes up 10 percent of the total allocation per person and includes many other prevention and promotion interventions. Thus, Untimanon suggested that the specification of OHS intervention in a benefit package of universal care will be crucial to strengthen OHS for informal workers.

THAILAND: EXPERIENCES FROM A PILOT PROJECT ON OCCUPATIONAL SAFETY AND HEALTH PROMOTION FOR INFORMAL WORKERS

Poonsap Tulaphan, HomeNet Thailand

Poonsap Tulaphan from HomeNet Thailand described a government pilot project for an occupational health scheme for informal workers in Thailand.

To provide a perspective on the condition of informal workers' health in Thailand, Tulaphan shared some data from health checkups of 416 home-based workers, including doll makers, sweetened fish producers, spirit house makers, and cleaners of fish sauce containers who worked in one district of Ratchaburi Province in 2009 and 2010. Thirty to 40 percent of the workers suffered from high blood pressure, and 25 percent suffered from high blood sugar levels. In terms of work-related problems, 50 to 60 percent suffered from chronic muscle pain such as back pain or leg pain. Approximately 60 percent suffered from blurred and distorted vision or astigmatism, while 10 percent—particularly among doll makers,

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many of whom are exposed to noise—suffered from hearing impairment. Tulaphan said that the national health system in Thailand covers medical treatment for informal workers as well as health promotion and prevention activities; still, however, the informal workers' knowledge concerning work-related diseases and preventive measures is generally limited.

In 2001, with support from the Health System Research Institute, HomeNet Thailand studied occupational safety and health (OSH) problems among six producer groups, including workers who performed gem cutting, bronze making, fishing net finishing, traditional cloth weaving, garment sewing and tomato seed production. Then in 2002, with the International Labour Organization and Mahidol University, HomeNet Thailand developed WISH (Work Improvement for Safe Home) manuals for training home-based workers. From 2004 to 2007, with support from the Health Promotion Foundation, HomeNet Thailand promoted OSH among home-based workers in 17 provinces in Thailand. In 2009 and 2010, with support from WIEGO, HomeNet Thailand was able to document lessons learned from their OSH promotion experience. At present with support from the National Health Security Office via a scheme called Promotion and Prevention for workers, HomeNet Thailand is implementing a pilot project to support OSH promotion. The objectives for the pilot are to provide OSH knowledge to and promote prevention activities among informal workers, to support informal workers in accessing the local health community fund, and to facilitate the implementation of OSH promotion activities by primary care units.

Tulaphan described HomeNet Thailand's work process. It starts by providing training on OSH knowledge to service providers at primary care units. Next, it sets up an OSH working committee which involves all of the stakeholders, including the hospitals, primary care units, subdistrict offices, small enterprise employers, and home-based workers organizations. It conducts a survey on the working environments for risk assessment and, from the assessment date, develops the interventions for home-based workers. These interventions can include health checkups, training, improvements to the working environment, and establishing safety rules. OSH clinic will set up at the hospital level.

At the same time, HomeNet works to identify OSH volunteers; often they are leaders of the home-based workers groups or community health workers volunteers. The volunteers help follow up on the implementation of interventions and assist in seeing how there interventions are affecting the health and behavior of the target populations.

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Tulaphan said that the following results have been observed after the second year of the pilot:

- About 1,000 informal workers gained knowledge on OSH and have changed their behavior and improved their working environment to ensure greater occupational health and safety.
- Five hospitals are actively collaborating with subdistrict offices to provide OSH knowledge and skills to home-based workers.
- Other hospitals have come up against limitations to promoting OSH due to their management policy or a lack of interest.
- Only one hospital has the capacity to work as a node to support other hospitals and primary care units.
- Subdistrict offices have exhibited an increasing interest in working with the working-age population.

Regarding constraints, Tulaphan said that most hospitals lack staff with sufficient knowledge and skills on OSH promotion and there is no incentive to promote OSH through assessment standards for primary care units. Health practitioners normally have a high workload, and OSH is often dismissed. Furthermore, those implementing the local health fund frequently do not have sufficient knowledge or experience in promoting the OSH of informal workers. While the HomeNet project is aimed at facilitating the development of qualified staff and encouraging budget allocations for integrating OSH promotion into regular prevention activities, some hospitals mistakenly assumed that the project itself would provide the budget. Additionally, the scattered locations of the target areas within the pilot program required significantly greater resources than if the areas had been more geographically convenient.

Based on the lessons learned from the first 2 years, HomeNet has adjusted its plan for year 3. Tulaphan said that the major focuses are

- investing in a hospital that can potentially become a node with the capability to provide support, particularly in terms of personnel capacity, knowledge, and information system that are favorable for OSH promotion;
- raising awareness and encouraging participation of the National Health Security Office (NHSO) at zone level to address the issue and support OSH promotion by encouraging their involvement in the project; and
- disseminating knowledge and experience gained from the project to NHSO from other zones.

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ZAMBIA: PUBLIC–PRIVATE PARTNERSHIPS IN HEALTH

Karen Sichinga, Churches Health Association of Zambia

Karen Sichinga from the Churches Health Association of Zambia (CHAZ) discussed health services in Zambia with an emphasis on the partnership that exists between CHAZ and the Zambian government to provide health services. Before describing the health services, Sichinga provided some country context. Zambia is geographically large but has a population of only 14 million people. It is a landlocked country with eight bordering neighbors, which has major implications for public health and disease control. An epidemic in any bordering countries affects Zambia. Furthermore, Zambia has hosted refugee populations from neighboring countries at different times since the country's independence from the British in 1964.

The vision behind Zambia's national health strategy is of a nation of healthy and productive people with a health system based on the principles of primary health care, equity of access, affordability, cost-effectiveness, accountability, partnerships, decentralization, and leadership. Sichinga stressed that the main emphasis of the strategy is on universal coverage, including "equity of access to cost-effective quality health services as close to the family as possible."

Sichinga said that developing a national strategy requires the consideration of trends in both socioeconomic and health indicators within the country, and she shared some of the relevant indicators from Zambia, including targets that have been set for 2015 (see Table 5-3).

TABLE 5-3 Selected Indicators for Zambia

Indicator	2000	2007	2010	2015 Target
Socioeconomic indicators				
1. Population (millions)	9.9	12.09	13.09	15.5
2. Extreme poverty (%)	46	51	42.3	29
3. GDP per capita (US$)	944	1233	1508	1951
Health indicators				
4. New malaria cases (per 1,000)	388	358	330	< 255
5. HIV prevalence rate (%)	15.6	14.3	12.7	< 15.6
6. Under-5 mortality rate (per 1,000)	168	119	137.6	63.6
7. Maternal mortality rate (per 100,000)	729	591.2	483	162.3

NOTE: GDP = gross domestic product; IMF = International Monetary Fund ; MDG = Millennium Development Goal ; UNDP = United Nations Development Programme.
SOURCE: Karen Sichinga presentation to workshop, July 30, 2014.
DATA SOURCES: Indicators 1 and 3: IMF World Economic Outlook Database, April 2014. Indicators 2, 4, 5, 6, and 7: Zambia MDGs Progress Report 2013, UNDP.

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Sichinga listed several key determinants of health in Zambia based on the Zambian government's National Health Policy (2013), which, she noted, are similar to those in many low- and medium-income countries:

- **Environment:** 80 percent of the health conditions in patients seen at health institutions are related to poor water supply, inadequate sanitation, food safety, housing and amenities, and climate change.
- **Nutrition:** Lack of access to good nutrition contributes significantly to mortality and morbidity in Zambia. Malnutrition underlies up 52 percent of all under-5 deaths. Stunting rate is at 45 percent (CSO et al., 2009).
- **Education and literacy:** Education equips people with knowledge and skills for problem solving and the ability to access and understand information on health, and it can help them to control some of their life circumstances. Literacy in Zambia is estimated at 72 percent—64 percent for women and 82 percent for men, with lower rates in rural areas (CSO et al., 2009).
- **Occupational health:** Occupational disability, morbidity, and mortality are also major problems in Zambia. Occupation-related injuries affect productivity and the social and physical well-being of workers and their families.

In its attempts to address the determinants of health, provide universal coverage that is consistent with the principles in its national health strategy, and improve its health and socioeconomic indicators, Zambia has faced significant challenges from the limitations on its health care system capacity and resources. Thus, Zambia has embraced partnerships for health. The partners who make up the national health system in Zambia include the government, the church, private corporations, nongovernmental organizations (NGOs), and traditional health practitioners. Sichinga said that these partnerships for health in Zambia have existed since Zambia's independence in 1964. She added that church health services are private and nonprofit and are responsible for 30 percent of health services in the country, making the church the second largest health care provider (after the Zambian government). In its partnerships, the government provides leadership and guidance for private partners to operate.

Sichinga said that private corporations fill critical and commercially viable gaps. Partnerships have increased options, reduced congestion at public health facilities, strengthened the efficiency and quality of services in the system, created backup options, and pooled comparative advantages. However, she cautioned, there are areas where partnerships have not worked well. Policy changes within a partnering corporation or NGO

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have led to the misalignment of expectations between the government and the private partners. Another challenge is sustainability. Sometimes a private partner, such as a corporation, NGO, or the church, will start a program or facility and then run out of the resources needed to maintain it. The expectation then may be for the government to take over the operations, but that is not always feasible. To address sustainability issues, CHAZ and other, similar organizations are encouraging dialogue with the government and the district health offices from the beginning of an initiative so that plans for sustainability will include all partners and be transparent. Sichinga concluded by saying that "public–private partnerships are the only way to sustainable development particularly in resource constrained countries like Zambia. PPPs [public–private partnerships] are making a difference in Zambia."

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6

Closing Remarks

The workshop closed with a discussion among the individual workshop speakers and participants, facilitated by workshop chair Clarion Johnson and planning committee member Kathy Taylor, on suggestions for how to make progress on achieving universal health coverage and occupational health and safety for informal sector workers in developing countries. To open the discussion on the way forward, Johnson offered a cautionary note: Do not over-rely on the private sector. As is apparent in the mix of members that make up the National Academies of Sciences, Engineering, and Medicine's Forum on Public–Private Partnerships for Global Health and Safety, there are many different actors and stakeholders from the public and private sectors who can play a role. Throughout the workshop, many speakers and forum members stressed addressing the issue from the perspective of grassroots, small-scale, innovative approaches rather than looking only at large, top-down initiatives. Johnson suggested that within this framework, another aspect to consider is the sharing of resources, such as mentorship, technical assistance, and business plan development. In turning to the speakers to provide their remarks, Johnson asked each of them to focus on what he or she thought could be delivered and reproduced to lead to progress moving forward (see Box 6-1).

Yuka Ujita from the International Labour Organization (ILO) said that ILO has eight critical areas of focus for 2015, and one of them is the formalization of the informal economy. There are two dimensions to this focus area: the formalization of the current informal economy, and the

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BOX 6-1
Highlights and Main Points Made by Individual Speakers

- Focus on achieving decent working and employment conditions in addition to health and safety for informal workers. (Ujita)
- Partner with the private sector to provide safety and the health services, including training for workers and employers in risk assessment and health hazard assessment and the development of low-cost tools and solutions. (Chatterjee, Ujita)
- Explore the promise of technology-based solutions for improving access to coverage for informal workers. (Emrey)
- Focus on building metrics and measures that better capture the informal sector and informal workers. (Emrey, Rodriguez-Guzman, Taylor)
- Learn more about promising grassroots solutions for universal health care and occupational health and safety, particularly solutions that are low-cost and low-technology. (Chatterjee, Emrey, Ujita)
- Provide opportunities for more convening on the topic and more sharing of experiences and solutions among low- and medium-income countries. (Chatterjee, Chen, Rodriguez-Guzman)
- Open dialogue within the global employer community about the changing world of work, informal workers, and accountability. (Friedman)

prevention of current formal economic workers moving to the informal economy. ILO has prioritized this issue not only because it is concerned with the safety and health of informal sector workers but also because it wishes to address the indecent working and employment conditions that these workers often experience.

Ujita also commented that through the workshop she had been inspired by the role that public–private partnerships (PPPs) can serve, and she offered a specific proposal for how PPPs could contribute to occupational safety and health services. The health and safety capacity in such places as Southeast Asia and the Caribbean is quite low, she noted. To build this capacity, she suggested partnerships to provide safety and the health services, including training for workers and employers in risk assessment and health hazard assessment, which could enhance the capacity of the government itself.

Robert Emrey from the U.S. Agency for International Development (USAID) said that while USAID has a major focus on addressing universal health care (UHC), informal sector workers are rarely part of the discussion. He suggested some promising areas where there could be opportunities to address these workers' needs in terms of UHC. Recent technology-based solutions for coverage, such as those that use mobile

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technology, are promising for reaching informal sector workers, he said. Access to data through mobile technology can provide information and health education. Mobile technology also has the opportunity to address accountability and transparency in financing. Concerning metrics, Emrey said that USAID and its partners have a long legacy of investments related to measurement. He suggested that there is now opportunity to focus on developing metrics that better capture informal sector workers. Concerning service delivery, Emrey said that he had been impressed throughout the workshop with the community-level activities that were described and that he was interested in learning more about how these activities could address community and municipal leadership. Progress has been made in a number of countries where the challenges are huge, and the way in which that work has moved forward is a grassroots activity.

Mirai Chatterjee from the Self Employed Women's Association (SEWA) in India said that throughout the workshop one thing that struck her is that in country after country the world of work has changed dramatically. It is a wakeup call for those in the health sector to reorient their lenses, strategies, and services to fit the world of work where the working poor struggle every day. She also noted that many countries, particularly developing countries, have done substantial work on universal health coverage and occupational health and safety but that there is much to learn. These efforts have not necessarily been high tech or very resource intensive. It does not always require huge investments to make a huge difference to working people. She also said that she was very interested to hear during the workshop about the willingness of industry to engage in going beyond covering its own employees and contributing to the well-being of countries across borders. She pointed out there are corporations that are already doing this by focusing on their supply chain, and these examples should be highlighted.

Concerning partnerships, Chatterjee suggested several potential opportunities: support for low-cost or no-cost tools and processes, mobile clinics and diagnostic camps for early detection and screening, and research and metrics development for occupational health and safety (OHS). She also suggested adding a fourth P to PPPs—for peoples' organizations.

To continue to move forward and accelerate progress, Chatterjee suggested convening similar workshops in different regions and countries to further the dialogue and sharing among stakeholders. Marty Chen endorsed this idea and added that two different types of meetings could be useful: smaller, more technical meetings centered on occupational health and safety, and workshops like this one in each developing region, with the same mix of participants across disciplines, sectors, and countries.

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Lorna Friedman from Mercer picked up on Chatterjee's reference to the changing world of work. Global employers have an obligation to ensure the safety of the workplace, she said, and there has been much success in their efforts to do so. However, as the workplace changes, as an outsourcer becomes an informal worker, where is that border, and what is the accountability? She said that there needs to be a major dialogue within the global employer community to address this issue. She added that the opportunities for entrepreneurial ideas to address this issue through innovative, low-cost solutions and tools are inspiring. There is a model that employers and investors use in the United States to take people with innovative ideas and link them with mentors and capital. It has been a successful model and is an opportunity for accelerating progress. On metrics, Friedman stressed the importance of including business metrics in any conversation on UHC and OHS so that the value to the economy of productivity and health can become part of the dialogue.

Julietta Rodriguez-Guzman from the Pan American Health Organization pointed out the number of incredible experiences, practices, and interventions that are going on throughout the world, several of which were highlighted at the workshop. They illustrate the importance of working at the local level and are a call to build metrics focused on the local level. She also said that networking has shown to be an effective tool for the sharing, exchanging, and transferring of not only knowledge but also technology and practices. To make progress in the future, she stressed, it will be important to strengthen the field of occupational health within medicine and across the health disciplines.

Somsak Chunharas said that in the area of UHC and OHS for informal workers, there are two important issues related to health system development: ensuring that countries with UHC include OHS as an integral part of their benefit package, and the role of the health sector, regardless of whether there is UHC, in raising awareness among multiple actors, including the ministry of labor and the private sector, about the need for OHS aiming at protecting the health of informal workers.

Kathy Taylor from the University of Notre Dame pointed out that within the current draft of the Sustainable Development Goals (SDGs) 2015, there is no goal that includes health system strengthening of UHC as one of the pillars. As the shift is made from the Millennium Development Goals toward the SDGs to provide a roadmap for the global community, national governments, and funding agencies, she suggested that it will be important to recognize the role of health system strengthening. The draft SDGs include specific conditions such as maternal health, HIV/AIDS, and noncommunicable diseases. She expressed her concern that focusing on condition-specific goals rather than on the system may hinder progress in global health.

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In picking up on the suggestion by several speakers to focus on metrics, Taylor stressed the role that universities can play in developing metrics, conducting research, and sharing data to contribute to an iterative process from data to analysis to implementation. Johnson added that within the safety group there exists a standard taxonomy and database of resources that could serve as a starting point for developing a parallel system for the occupational health community. Chen suggested that there may be an opportunity for SEWA to convene exposure dialogues concerning occupational health and safety. In an exposure dialogue, a select group of people spend 2 or 3 days and nights with a working poor person in the informal economy, living with and working alongside him or her. The individuals apply theoretic frameworks, systems, models, and assumptions from their field of practice to the reality of their experience. SEWA has already convened such dialogues for economists and human rights professionals, and there could be an opportunity to do the same for the OHS community.

Chen also suggested that one opportunity for moving the dialogue forward on global employers and their supply chains could lie with engaging with the Ethical Trade Initiative in England. The initiative brings together worker groups, corporations, and government for dialogue and currently has a work group on home-based workers in supply chains.

Simon Bland from UNAIDS provided some comments on the draft SDGs. Over the past 18 months, he said, the world has come together to debate the 17 goals that are included. Within them there are 169 targets, and there will be 2,000 indicators. More could probably be added, but it is already a long list, and all of what is included is highly important. The challenge will be translating it into priorities. Concerning the point of moving from single issues to addressing the entire system, he said there is clearly a need for integrated service delivery and taking issues out of isolation, but it will be challenging. Figuring out how to create institutional change and reform will also be challenging. Concerning UHC, he said, covering the remaining sector of the population is hard for a reason. Geographic remoteness and political isolation both play a role. Leapfrogging legacy technologies could offer an opportunity to lower costs and expand coverage. There should be a focus on partnerships that reduce the costs of interventions, create better point-of-care diagnostics, and are market shaping for lower-cost therapies. Bland said that the challenge that he was taking from the workshop was how to find innovations using both the public and private sector to drive costs down in order to expand coverage and packages of benefits. There are thousands of innovations out there, he said, and he has not figured out how to sift through them, but the ideas from the workshop are really inspiring and exciting.

Ambassador John Lange from the United Nations Foundation com-

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mented that many stakeholders in the SDGs dialogue were at the workshop and now that they have participated in the meeting and learned so much about the informal sector workforce, it is incumbent on them to introduce the needs of the informal workforce into the SDGs discussions.

A PERSPECTIVE FROM THE ROCKEFELLER FOUNDATION

Michael Myers, The Rockefeller Foundation

Michael Myers from The Rockefeller Foundation described how the foundation came to have an interest in the health, safety, and coverage of informal workers in developing countries. When The Rockefeller Foundation was founded in 1913, the first issue it explored was health, and health issues have continued to be at the core of the foundation's work. The foundation participated in the growth of the field of public health, including the establishment of the Johns Hopkins Bloomberg School of Public Health and other public health schools around the world. The foundation has been engaged in the science of health. Between the foundation and its grantees, more than 200 Nobel Prizes have been achieved. In addition to the sciences, the foundation has been involved in tackling specific diseases around the world, from yellow fever to HIV/AIDS. In the past couple of decades, the foundation has also focused on health systems. Through this work, the foundation has been involved in a joint learning network that is now in nine countries and that facilitates peer-to-peer learning and sharing on issues such as costing manuals and financing schemes.

One of the issues that has been raised within the context of health systems is equity and universal health coverage. UHC is inclusive of all, including informal populations. While the inclusion of informal populations is often thought of as a "last mile" question within UHC, this is not the case when the informal sector makes up the majority of a country, as it often does in developing countries. The foundation is seeking to figure out how to connect people in informal sectors with the formal health system and ensuring that it meets their needs.

The foundation first started thinking about informal workers in the context of what their needs are as workers; however, its approach has evolved to consider a fuller range of what their needs are as individuals within society and not just as workers. There is recognition that these are people who have aspirations and families, who are highly networked, who are entrepreneurial, and who have places where they congregate and enjoy each other's company. With that perspective, the foundation is addressing how to meet these people's health needs beyond the context of the workplace or a clinic. For example, what can be done for people in the marketplace in Durban, South Africa? As people—largely informal

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workers and their families—are criss-crossing in the market, are there possibilities to address and advance the health of this population?

Myers said that this thinking led to an approach that The Rockefeller Foundation is considering which has been reinforced by the discussions at the workshop. Throughout the workshop, ongoing solutions were discussed that involved community groups, women's groups, technology, or ministries of health. Perhaps there are creative ways of stitching these initiatives together in new ways to achieve even greater benefits for informal workers and informal communities. Myers suggested that rethinking how to organize these initiatives and stakeholders is a type of recombinant innovation, taking existing elements and combining them into new and more effective ways that give greater power and greater results to what we are doing. The Rockefeller Foundation is exploring opportunities for recombinant innovation for meeting the health needs of informal workers.

Myers illustrated this approach with an example. Imagine a market in Durban, South Africa, where there is a trusted local organization working with informal workers in the market. Imagine that the organization is trained to convey health information that is of value to the population and that the people themselves view their own health as an asset. Without good health, they do not have a livelihood. Imagine that there is a cell phone company looking for business within the informal community that might be willing to add some element to its mobile platform that helps stitch together that community. Imagine using the persuasive powers of the stakeholders who have been a part of this workshop to get the health ministry to locate a clinic near that marketplace which brings the needed services to the workers where they are. Imagine a recombination of existing elements in these creative ways to be a possible model, if it works, to try to replicate in different parts of the world to help solve this last-mile question for universal health coverage. Myers stressed that this vision is what he has found so encouraging about the workshop discussions. The foundation is moving forward to explore this particular model, and much of what was shared during the workshop will inform those actions and the steps.

In closing, Myers stressed the importance of discussions like those at the workshop for linking individuals who are working to create solutions at the local level with each other and connecting the discussions to policy questions at the same time. When examining local approaches, the foundation is also committed to looking at the big policy issues and reforms that are necessary to make such approaches effective and sustainable going forward.

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Appendix A

Workshop Agenda

Approaches to Universal Health Coverage and Occupational Health and Safety for the Informal Workforce in Developing Countries
July 29–30, 2014

The National Academies of Sciences, Engineering, and Medicine's Forum on Public–Private Partnerships for Global Health and Safety (PPP Forum) has been established to illuminate opportunities that strengthen the role of public–private partnerships (PPPs) in meeting the health and safety needs of individuals and communities around the globe.

Approach: The workshop will examine the approaches, successes and challenges, and lessons learned in a purposeful selection of countries (primarily Brazil, Ghana, India, South Africa, and Thailand) to explore the topics of universal health coverage and occupational health and safety for the informal workforce in developing countries. With multisectoral presentations, exploration of the countries' experiences may identify innovative approaches or opportunities for partnerships to improve equitable access to quality services to meet the needs of the informal workforce in resource-constrained countries. Many of the presentations also will describe the roles of the existing PPPs that are engaged in promoting universal health coverage and meeting the occupational health and safety needs for informal workers.

Workshop goal: To illuminate best practices and lessons learned for the informal workforce in developing countries: (1) in the financing of health care; (2) with respect to health care delivery models that are espe-

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cially suitable to meet the population's needs; and (3) for a variety of occupational health issues, including preventing or mitigating hazardous risks as well as the costs of providing medical and rehabilitation services and other benefits to various types of workers within this population. These best practices and lessons learned may be useful for stakeholders to move the discussions, policies, regulatory frameworks, political contexts, and mechanisms (including enhanced or new PPPs) forward to increase equitable access to quality health services without financial hardship for the informal workforce or workers in the informal sector, including prevention, curative, and rehabilitation services for injuries and illness due to occupational hazard exposure.

Context: Achieving universal access to quality care is an urgent global health priority today. Most of the world achieves this through a growing and dominant mix of public- and private-sector health care systems. Health systems in most low- and middle-income countries (LMICs) are evolving to increasingly use the private sector (e.g., health providers from different parts of the private sector, corporations, social enterprises, and philanthropy) because the public sector lacks the infrastructure and staff to meet all health care needs. With growing individual assets available for private-sector expenditure, patients often seek better access to technology, staff, and medicines. However, in the developing world about 40 to 70 percent of private sector expenditures are out of pocket. With the expected increase in the overall fraction of private-sector–provided care, these expenditures can be financially catastrophic for individuals in the informal workforce.

Occupational accidents, diseases, and fatalities create significant burdens globally in terms of human suffering and economic costs, which are estimated to be roughly 4 percent of gross national product globally. Occupational health and safety services, initially designed during the advent of industrialization, prevent and treat acute and chronic illness as well as injuries among the working population. The field is evolving in response to social, political, economic, and technological changes globally, but services are usually private entities and continue to be primarily financed by the employers and provide advice and carry out different interventions to protect workers from occupational health and safety risks. In the global workforce of approximately 3 billion people, only 10 to 15 percent are estimated to have some type of access to occupational health services. The informal workforce is growing worldwide, and meeting its occupational health needs rests on the capabilities of the general health care system. General health care practitioners often lack the skills and knowledge to address work-related health needs, which is one of the primary limitations to meeting the needs in most countries, although there are some encouraging examples for capacity enhancement and

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building. In countries where the enforcement of occupational health and safety rules relies on labor inspection, such inspections are usually confined to formal workplaces and employment relations. In contrast, there are examples of public health systems in several developing countries that rely on enforcement of occupational health through public health law that is not conditioned by the nature of employment relations. Financing for universal quality care, as well as the models to best deliver care, including occupational health and safety services, often require innovative solutions, especially for the large fraction of workers who occupy what is variably defined as the informal sector in LMICs.

DAY 1 — JULY 29, 2014

8:30 a.m.	**Registration (continental breakfast provided)**
9:15 a.m.	**Welcome and Introductions** Patrick Kelley, *Director, Boards on Global Health and African Sciences Academies Development, National Academies of Sciences, Engineering, and Medicine*
9:30 a.m.	**Opening Remarks**
9:30 a.m.	Victor Dzau, *President, National Academy of Medicine*
9:45 a.m.	Clarion Johnson, *Co-Chair of PPP Forum and Chair of Workshop Planning Committee*
	Keynote Addresses
10:00 a.m.	Robert Emrey, *U.S. Agency for International Development*
10:45 a.m.	Mirai Chatterjee, *Self Employed Women's Association (India) (SEWA)*
11:30 a.m.	**BREAK**

I. Universal Health Coverage and Occupational Health and Safety Issues for the Informal Workforce

There are recommended packages of basic services for both universal health coverage and occupational health and safety, but when they are offered, it is usually though a mixed system of providers and payers. Many countries are grappling with the growing demand for providing

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quality health services and equitable access while also protecting their most vulnerable citizens from financial catastrophe when services are needed. This is particularly salient when those in the informal workforce are excluded from health and social care driven by national or private contracts, national heath and labor regulations, and other protections for or on behalf of formal sector workers. Informal workers have commonly shared health needs with the formal sector, but they have additional unique occupational needs, hazards, and exposures. As countries seek to strengthen fragile or overburdened health systems or undergo comprehensive health system reform, more public and private stakeholders are engaged in the pragmatic dialogue about not only all aspects of health systems, including governance, financing, and service delivery, but also the issue of sustainability of quality services for the longer term. From a variety of perspectives, this session explores the common and unique health issues of informal workers and the short- and long-term individual and societal consequences for the informal workforce and sector when not covered adequately and sufficiently by national health and social protections efforts.

11:45 a.m. – 1:00 p.m.

Moderator: Ivan Ivanov, *World Health Organization*; *Workshop Planning Committee Member*

Martha Chen, *Harvard Kennedy School; Harvard Graduate School of Design; Women in Informal Employment: Globalizing and Organizing* (*WIEGO); Workshop Planning Committee Member*

1:00 p.m. **Lunch (provided)**

II. Mapping Solutions to Universal Health Coverage Inclusive of the Informal Workforce

There are many different strategies for health care reform that ultimately affect health systems, particularly the provision and coverage of health services and their financing. Services are usually needed along the continuum of preventive, primary, secondary, and tertiary health care. The modalities for financing and their potential mixing can situate countries differently in terms of what services can be provided, by whom, and whether the actual or desired mix is sustainable. Another challenge is whether the services and the financing are inclusive of meeting the commonly shared and unique health needs of the informal workforce in

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developing countries by achieving goals of social financial protection of informal workers around the world. This session will explore the different prioritization and allocation of services based on the available financial resources and different financing mechanisms utilized as well as the social protection and inclusion of the informal workforce.

1:45 – 3:45 p.m.

Moderator: David de Ferranti, *Results for Development*

Peter Berman, *Harvard School of Public Health; Harvard University; Workshop Planning Committee Member*

Lorna Friedman, *Mercer*

Marleece Barber, *Lockheed Martin; Workshop Planning Committee Member*

Orielle Solar, *TEES Program, Chile* (by videoconference)

3:45 p.m. **BREAK**

III. Examination of Select Country Experiences of Universal Health Coverage, Part I

Many countries have the challenge of assurance in meeting the demands for the provision of quality health services to their varied populations. Through a purposeful sampling of countries and of diverse perspectives from the public and private sectors, this session explores the efforts of each country toward the achievement of universal health coverage specifically for the informal workforce. Presentations will also provide highlights of the involvement of PPPs in these efforts, as well as opportunities for enhanced or new partnerships to meet universal health coverage objectives that are inclusive of the health and social needs of the informal workforce and informal sector.

4:00 – 5:30 p.m.

Moderator: Paurvi Bhatt, *Medtronic Philanthropy*

Vilma Santana, *Federal University of Bahia, Brazil*

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Karen Sichinga, *Churches Health Association of Zambia*

Orrapan Untimanon, *Ministry of Public Health, Thailand*

5:30 p.m. **ADJOURN WORKSHOP FOR THE DAY**

5:30 – 6:30 p.m. **RECEPTION**

DAY 2 — JULY 30, 2014

8:00 a.m. **Registration (continental breakfast provided)**

8:30 a.m. **Recap of Day 1 and Preview of Content for Day 2**
Martha Chen, *Harvard Kennedy School; Harvard Graduate School of Design; WIEGO; Workshop Planning Committee Member*

IV. Examination of Select Country Experiences of Universal Health Coverage, Part II

8:45 – 10:45 a.m.

Moderator: Paurvi Bhatt, *Medtronic Philanthropy*

Somsak Chunharas, *National Health Foundation, Thailand*

Barry Kistnasamy, *Social Protection and Workers Compensation, Department of Health, South Africa*

Mirai Chatterjee, *SEWA*

10:45 a.m. **BREAK**

V. Responding to the Work-Related Health Needs of Informal Sector Workers, Part I

In addition to general health care, informal sector workers have some specific health needs to protect and promote their working capacity and to be protected from occupational health and safety hazards in their workplaces. How can these needs be met, and what are the most essential health services for this, and how much do they cost? What is the role of general health care providers (public and private) and non-health actors (workers and trade associations, local authorities) to protect and promote

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the health of informal sector workers? What is the role of the corporate sector to protect and promote health of informal sector workers and to contribute to their health coverage? This session will highlight the lessons learned from country initiatives and the different policy options for extending health coverage and occupational health and safety to informal sector workers.

11:00 a.m. – 1:00 p.m.

Moderator: John Howard, *U.S. National Institute for Occupational Safety and Health*

Ivan Ivanov, *World Health Organization; Workshop Planning Committee Member*

Yuka Ujita, *Labour Administration and Occupational Safety and Health, International Labour Organization*

Charu Garg, *Population, Health & Nutrition Research Program, Institute for Human Development, New Delhi, India*

Laura Alfers, *WIEGO*

1:00 p.m. **Lunch (provided)**

VI. Responding to the Work-Related Health Needs of Informal Sector Workers, Part II

2:00 – 4:00 p.m.

Moderator: John Howard, *U.S. National Institute for Occupational Safety and Health*

Francie Lund, *School of Built Environment and Development Studies University of KwaZulu Natal, South Africa; WIEGO*

Julietta Rodriguez-Guzman, *Pan American Health Organization*

Poonsap Tulaphan, *HomeNet Thailand*

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Hanifa Denny, *Associate Professor, Diponegoro University, Indonesia*

VII. The Way Forward

4:00 – 5:15 p.m.

Co-moderator: Clarion Johnson, *Co-Chair of PPP Forum and Workshop Planning Committee*

Co-moderator: Katherine Taylor, *University of Notre Dame; PPP Forum and Workshop Planning Committee Co-Chair*

Julietta Rodriguez-Guzman, *Pan American Health Organization*

Mirai Chatterjee, *SEWA*

Lorna Friedman, *Mercer*

Yuka Ujita, *Labour Administration and Occupational Safety and Health, International Labour Organization*

Robert Emrey, *U.S. Agency for International Development*

5:15 p.m. **A Perspective from The Rockefeller Foundation**
Michael Myers, The *Rockefeller Foundation*

5:30 p.m. **Adjournment of Workshop**
Clarion Johnson, *Co-Chair of PPP Forum and Workshop Planning Committee*

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Appendix B

Speaker Biographical Sketches

Laura Alfers, M.Phil., has worked since 2009 as a researcher on the Social Protection Programme of WIEGO (Women in Informal Employment: Globalizing and Organizing). WIEGO is an action research network which works to improve the status of the working poor (particularly women) in the informal economy. In her work for the Social Protection Programme, Ms. Alfers has been involved as a researcher and project manager of WIEGO's Occupational Health & Safety for Informal Workers Project, which has run for more than 4 years in five countries: Brazil, Ghana, India, Peru, and Tanzania. She has conducted primary research and authored several reports and policy briefs which have emerged from the project, and she has also been involved in building the capacity of informal worker groups in Ghana to demand better urban health services from local government. In June 2013 Ms. Alfers was named as 1 of 10 winners in The Rockefeller Foundation's Centennial Innovation Challenge. The award provided an opportunity to pilot ideas about the regulation of workplace health and safety in informal workplaces which were developed through the OHS Project and involved collaborations between informal worker organizations, local government institutions, urban planners, and health professionals. The project ran from January to December 2014 in the Warwick Junction informal trading area, which is in Durban, South Africa. The project also provided an opportunity to explore how digital technology and social media could be used to enhance the health and safety of informal workers in their workplaces.

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Marleece Barber, M.D., joined Lockheed Martin in 2011 as the director of health and wellness and chief medical officer. Dr. Barber is responsible for the corporation's strategy for optimizing the health and performance of Lockheed Martin's global workforce. Dr. Barber's focus is on developing a workforce that is informed and actively engaged in maintaining their personal health and well-being. Innovation and creativity are hallmarks of the programs she has developed and of her leadership style. Dr. Barber offers a wealth of experience in health and productivity management. Prior to joining Lockheed Martin, she worked for Deere & Company where she was the global director of health, work life, and safety. She designed a strategy to create a culture of health at Deere locations around the world, emphasizing the importance of risk factor reduction, good nutrition, exercise, and stress management. She has also had the experience of serving as a regional medical director for Shell Oil. She holds a bachelor of science degree in chemistry from Dillard University, a doctor of medicine from the University of Rochester School of Medicine and Dentistry, and a master of science from Harvard University School of Public Health. She is an internist and occupational health physician and a member of the National Academies of Sciences, Engineering, and Medicine's Forum on Public–Private Partnerships for Global Health and Safety.

Peter Berman, M.Sc., Ph.D., is a health economist with more than 30 years of experience in research, policy analysis and development, and training and education in global health. He taught at Harvard School of Public Health (HSPH) from 1991 until 2004, at which time he joined the World Bank. He retired from the World Bank in mid-2011. While with the World Bank, Dr. Berman was the lead health economist in the HNP (Health, Nutrition and Population) anchor department and the practice leader for the World Bank's Health Systems Global Expert Team from 2008 to 2011. From 2004 to 2008 he was based in the World Bank's New Delhi office as the lead economist for health, nutrition, and population in India. He is visiting professor at the Public Health Foundation of India (PHFI), New Delhi, and an advisor to the China National Health Development Research Center for health care financing and health accounts. At HSPH from 1991 to 2004, Dr. Berman was a professor of the practice of population and international health economics, the founding director of the International Health Systems Program, and a principal investigator for two global projects at Harvard, the Data for Decision Making Project and the Partnerships for Health Reform. He also led a multiyear study to develop national health accounts with the Government of Turkey and numerous other international research collaborations. Dr. Berman has been co-director of the HSPH–World Bank Institute Flagship Global Core Course on Health Sector Reform and Sustainable Financing and directed

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HSPH's executive education programs in public–private partnerships and national health accounts.

Paurvi Bhatt, M.P.H., is the senior director for global access at Medtronic Philanthropy, where she leads a multi-million-dollar global strategic grants portfolio that focuses on empowering people affected by noncommunicable diseases, enabling frontline health workers, and advancing the policy dialogue to increase access to care for the underserved. She is a seasoned global health leader with deep multi-sectoral experience in business, nonprofit, and government sectors. She spearheaded global programs in several private companies, including at Levi Strauss and Abbott. Ms. Bhatt has also managed global health technical portfolios at the U.S. Agency for International Development and CARE USA. She has served as an international evaluator at the U.S. General Accountability Office. Her technical expertise is in HIV/AIDS, women's health, and health systems and economics. She serves on several human resources, international health, and HIV/AIDS working groups and technical advisory committees and is on several boards, including the Global Business Group on Health, AIDSUnited, and GlobeMed. She holds a master's of public health in health systems and economics from Yale University and a bachelor's degree in neuroscience from Northwestern University.

Mirai Chatterjee, M.P.H., is the director of social security at the Self Employed Women's Association (SEWA) in India. She is responsible for SEWA's health care, child care, and insurance programs. She is currently chairperson of the National Insurance VimoSEWA Cooperative Ltd and is actively involved with the Lok Swasthya Health Cooperative. Both cooperatives are promoted by SEWA. She joined SEWA in 1984 and was its general secretary after its founder, Ela Bhatt. Ms. Chatterjee serves on the boards of several organizations, including the Friends of Women's World Banking, the Public Health Foundation of India, and the Health Action Partnership International. She was an advisor to the National Commission for Enterprises in the Unorganized Sector and is in the advisory group of the National Rural Health Mission. She was also a commissioner in the World Health Organization's Commission on the Social Determinants of Health. She was most recently a member of the National Advisory Council (NAC), appointed by the Prime Minister of India. Ms. Chatterjee has a B.A. from Harvard University in history and science and a master's from the Johns Hopkins Bloomberg School of Public Health.

Martha Chen, Ph.D., is a lecturer in public policy at the Harvard Kennedy School and the international coordinator of the global research and policy action network Women in Informal Employment: Globalizing and Orga-

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nizing (WIEGO). An experienced development practitioner and scholar, her areas of specialization are employment, gender, and poverty, with a focus on the working poor in the informal economy. Before joining Harvard in 1987, she had two decades of resident experience in Bangladesh working with BRAC (now the world's largest nongovernmental organization) and in India, where she served as field representative of Oxfam America for India and Bangladesh. Dr. Chen received a Ph.D. in South Asia regional studies from the University of Pennsylvania. She is the author of numerous books, including *Bridging Perspectives: Labor, Informal Employment, and Poverty* (co-edited with Namrata Bali and Ravi Kanbur), *The Progress of the World's Women 2005: Women, Work and Poverty* (co-authored with Joann Vanek, Francie Lund, James Heintz, Renana Jhabvala, and Chris Bonner), *Mainstreaming Informal Employment and Gender in Poverty Reduction* (co-authored with Joann Vanek and Marilyn Carr), *Women and Men in the Informal Economy: A Statistical Picture* (co-authored with Joann Vanek), and *Perpetual Mourning: Widowhood in Rural India*. Dr. Chen was awarded a high civilian award, the Padma Shri, by the government of India in April 2011 and a Friends of Bangladesh Liberation War award by the government of Bangladesh in December 2012.

Somsak Chunharas, M.D., M.P.H., is the secretary general of the National Health Foundation, a Thai nongovernmental organization, working on knowledge-based health policy and system development. He is a medical doctor in preventive medicine with a master's degree in public health, and he has also received training in medical education and health financing. Dr. Chunharas started his career as a physician and director in community hospitals in rural Thailand, then shifted to international health and health planning with particular interest and experiences in health policy and system research, health insurance systems, research ethics, information systems, human resource development, and knowledge management. He has written articles and book chapters in both Thai and English and was the founding director of the Health Systems Research Institute, which provided crucial technical support in designing the Thai Universal Coverage Scheme. He worked with various organizations in health policy and system development both at home and abroad, for example, serving in World Health Organization (WHO) advisory committees on health research in two regional offices as well as at the headquarters level, and he has been a board member of international organizations such as the Council on Health Research for Development and the Alliance for Health Policy and Systems Research. Dr. Chunharas has been a consultant for the WHO and UNICEF as well as being on the expert advisory panel of the ministerial leadership program of the Harvard Kennedy School and School of Public Health.

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David de Ferranti, Ph.D., is the president of Results for Development and one of its co-founders. Previously, Dr. de Ferranti was the regional vice president for Latin America and the Caribbean at the World Bank, where he was responsible for a $25 billion loan portfolio and a staff of 700 in 16 locations. He also headed the World Bank's work on social sectors (nutrition, health, education, population, and social safety net and protection programs), where he oversaw research, policy work, and financial operations in countries in Africa, Asia, Latin America, and Eastern Europe. He has led research at Rand and served in the U.S. government, where he was second-in-command of the 2,300-employee federal government agency responsible for food and nutrition programs for low-income households in the United States. He is a senior fellow at the Brookings Institution, a visiting fellow at the Harvard School of Public Health, and an adjunct professor at Georgetown University. He is also an advisor to a number of individuals and organizations, including the United Nations Foundation. Dr. de Ferranti serves on the board of numerous organizations, including the Center on Budget and Policy Priorities, Synergos, and The Micronutrient Initiative. He spent 10 years on the board of The Rockefeller Foundation, where he chaired the oversight of how its $4 billion endowment is invested. Dr. de Ferranti holds a Ph.D. in economics from Princeton University, with an Outstanding Dissertation Award, and a B.A. from Yale University, with Phi Beta Kappa and magna cum laude honors. His recent publications include *How to Improve Governance: A New Framework for Analysis and Action* and a *Lancet* article, "Reforming How Health Care is Paid for in China: Challenges and Opportunities."

Hanifa M. Denny, M.P.H., Ph.D., is an associate professor and the director of the Undergraduate Study Program of Public Health with the Department of Occupational Health and Safety at Diponegoro University in Semarang, Indonesia, where she has recently initiated the launch of a doctoral program in public health. In addition, she is currently serving her second term as president of the Indonesian Public Health Union and as vice president of the Indonesian Professional Occupational Health Management Union. Besides her academic activities from 2006 to present, she has also been assigned as the main occupational health consultant for informal sectors with the Indonesian Ministry of Health. Dr. Denny received her bachelor of science in public health from the College of Medicine at Diponegoro University and obtained her master of public health in occupational health from the College of Public Health at the University of the Philippines, Manila. Following her M.P.H., she earned her Ph.D. in public health from the College of Public Health at the University of South Florida. As of the end of 2013, she had 4 peer-reviewed publications, 1 book chapter, and 16 unpublished research reports; she

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had participated in and conducted 6 specialized public and occupational health training sessions and workshops; and she had contributed to 12 national and international meeting presentations. In addition, she has been awarded several grants while at Diponegoro University. Dr. Denny has been the recipient of 12 noteworthy awards and currently is a member of 6 professional organizations, for 2 of which she successfully provides leadership and vision. She reviews for and is a consultant for journals, government agencies, and private sector industries. Her current focus is on the betterment of public and occupational health system solutions for informal and formal sector workers, primarily in Indonesia and other developing countries.

Victor J. Dzau, M.D., is the President of the National Academy of Medicine (NAM), formerly the Institute of Medicine (IOM). In addition, he serves as Chair of the IOM Division Committee of the National Academies of Sciences, Engineering, and Medicine. He is Chancellor Emeritus and James B. Duke Professor of Medicine at Duke University and the past President and CEO of the Duke University Health System. Previously, Dr. Dzau was the Hersey Professor of Theory and Practice of Medicine and Chairman of Medicine at Harvard Medical School's Brigham and Women's Hospital, as well as Chairman of the Department of Medicine at Stanford University.

Bob Emrey, M.B.A., M.P.H., is a lead health systems specialist in the Office of Health Systems at the U.S. Agency for International Development (USAID) headquarters in Washington, DC. Since joining USAID in 1989, he has led headquarters projects on health financing and governance and served as chief of the Health Systems Division. He served on the executive board of the Health Metrics Network. Before joining USAID, he was consultant adviser to country health agencies, USAID missions, and the World Bank, focusing on strengthening health systems in the areas of strategic planning, management, and financial reform. For 4 years he was director of international programs at the Association of University Programs in Health Administration, where he led a project to develop metrics to assess health program management in developing countries. Earlier he was a policy research specialist focusing on management information systems in U.S. local governments at the Public Policy Research Organization at the University of California, Irvine. He began his public health career as a commissioned officer in the U.S. Public Health Service (USPHS). He served in the USPHS Indian Health Program at headquarters and as a service unit and hospital director at the Crow–Northern Cheyenne Service Unit, Montana. He received his education in California with a bachelor's degree in economics from Occidental College; an M.B.A.

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from the University of California, Los Angeles; and an M.P.H. from the University of California, Berkeley, and he completed all of the requirements for a Ph.D. in public administration, except the dissertation, at the University of California, Irvine.

Lorna Friedman, M.B.A., M.D., is a partner in Mercer's Global Health Management practice based out of the company's New York office. She is board certified in pediatrics and licensed in New York State, with more than 20 years of experience in health care. Her broad experience provides a 360-degree view of medical care, total health management, strategic health care planning, and global health options. Prior to joining Mercer, she spent more than a decade at Cigna, with the past several years in the international division. Her responsibilities included strategic planning for emerging markets, including evaluating global health systems and related health improvement opportunities. Her successful efforts working with large employers of the national accounts division earned her the Gold Circle Award. Earlier in her career at Cigna, she served in quality, medical management, technology assessment, and product and marketing roles, with an emphasis on assisting diverse multinational employer groups with their benefit strategies and programming to improve the health of their employees. Before joining Cigna, Dr. Friedman was an assistant professor of clinical pediatrics at Cornell University Medical College–New York Hospital. She also practiced at New York Hospital, where she served as director of the Division of Primary Care, Department of Pediatrics. Dr. Friedman completed her residency at the University of Pennsylvania's Children's Hospital of Philadelphia, where she served on the ethics committee and was director of the Homeless Health Initiative. Her efforts in ensuring health care for homeless children earned her the Nancy Elizabeth Barnhart Award for Child Advocacy. She is a graduate of New York Medical College and the Columbia Graduate School of Business.

Charu C. Garg, Ph.D., is a health economist, currently working as an international consultant, a visiting professor, and the director at the Population Health and Nutrition Program at the Institute for Human Development, New Delhi. She worked as a health financing expert at the World Health Organization in Geneva and at the World Bank in Washington, DC, for almost 10 years. Before that, she worked at academic and research institutions and nongovernmental organizations in India for 20 years. She has experience in generating knowledge products for strengthening health systems and providing strategic policy advice to governments globally. Her work has focused on the cross-cutting themes of health financing, information, and service delivery with diseases programs (non-

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communicable diseases and HIV) and population groups (children, workers, and the economically disadvantaged). She has managed projects and multi-stakeholder alliances, built capacity, and led resource mobilization efforts at a global level. She has organized and participated in several international conferences and has an excellent publication record. She has a postdoctoral degree from Harvard University in the United States and a Ph.D. from the Delhi School of Economics in India.

John Howard, J.D., M.D., is the director of the National Institute for Occupational Safety and Health (NIOSH) in the U.S. Department of Health and Human Services (HHS). He also serves as the administrator of the World Trade Center Health Program in HHS. Dr. Howard was first appointed NIOSH director in 2002 during the George W. Bush administration and served in that position until 2008. In 2008–2009, he worked as a consultant with the U.S. government's Afghanistan Health Initiative. In September 2009, Dr. Howard was again appointed NIOSH director in the Barack Obama Administration. Prior to his first appointment as NIOSH director, Dr. Howard served as chief of the Division of Occupational Safety and Health in the State of California's Labor and Workforce Development Agency from 1991 through 2002. Dr. Howard received a doctor of medicine degree from Loyola University of Chicago, a master of public health degree from the Harvard School of Public Health, a doctor of law degree from the University of California, Los Angeles, and a master of law degree in administrative law and economic regulation from George Washington University in Washington, DC. Dr. Howard is board-certified in internal medicine and occupational medicine. He is admitted to the practice of medicine and law in the State of California and in the District of Columbia, and he is a member of the U.S. Supreme Court bar. He has written numerous articles on occupational health law and policy.

Ivan Dimov Ivanov, M.D., Ph.D., coordinates the World Health Organization's (WHO's) global action on workers' health and leads current projects on linking occupational health to primary health care, on the diagnosis of occupational diseases, and on addressing occupational risks for noncommunicable diseases, including cancer and chronic respiratory diseases. He carried out research on the delivery of essential interventions for workers' health at the primary care level in six countries and completed a global survey on country actions for workers' health. Dr. Ivanov started working at the WHO in 2000, first in the Regional Office for Europe as manager of the programs on environmental health policies and occupational health. In 2005 he was transferred to the WHO headquarters, where he facilitated the development of the Global Plan of Action on Workers' Health and currently coordinates its implementation. Prior

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to joining the WHO, Dr. Ivanov was a deputy chief medical officer and senior adviser in occupational health at the ministry of health of his native country, Bulgaria. He is a medical doctor and a specialist in occupational health, and he has studied health administration in the Ministry of Welfare, Japan. Dr. Ivanov obtained his Ph.D. in the sociology of health and environment from Michigan State University in the United States, where he has a faculty appointment as an adjunct professor at the Institute of International Health.

Clarion Johnson, M.D. (*Forum Chair*), recently retired from ExxonMobil Corporation as the global medical director of its Medicine and Occupational Health Department. He is board certified in internal medicine, cardiology, and occupational medicine. Dr. Johnson received his medical degree from Yale University, and in addition to a cardiology fellowship, he did a military/basic science fellowship at the Walter Reed Army Institute of Research, followed by a postdoctoral program in the field of microwave research. He has published a variety of articles in various fields. He is a member of the Urban League's advisory board BEEP (Black Executive Exchange Program); a past chairman of the Virginia Health Care Foundation; and a member of the Millbank Memorial Fund. He was a member of the National Research Council/Institute of Medicine (IOM) Committee to Evaluate the NIOSH Health Hazards Evaluation from June 2007 to December 2008. He is co-chair of the National Academies of Sciences, Engineering, and Medicine's Forum on Public–Private Partnerships for Global Health and Safety.

Patrick W. Kelley, **M.D., Dr.P.H.,** joined the Institute of Medicine (IOM) of the National Academies of Sciences, Engineering, and Medicine in July 2003 as the director of the Board on Global Health. He has subsequently also been appointed as the director of the Board on African Science Academy Development. Dr. Kelley has overseen a portfolio of IOM expert consensus studies and convening activities on subjects as wide ranging as the evaluation of the U.S. emergency plan for international AIDS relief (PEPFAR); the U.S. commitment to global health; sustainable surveillance for zoonotic infections; substandard, falsified, and counterfeit drugs; innovations in health professional education; cardiovascular disease prevention in low- and middle-income countries (LMICs); interpersonal violence prevention LMICs; and microbial threats to health. He also directs a unique capacity-building effort, the African Science Academy Development Initiative, which over 11 years has aimed to strengthen the capacity of eight African academies to provide independent, evidence-based advice to their governments on scientific matters. Prior to coming to the Academies, Dr. Kelley served in the U.S. Army for more than 23 years

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as a physician, residency director, epidemiologist, and program manager. In his last U.S. Department of Defense (DoD) position, Dr. Kelley founded and directed the DoD Global Emerging Infections Surveillance and Response System (DoD-GEIS). This responsibility entailed managing surveillance and capacity-building partnerships with numerous elements of the federal government and with health ministries in more than 45 developing countries. He also founded the DoD Accession Medical Standards Analysis and Research Activity and served as the specialty editor for a landmark two-volume textbook titled *Military Preventive Medicine: Mobilization and Deployment*. Dr. Kelley is an experienced communicator, having lectured in English or Spanish in more than 20 countries. He has authored or co-authored more than 70 scholarly papers, book chapters, and monographs and has supervised the completion of more than 25 book-length IOM consensus reports and workshop summaries. While at the IOM he has obtained grants and contracts for work conducted by his unit from more than 60 governmental and nongovernmental sources. Dr. Kelley obtained his M.D. from the University of Virginia and his Dr.P.H. in epidemiology from the Johns Hopkins School of Hygiene and Public Health. He has also been awarded two honorary doctoral degrees and is board certified in preventive medicine and public health.

Barry Kistnasamy, M.D., is a medical doctor with additional training in public health, occupational health, and environmental health. He has 25 years of experience in health policy, health planning, and management in the public, nongovernmental, and private sectors as well as the provision of occupational health and HIV/AIDS and tuberculosis interventions in South Africa. He has worked with the World Health Organization, the International Labour Organization, and the World Bank and has served on many national and international boards, committees, and commissions. He served in the South African Department of Defense during the integration of the armed forces; was the deputy director-general and head of health, welfare, and environment in the Northern Cape province during the first term of the democratic government; and was the dean of the Nelson Mandela School of Medicine in Durban. He is the executive director of the Institute for Occupational Health and the National Cancer Registry as well as compensation commissioner for occupational diseases covering compensation for occupational diseases in the mines and works sector in South Africa, and he reports to the Minister of Health. He trained as a medical doctor and specialist in public health at the University of Natal and has had additional education and training in health economics at the University of York in the United Kingdom, in occupational and environmental health at the University of Michigan in the United States, in advanced epidemiology at Tufts University in the United States, and

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in health leadership at the University of Cambridge in the United Kingdom. He is an associate fellow of the College of Public Health Medicine of South Africa and has specialist registration with the Health Professions Council of South Africa.

Francie Lund is a senior research associate specializing in social policy. She is the director of the Social Protection Programme of the global research and advocacy network, Women in Informal Employment: Globalizing and Organizing, or WIEGO. Trained as a sociologist and social worker, she practiced as a grassroots organizer in the fields of early childhood development and urban infrastructure, with a special interest in participatory research methods as an organizing tool. A long-standing research interest has been the impact of South Africa's pensions and grants in mitigating poverty and redressing inequality. This led to her involvement in a range of policy interventions, including chairing the Lund Committee on Child and Family Support in 1995, which led to the introduction of the child support grant. She has been involved in the global debates around cash transfers, such as the child support grant, as a form of intervention in addressing poverty and inequality. She is engaged locally and globally in research and policy advocacy about informal workers, especially regarding local government intervention, and about the provision of social security, and occupational health and safety. An emerging research interest is occupational health and safety for informal workers. She is a research associate at the Brooks World Poverty Institute at the University of Manchester.

Michael Myers, M.A., performs a number of leadership roles at The Rockefeller Foundation, including coordinating strategies for the foundation's work in the United States and leading two key initiatives, the global Transforming Health Systems initiative and transportation issues in the United States. Mr. Myers joined The Rockefeller Foundation in 2010 and led the organization's successful centennial program, which included an array of global activities to build on past successes and to help shape the foundation's future direction. Prior to coming to The Rockefeller Foundation, Mr. Myers served in leadership capacities in the U.S. Senate for much of his career, including as chief counsel and staff director to the late Senator Edward M. Kennedy. He worked on a range of issues, including health care, employment, economic development, refugees, immigration, and education. Before his career in government, Mr. Myers worked on refugee and international humanitarian matters for nongovernmental organizations and the United Nations High Commissioner for Refugees. Mr. Myers holds both a bachelor's and a master's degree in political science from Columbia University.

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Julietta Rodriguez-Guzman, M.Sc., M.D., is a regional advisor on workers' and consumers' health at the Pan American Health Organization (PAHO). Coming from Colombia, she received an M.D. degree from Pontific Xaveriana University, a specialty degree in occupational health from El Bosque University, and an M.Sc. applied degree in occupational health sciences at McGill University in Canada. Holding several diplomas in social security, occupational epidemiology, distance education, and labor medicine and rehabilitation, she was awarded a research policy fellowship at the McGill University Institute of Health and Social Policy. During the past 24 years, her work has focused on formulating and assessing occupational health and workers' compensation systems, policies, and programs; supporting the development of worker's health promotion; and studying different working conditions in Colombia and other Latin American countries (heavy metals, violence at work, occupational cancer, respiratory diseases, ethics in occupational health practice, rural workers, and gender mainstreaming). She also continued her academic appointment at El Bosque University, becoming an associate professor in occupational health. Her work–life interests are aimed at helping understand and guide social policies, processes, and institutions in order to improve working and living conditions for working people, with a particular emphasis on vulnerable populations, mainly in Colombia and Latin America. Her long-lasting contributions to the workers' health programs at PAHO, the World Health Organization, the International Labour Organization, the Organization of American States, the Inter-American Development Bank, the World Bank, and other international organizations granted her the credentials and the experience to be appointed as regional advisor in workers' health for the Americas. She is committed to continuing her efforts to focus on the improvement of working and living conditions that can lead to protecting the health and life of millions of workers who live in the region.

Vilma Santana, M.D., Ph.D., is a full professor at the Institute of Collective Health, Federal University of Bahia in Brazil, where she is the coordinator of the Program of Environmental and Occupational Health. Her major interest is the production of knowledge for action, focusing on workers who are underrepresented in research or health and social protection programs and policies, such as informal workers, domestic workers, children, and adolescents, and how their work conditions, together with poverty and social inequities, affects their health and well-being. Other areas of research interest are discrimination in the workplace, gender and work, the evaluation of occupational and safety programs, the costs of occupational injuries and illnesses, and labor and human rights. Most of her studies are developed on work injuries because they represent the vast

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majority of reported occupational-related ill-health problems. Dr. Santana teaches courses for the master's degree and doctorate in public health and is also the coordinator of two diploma courses in workers' health and occupational epidemiology. From 2006 to 2010 she was the co-chair of the Knowledge Network on Employment Conditions and Health Inequalities (EMCONET), a component of the World Health Organization's Commission on Social Determinants of Health, and she is responsible for the Case Brazil, Occupational Health Safety for Informal Workers, Women in Informal Employment: Globalizing and Organizing. From 2008 to present she has served as the coordinator of the Collaboration Center for Workers' Health Surveillance of the Health Ministry, National Coordination of Workers' Health.

Karen Sichinga, M.Sc., is the executive director of the Churches Health Association of Zambia (CHAZ), which is made up of 135 affiliates representing 16 different churches, both Catholic and Protestant, with a majority of them based in rural areas of Zambia. She is a professional nurse and has an undergraduate degree from the University of Alberta, Canada, and a master's degree from Leeds University, England. Mrs. Sichinga serves as a member of the regional reference group for Southern Africa for the Ecumenical HIV and AIDS Initiative in Africa, a project of the World Council of Churches (WCC). She holds the position of chair of the Africa Christian Health Associations Platform, an arm of the WCC, and she works closely with the Ecumenical Advocacy Alliance.

Orielle Solar, M.Sc., M.P.H., M.D., is a research coordinator for program employment, equity, and health at the Latin American Faculty of Social Sciences and an assistant professor in the School of Public Health, Faculty of Medicine, at the University of Chile. She performs collaborative group work with Greds–EMCONET (Grup de Recerca en Salut Desigualtats in the Employment Conditions Knowledge Network) of the Universitat Pompeu Fabra in Barcelona, Spain. She served as a researcher at the Center for Research on Inner City Health at St. Michael's Hospital, Toronto University, Ontario, Canada, in 2010. Dr. Solar practiced as the chief cabinet under-secretary for public health at the Ministry of Health of Chile from January 2008 to March 2010. Previously, she coordinated the research team that developed the National Survey of Conditions of Employment, Labor and Equality of the Ministry of Health of Chile. She worked at the World Health Organization (WHO) in Geneva in the Department of Equity, Poverty and Social Determinants of Health (2004–2007), and she was a member of the technical secretariat of the Commission on Social Determinants of Health at the WHO. She was head of the Department of Occupational Health and Environmental Pollution at the Public Health

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Institute of Chile (2002–2004) and served as the medical director of medical health services for the metropolitan region (1998–2002). Dr. Solar also serves as an international consultant in the areas of social determinants of health, equity of access, employment conditions, occupational health, and health in all policies.

Poonsap Suanmuang Tulaphan has more than 30 years of experience working with women and informal workers through projects of the Appropriate Technology Association and HomeNet Thailand (Foundation for Labor and Employment Promotion). She has helped develop women's potential and improve their economic situations using local knowledge of science and technology as well as community enterprise as strategies, which resulted in target women increasing their income for traditional hand-woven cloth. Moreover, she provided the assistance needed to create and run micro finance intermediaries (MFIs) and assistance to the users of MFIs' service for saving and credit. At present, she is a director of HomeNet Thailand, which is responsible for promoting and advocating for social protection policies and legislation covering informal workers in Thailand. HomeNet Thailand has continuously advocated for informal workers, universal health care coverage, social insurance, occupational health, safety and working environment, elderly pension, and child support allowance. In addition, Homenet Thailand successfully advocated for the Homeworkers Protection Act and the Ministerial Regulation to protect the labor rights of domestic workers in Thailand.

Katherine Taylor, Ph.D., is a research professor in the Biological Sciences Department at the University of Notre Dame. She is also the director of operations and director of global health training at the university's Eck Institute for Global Health. In her current position, she serves as the university liaison for a number of international global health partnerships. She is also actively involved in training and global health education as the director of the master of science program in global health. Dr. Taylor earned a B.Sc. from Purdue University, an M.Sc. from the University of Notre Dame, and a Ph.D. from the Vrije University, Brussels. Her research experience includes 14 years in Kenya, initially employed by the U.S. Centers for Disease Control and Prevention on malaria research projects in collaboration with the U.S. Army and the Kenya Medical Research Institute. During her last 10 years in Kenya she worked on the immunology of African trypanosomes in livestock at the International Livestock Research Institute and served as the project leader for immunology and vaccine development. Dr. Taylor left Kenya in 2001 to join the National Institute of Allergy and Infectious Diseases, Division of Microbiology

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and Infectious Diseases, as a program officer. There she developed and led a new drug development section within the Office of Biodefense that funded a portfolio of contracts for the development of new drugs against high priority biothreats. Dr. Taylor is currently the president of the American Society for Tropical Medicine and Hygiene, Committee for Global Health, and also serves on the program committee of the society. She is a member of the National Academies of Sciences, Engineering, and Medicine's Forum on Public–Private Partnerships for Global Health and Safety.

Yuka Ujita, M.D., Ph.D., serves as the labor administration and labor inspection officer at the International Labour Organization's (ILO's) Geneva headquarters. Dr. Ujita, a Japanese national, is a medical doctor by profession and holds a Ph.D. in preventive medicine from the University of Occupational and Environmental Health, Japan (UOEH) as well as a diploma of occupational health. In addition, she has completed two postgraduate courses at UOEH. Her work experience in the medical field spans more than 20 years. She has served as a medical officer at several medical facilities, including the hospital of UOEH and the Japan Overseas Health Administration Center. As a certified occupational physician, she offered occupational safety and health services to both workers and employers in various settings. In 2003 she joined the International Labor Organization (ILO) Subregional Office for East Asia as the technical officer on occupational safety and health. Since then, Dr. Ujita has contributed to the improvement and promotion of safety and health at work through policy and technical advice, training, knowledge sharing, awareness raising, and project backstopping at both the ILO headquarters in Geneva and the field levels. After 4.5 years of assignment as a specialist in occupational safety and health as part of the ILO Decent Work Team and Office for the Caribbean, Dr. Ujita assumed her current position of labor administration and labor inspection in June 2014.

Orrapan Untimanon, Ph.D., is an occupational health epidemiologist by training. She has worked at the Department of Disease Control of the Bureau of Occupational and Environmental Diseases (BOED) in Bangkok, Thailand, for 17 years as a senior of professional level. Dr. Untimanon's major responsibilities at the BOED are (1) studying and development of a body of knowledge to prevent occupational and environmental diseases and control their health hazards; (2) determination and development of the standard for implementation of surveillance programs to prevent occupational and environmental diseases and control their health hazards; (3) development of occupational health services among enterprises, hospitals, and primary care units; and (4) collaboration with both

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national and international agencies to strengthen the body of knowledge on occupational and environmental health. Her current projects focus on the development of occupational health services provided by hospitals and primary care units and the development of occupational services for health workers.

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