



Global Evidence for Peer Support:

HUMANIZING
HEALTH CARE

Report from an International Conference

Hosted by Peers for Progress and
the National Council of La Raza



Peers for Progress
Peer Support Around the World

A program of the American Academy of Family Physicians Foundation



Peers for Progress

Peer Support Around the World

A program of the American Academy of Family Physicians Foundation

www.peersforprogress.org

[@peers4progress](https://twitter.com/peers4progress)

Peers for Progress was founded in 2006 to promote peer support as a key part of health, health care, and prevention around the world. The mission of Peers for Progress is to accelerate the availability of best practices in peer support. Peers for Progress is designed to demonstrate the value of peer support, extend the evidence base for such interventions, help establish peer support as an accepted, core component of health care, and promote peer support programs and networks on a global scale.

To accomplish its goals, Peers for Progress began by addressing the growing global diabetes epidemic through a variety of activities including Evaluation and Demonstration Grants that built and applied the evidence base for peer support in diabetes. Other activities include promoting peer support programs, developing a global network of peer support programs, and hosting a global webpage to disseminate program materials and curricula.

We are continually expanding a global network of peer support organizations to address the needs of various chronic diseases, health risks, and other conditions that require ongoing health care and sustained behavior change.

Peers for Progress is a program of the American Academy of Family Physicians Foundation. Support is provided by the Eli Lilly and Company Foundation and the Bristol-Myers Squibb Foundation.



Edwin B. Fisher, Ph.D.

Global Director, Peers for Progress
American Academy of Family Physicians Foundation

Professor, Department of Health Behavior
Gillings School of Global Public Health
University of North Carolina - Chapel Hill

WE ALL DO BETTER WITH PEER SUPPORT. Whether it's villagers in Uganda, farmers who have just moved to large cities in China, middle-class retirees in England, or patients of a large provider system in the US, we all benefit from feeling understood by someone who has “walked in my shoes.” We learn from each other and live healthier lives.

Peers for Progress has the privilege of promoting peer support around the world. Through a two-day conference in San Francisco in June 2014, clinicians, researchers, and peer supporters shared and discussed the results of 14 research projects we funded in 9 countries across 6 continents.

This report lays out all the evidence and great wisdom of those projects. What was most striking about the reports and stories exchanged at the conference is a marvelous yet simple observation:

PEER SUPPORT WORKS AND PEOPLE LIKE IT!

There is strong evidence that peer support helps people prevent disease, helps people manage chronic diseases like diabetes, helps people cope with stress or emotional and psychological challenges, engages populations that are hardly reached by health care systems and interventions, and reduces unnecessary care such as multiple hospital admissions for the same problem. In each of these applications, peer support is generally cost-effective and often cost-saving.

People gravitate towards peer support because of its humanizing effect on care. They like how it provides a personal connection to better understand their health and expand their role in guiding their own care.

These findings culminate in the theme of this report: evidence-based, standardized, and flexible peer support that improves health and humanizes care.

It is a pleasure to thank the fine organizations that have enabled this work. The Eli Lilly and Company Foundation recognized the major role that individuals with diabetes could play in helping each other manage their disease and invested in our goal to implement and evaluate peer support programs for this population. The Bristol-Myers Squibb Foundation helped extend this work to emphasize integration with primary care and the reduction of socioeconomic disparities. Reflecting the rich tradition of the *promotore* in health care, the National Council of La Raza has been a vigorous collaborator. Peers for Progress is a program of the American Academy of Family Physicians Foundation, which has provided a strong organizational base for our activities and linked them with family medicine and primary care. The Gillings School of Global Public Health at the University of North Carolina has provided a vibrant university setting for Peers for Progress' Program Development Center.

For myself, working with wonderful colleagues around the world to increase recognition of the importance of peer support is a great privilege. I hope this report brings to you a sense of the benefits, excitement, and satisfaction that peer support can bring to individuals, professionals, and health systems around the world.

A handwritten signature in blue ink that reads "Ed Fisher". The signature is written in a cursive, flowing style.



Table of Contents

EXECUTIVE SUMMARY 1

PART I

PEER SUPPORT WORKS 5

Social Support and Health	5
General Evidence of Benefits of Peer Support	6
Cost-Effectiveness	8
Evidence from Peers for Progress: Feasibility to Adoption	9
Feasibility	10
Reach and Engagement	11
Effectiveness	12
Local Sustainability	15
Spread and Adoption	16

PART II

HUMANIZING HEALTH CARE 17

Four Key Functions for Flexible Standardization	18
Person-Centered Principles	19
Cultural Tailoring	19
Peer Support in the Latino Tradition: <i>Promotores de Salud</i>	20

The Many Faces of Peer Support: Diverse Health Care Roles	21
Program Model: Thai Village Health Volunteers	22
Under a Big Umbrella: Community Health Workers	23
Peer Support Across the Lifespan	25
Continuum of Learning and Ongoing Support	26
Population Focus	26

PART III

MEETING PRESENT AND FUTURE HEALTH CARE CHALLENGES 27

Integrated Management of Chronic Diseases and Behavioral Health	28
Reaching the Hardly Reached	30
eHealth Peer Support	30
The Way Forward	31

PARTICIPANTS 33

REFERENCES 36



Executive Summary

PEER SUPPORT presents a unique opportunity for health care planning and management. Clear evidence shows concrete benefits for individuals and systems, including cost-effectiveness. As an important humanizing force in health care, it changes the way we look at health. To bring peer support to diverse populations and settings, the key functions provide a framework for standardization and flexible adaptation. This report sets the course for scalable, feasible implementation that reaches whole populations, engages those too often left behind in health care, improves outcomes as well as quality of life, and reduces unnecessary burden and costs.

This report features the evidence of major research funded by Peers for Progress. Together with extensive findings from collaborators and colleagues around the world, the case for peer support is strong and clear. Peer support works and provides an excellent strategy to address present and future health challenges, including engaging those whom health care and prevention too often fail to reach, addressing mental health and its intersections with other health problems, reducing unnecessary and costly care, and improving the health of populations.

The value of peer support extends beyond efficacy. With its intrinsic emphasis on patient-centeredness, peer support is a critical humanizing force in health care. Peer supporters can deliver concrete benefits while transforming the experience of care from passivity to agency. Effective and humanizing, peer support facilitates the right care at the right time at the right cost.

The Conference

Peers for Progress and the National Council of La Raza hosted a conference in June 2014, bringing together investigators from 14 research projects that Peers for Progress funded in 9 countries on 6 continents along with thought leaders from around the world. This conference was an international platform to discuss the latest findings and explore new areas for research, dissemination, and implementation. This report synthesizes the evidence accumulated and the insights gleaned from the diverse global experience, research findings, and practical wisdom of those assembled.

The Evidence

From randomized-controlled trials to qualitative studies, the projects supported by Peers for Progress demonstrated strong evidence for peer support in terms of feasibility, reach and engagement, effectiveness, sustainability, and spread and adoption. The research presented at the conference focused on applications to diabetes care, but peer support and the concerns of Peers for Progress extend far beyond to include asthma, heart disease, cancer, HIV/AIDS, maternal and child health, and mental health.

Highlights of the findings include:

- **Feasibility across widely divergent systems, populations, and levels of program resources**
Fourteen programs implemented in nine countries on six continents, many in severely under resourced settings
- **Reach, engagement and retention among high proportions of intended populations, including those “hardly reached”**
Reached and retained for two years 89% of low-income, single mothers of Medicaid-covered children hospitalized for asthma
- **Effectiveness across clinical and quality-of-life outcomes**
Significant reductions in blood glucose control (Hemoglobin A1c – HbA1c) across multiple projects
- **Especially effective among those most in need**
More effective among those initially low on medication adherence or self-management, and those with low health literacy
- **Reductions in hospitalizations and other forms of costly, often unnecessary care**
Among the 20% with high depression/anxiety/stress and who account for large proportions of hospitalization, reduced depression/anxiety/stress and normalized hospitalization rates
- **Cost savings and cost-effectiveness**
55% to 93% probability of being cost-effective with greater likelihood if focused on those with greater need such as those with depression or poorer initial clinical status
- **Adoption by health systems as routine care**
A health care management organization expanded its peer support program from 11 original clinics to all practices in its system – over 26 in three states

Four Key Functions of peer support include: Assistance in daily management (“helping me do in my daily life what I planned with my doctor”), Social and emotional support (“helping me stay motivated and talking things out when I’m feeling stressed”), Linkage to clinical care (“making sure I do see the doctor when I should”), Ongoing availability of support (“because my diabetes is for the rest of my life”). These provide a framework for flexible standardization and adaptability in scaling up peer support in diverse populations and settings around the world.¹

Humanizing Health Care

The features of peer support that make it a humanizing force in health care include the amount of time that peer supporters can devote to patients, shared experiences between supporters and those they help, and a keen understanding of the patient’s culture, community, and circumstances. It humanizes health care because it is grounded in the circumstances and experiences of those it helps.

Peer support harnesses **inter**personal relationships to activate **intra**personal change. It embodies widely recognized person-centered principles – patient choice and empowerment, shared decision making, cultural competency, strengths-based problem-solving, and programming that is adaptive to the needs of patients as they navigate their health and their lives. By demystifying health care and supporting patients in the ways that matter the most to them, peer support creates a secure environment that situates patients at the center of their health care.

Meeting Present and Future Health Care Challenges

Peer support is poised to tackle the most pressing issues in health care today, such as mental health, multimorbidity, and the reduction of unnecessary and costly care.

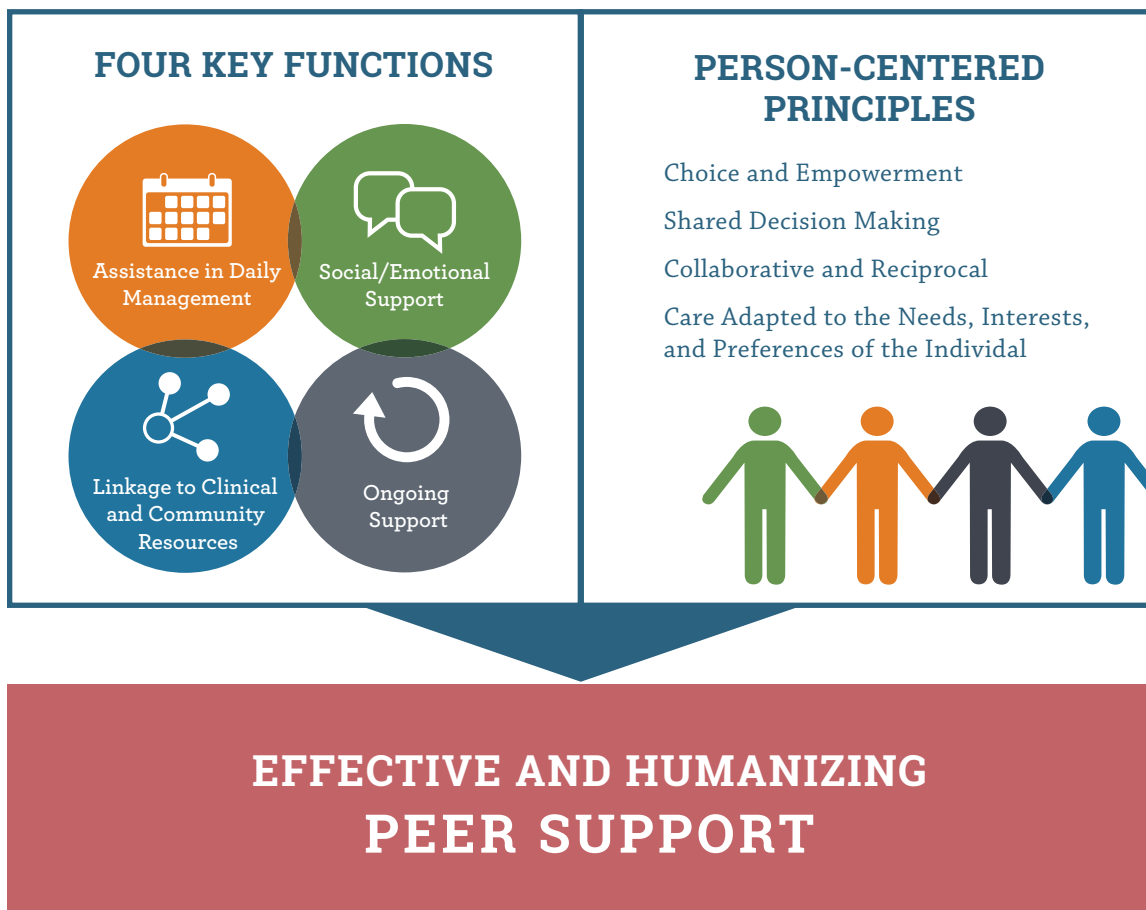
Around the world, those who have the greatest needs for care often do not receive it. Peer support fills these gaps by reaching those who are isolated from “mainstream” information, supporting individuals who encounter financial or logistical barriers to care, helping providers better understand their patients, and encouraging people to sustain healthy living patterns in spite of local environments – “food deserts,” high crime neighborhoods, etc. Peer support engages “hardly reached” populations and is most effective among vulnerable populations – individuals with low health literacy, those who tend not to take medications prescribed for them, those not practicing self-management of their chronic diseases, and those whose emotional distress complicates their care.²⁻⁵

Mental health or behavioral health problems can be debilitating as they often undermine the self-management of diseases like diabetes.⁶ Peer support programs improve quality of life and reduce costs for those with varied psychological problems including depression, schizophrenia, and bipolar disorder.⁷⁻⁹ These programs also alleviate mental health problems that complicate the care and outcomes of multimorbid health conditions like diabetes.^{10,11}

Innovation is no stranger to peer support. Across the world, peer support programs have been at the forefront of adopting eHealth innovations. Smartphones, automated systems, and social media platforms can extend peer support to more people and integrate the efficiencies of high tech with the humanizing force of personal contact.

Policy and execution are key to the future of peer support. In the United States, the Affordable Care Act provides many funding opportunities for community health workers, but implementation requires policies and guidelines that weave together standardization and quality assurance with the flexibility, community roots, and person-centeredness of peer support. Identifying how to certify programs and individual peer supporters will be critical to recognition and reliable funding.

The broad evidence that peer support works and has the capacity to tackle important health challenges signals to us that the time has come to extend it from small samples to entire populations. Peers for Progress, the National Council of La Raza, and our collaborators stand ready to help guide the comprehensive, programmatic, evidence-based and community-oriented, person-centered programs¹² that will achieve the promise this report details.



PART I

Peer Support Works

Social Support and Health

For many who have taken an undergraduate psychology course, the figure at right will be familiar. In a 1950s study, Harry Harlow showed that, although a wire surrogate mother was the source of food, young monkeys spent more time on a warmer, cuddlier terry-cloth surrogate. Counter to views that affectional bonds are just based on their association with food, Harlow argued that “contact comfort” and the relationships that provide it are valuable in and of themselves.¹³



Harlow's observations laid the foundation for decades of research on social support and human health. For example, among healthy volunteers exposed to viruses, Sheldon Cohen showed that the variety of their social connections predicted whether or not they got a cold!¹⁴ Among women with cancer, high levels of social support were associated with lower levels of indicators of invasive and metastatic growth.¹⁵ These fundamental roles of social connections are reflected in studies showing that lack of social support carries as high a risk of death as being a smoker.^{16,17}

The fundamental and profound role of social connections in our health has important implications for peer support programs:

- Peer support is rooted in a basic and powerful characteristic of human beings.
- Peer supporters make important contributions simply by “being there.”
- Health care systems must recognize that social and peer support can have major impacts on the health of those they serve.
- To achieve those major impacts, peer support must be taken seriously, not as a marginal activity to market other services, but as a core component of health care and prevention.

General Evidence of Benefits of Peer Support

Peer support is commonly provided by “community health workers,” “lay health advisors,” “*promotores*,” “patient navigators,” “health coaches” and individuals with a number of other titles.¹⁸⁻²¹ Although they are known by many names and frequently have specialized functions, delivering peer support is a central part of their roles. So we consider peer support to be a key point of convergence among them. The table on the next page describes some of the benefits noted for peer support in health and health care.²²⁻³²

Across nineteen scholarly reviews^{18-20,22,34-51} an average of 65% of papers found benefits of peer support. A current review in the 2014 Annual Review of Public Health²¹ identifies many contributions of community health workers to basic health needs (e.g., childhood immunizations) in low-income countries, to primary care and health promotion in middle income countries, and to disease management in the United States and developed economies.

Another review⁵² included 25 papers from the US, eight from Canada, six from the UK, three each from Pakistan and Bangladesh, and one each from Brazil, Mozambique, and New Zealand. The health issues addressed included Pre/Post-Natal Care (15 papers), Diabetes (7), Asthma (5), Cardiovascular Disease (5), HIV (4), Smoking Cessation, Mental Health, and Drug Use (2 each). Across all 47 papers, 39 (83%) reported significant between-group or pre-post changes showing benefits of peer support.

Because much of the work of Peers for Progress focuses on diabetes, we examined papers addressing peer support in diabetes published between January 1, 2000 and June, 2014. Among a total of 22 studies, 21 showed statistically significant evidence of benefits of peer support.⁵³⁻⁷⁴ Seventeen of the papers provided pre- and post-intervention measures of Hemoglobin A1c (HbA1c) as a measure of glucose

CONTRIBUTIONS AND BENEFITS OF PEER SUPPORT

- **Link people** to share knowledge and experience
- Provide **health education** to individuals and communities
- Give **practical assistance** to achieve and sustain complex health behaviors like those of diabetes management
- Offer **emotional and social support**
- Help people **cope with the stressors** that accompany health problems
- Help people **access and navigate clinical care** and **community resources** that they need
- Increase **individual and community capacity** for understanding health problems and promoting ways to address them
- **Advocate** for patients and their communities
- Build **relationships based on trust** rather than expertise
- Build **cultural competence** of health care providers
- Improve **two-way communication** between patients and health care teams
- Help **address complex multi-morbidities**, serving as a bridge between primary care and behavioral health

REFERENCES: 23,24,27,28,31,33

control.^{53-55,57-65,67-69,75,76} The average HbA1c declined significantly from 8.63% prior to intervention to 7.74% after intervention, a difference far in excess of the half point (e.g., 8.63% to 8.13%) that the diabetes community generally sees as clinically meaningful.

Worldwide, groups are recognizing, calling for, and promoting peer support.⁷⁷⁻⁸⁰ The Earth Institute has called for 1 Million Community Health Workers in Sub-Saharan Africa⁸¹ and the World Health Organization (WHO) emphasizes Community Health Workers in its Global Health Workforce Alliance.⁸²

We (clinicians) have the advantage of a complete team, but what we lack is time. A key advantage of the peer supporters is time. They could go to the field on Sundays, or go to the houses on Saturdays and cook. What can be done to assist the clinic work outside of the clinic – that is crucial.

JEAN CLAUDE MBANYA, YAOUNDÉ, CAMEROON

Cost-Effectiveness

Rapidly expanding evidence is showing the cost-effectiveness of peer support. This is summarized below.

COST-EFFECTIVENESS OF PEER SUPPORT

Encourage Program in Alabama²

- 59% probability of being cost-saving
- 55% to 93% probability of being cost-effective, depending on those included, e.g., higher likelihood of being cost-effective for those with greater need, e.g., those *with* depression or *poorer* baseline clinical status

Federally Qualified Health Center in Denver³²

- Shifted costs from urgent care, inpatient care, and outpatient behavioral health care
- Increase utilization of primary and specialty care visits
- Return on investment = \$2.28 for every dollar spent

Diabetes Initiative of Robert Wood Johnson Foundation⁸³

- Cost per Quality Adjusted Life Year (QALY) = \$39,563 (well below \$50,000 criterion for good value)

Asthma Community Health Worker Project with Medicaid Covered Children in Chicago⁸⁴

- Three to four home visits over 6 months and liaison with care team
- Return on investment = \$5.58 for every dollar spent

Lifestyle Modification for Low-Income Latino Adults with Diabetes⁵

- Community Health Workers and nurse educators: home visits, self-management education, individual counseling
- \$10,995 to \$33,319 per QALY
- Especially cost-effective among those with high initial blood sugar levels

Preventing Rehospitalization in Schizophrenia, Depression, Bipolar Disorder⁷

- Recovery Mentors provided individualized support
- Over 9 months: 0.89 vs. 1.53 hospitalizations, 10.08 vs. 19.08 days in hospital ($p < 0.05$)

Reducing Depression/Anxiety Disorders in India⁹

- Education about psychological problems, ways of coping, and interpersonal therapy delivered by lay health counselors with primary care and psychiatric back-up
- 30% decrease in prevalence, 36% decrease in suicide attempts, 4.43 fewer days no work/reduced work in previous 30 days
- Intervention was cost-effective and cost-saving



Evidence from Peers for Progress: Feasibility to Adoption

In 2009, Peers for Progress funded 14 grants to evaluate and demonstrate the value of peer support in diabetes management around the world. The results from these projects and from additional collaborators document the effectiveness of peer support and a range of other features pertinent to its practicality and adoption in health care. Following a continuum from Feasibility to Spread and Adoption, the next sections detail the evidence for peer support.





Feasibility

Peer support makes sense on an intuitive level and has been shown to be practical in a wide range of settings.

- Across 14 projects funded by Peers for Progress, many in under-resourced settings, all were able to implement the planned peer support programs. Regardless of socioeconomic constraints and cultural variations, peer support proved to be feasible in every setting, population, and country.
- Researchers at the University of Michigan showed the feasibility of training peer leaders to provide diabetes self-management support. In a 46-hour group training program, attendance was 100% and all trainees demonstrated competency for key objectives (e.g., active listening). The project demonstrated that nonprofessionals can be trained to deliver interventions that are traditionally implemented by health care professionals.⁸⁵
- Nine recipients of grants from the Taiwanese Association of Diabetes Educators were able to develop and implement peer-led, ongoing support programs.
- At the conclusion of a 2-month pilot in the UK, participants expressed the desire to continue meeting with peers, demonstrating the value of the program to people with diabetes.⁸⁶

For many, a key aspect of feasibility is affordability, “Could we ever afford such programs?” A global perspective is helpful in this regard. In Thailand, Village Health Volunteers have been a part of the national health system since 1978, a system that spends the equivalent of \$215 per capita on health care (in 2012), relative to \$8,895 per capita in the US.⁸⁷ In Pakistan, an estimated 96,000 Lady Health Workers support maternal and child services through the primary care system that reaches an estimated 80% of Pakistan’s rural population.^{9,88}



Reach and Engagement

Engaging patients in their care is a major challenge in many chronic diseases such as diabetes, and is even more difficult for patients with less education and lower income. The 14 projects funded by Peers for Progress were able to reach diverse audiences – many of them sharply disadvantaged – and retain them throughout the interventions. Across the projects, the average retention was 78.6%. The average initial HbA1c across sites was 8.41% – as high as 11.1% at one site – indicating these projects were reaching those with substantial needs for better management and not merely preaching to the choir.

- In Cambridgeshire, UK, 1,299 people enrolled for the peer support program and 167 of these were trained as peer support facilitators.
- Focusing on establishing and maintaining community partnerships, a program for low-income African Americans in underserved, rural Alabama communities engaged over 400 participants.⁸⁹
- In China, the Beijing Diabetes Prevention and Treatment Association has enrolled 3,500 people with diabetes from 50 cooperating hospitals, well on the way to its goal of 5,000.
- In San Francisco, the effect of health coaching was the same regardless of demographic or psychological differences. Patients from a variety of backgrounds were able to experience benefits of peer support.³
- *Compañeros en Salud* reached 89% of “High Need” adults (HbA1c > 8%, Psychosocial Distress, Physician’s Referral) and 84% of “Regular Care” patients at Alivio Medical Center in Chicago.⁹⁰
- Over a 6-month program in Cameroon, only 1 of 100 participants dropped out.

The diabetes population in China is over 1 million, but diabetes specialists only number 15,000. There is a huge gap and I think that peer supporters can help.

ZILIN SUN, NANJING, CHINA

Effectiveness

Across the 14 projects funded by Peers for Progress, HbA1c declined from an average of 8.5% to 7.7%, systolic blood pressure from 137 mmHg to 134 mmHg, and BMI from 32.0 to 30.9 kg/m².

- In Argentina, diabetes education and ongoing support implemented by peers was as effective as that implemented by professional health educators.⁵⁷
- A peer coaching intervention for low-income and ethnic minority patients with diabetes in a safety net health center in San Francisco substantially improved glucose control relative to controls.⁶⁸
- In Michigan, support provided by staff Community Health Workers or similar support by trained volunteers both showed sustained benefits in HbA1c and other clinical markers among Latino adults.⁹¹
- In Cameroon, the benefits of peer support included reductions in BMI (28.6 to 25.5 kg/m²), systolic and diastolic blood pressure (142.0 to 124.4, 84.4 to 77.7 mmHg), and HbA1c (9.6% to 6.7%).⁹²
- In Thailand, Village Health Volunteers were trained to include diabetes management in their work with individuals and communities. Evaluation indicated improved blood glucose and BMI along with healthy diet, exercise, self-efficacy, and general quality of life.^{92,93}
- In Uganda, individuals communicated with each other and a clinic nurse through a telephone/text network. Average HbA1c declined from 11.1% to 8.3% with the number in good glucose control increasing from 17% to 32%. Average diastolic blood pressure dropped from 85.39 to 76.27 mmHg. Participants also reported improved care from clinic staff, suggesting another benefit of peer support.⁹²
- In Nanjing, China, a peer support program that integrated resources and support from a hospital, community health centers, and medical student volunteers led to improved self-management behaviors, diabetes-related distress, and depressive symptoms.
- In the first 8 months of the “8760 Action” program of the Beijing Diabetes Prevention and Treatment Association, the percentage with good blood glucose control has increased from 48% to 64%.

If it were evaluated by the FDA, peer support would be approved. It works and we should use it whenever and wherever we can.

PAULINA DUKER, WASHINGTON, D.C.

14 RESEARCH PROJECTS OF PEERS FOR PROGRESS

ARGENTINA: Community-based comparison of patient education with patient education PLUS peer support. National Research Council of Argentina (CONICET) with the Centre of Experimental and Applied Endocrinology (CENEXA) and WHO Collaborative Centre for Diabetes: Juan Jose Gagliardino, MD

AUSTRALIA: Developing existing peer support group programs for national dissemination. Monash University and Diabetes Australia-Vic: Brian Oldenburg, PhD

CAMEROON: Community-based peer support intervention in Yaoundé. Health of Population in Transition Research Group: Jean Claude Mbanya, MD, PhD, FRCP

CAMEROON: Peer support in rural and urban districts. Centre for Population Studies and Health Promotion: Paschal Kum Awah, PhD

ENGLAND: Comparing group-based with individually provided peer support in Cambridgeshire. Cambridge University Hospitals NHS Foundation Trust, Institute of Metabolic Science: David Simmons, MD, Jonathan Graffy, MBChB, MSc, MD, FRCGP

HONG KONG: Peer support combined with automated telephone support. Asia Diabetes Foundation and Hong Kong Institute of Diabetes and Obesity, The Chinese University of Hong Kong: Juliana C.N. Chan, MD, FRCP

SOUTH AFRICA: Peer support “buddy” program based on effective HIV model among Xhosa women. University of Western Cape and Women for Peace with UCLA Global Center for Children and Families: Mary Jane Rotheram-Borus, PhD

THAILAND: Integration of Village Health Volunteers into existing health system among four rural villages. Mahidol University: Boosaba Sanguanprasit, PhD, MPH* & Chanuantong Tanasugarn, DrPH, MPH

* Now at Naresuan University

UGANDA: Peer champions using cell phone and face-to-face visits in rural and urban settings. Mulago Hospital with University of Wisconsin-Madison School of Nursing: Linda Baumann, PhD, APRN, BC, FAAN



Programs Based in the United States

ALABAMA: Community peer advisors for diabetes in rural Alabama. University of Alabama School of Medicine: Monika M. Safford, MD & Andrea Cherrington, MD, MPH

CALIFORNIA: Volunteer peer support intervention for Mexican/Mexican American adults along California-Mexico border. San Diego State University School of Graduate Public Health and Clínicas de Salud del Pueblo, Inc.: Guadalupe X. Ayala, PhD, MPH

CALIFORNIA: Impact of Peer Health Coaching on Glycemic Control in Low-Income Patients with Diabetes: A Randomized Controlled Trial. University of California at San Francisco, School of Medicine, Department of Family and Community Medicine: Thomas Bodenheimer, MD, MPH & David Thom, MD, PhD, MPH

MICHIGAN: Peer-led self-management support in “real-world” clinical and community settings among Latinos and African-Americans. University of Michigan Medical School: Tricia S. Tang, PhD* & Michele Heisler, MD, MPA

* Now at University of British Columbia

TEXAS: Peer support in an HMO setting in San Antonio. American Academy of Family Physicians National Research Network (with Latino Health Access, LA Net, WellMed Medical Group): Lyndee Knox, PhD & Wilson Pace, MD

The effects of peer support are already being felt in Asia even though there is currently no gold standard program in the region. Early findings show that program success is heavily based on responsiveness to culture.

**NAM H. CHO,
SUWON, SOUTH KOREA**

Local Sustainability

- Four years after the end of funding from Peers for Progress, Village Health Volunteers in Thailand were still implementing diabetes education and support for which they had been trained. Local Administrative Offices remain committed to providing financial and in-kind assistance, valuing the program's health benefits as well as its impact on building unity and a sense of belonging among the troubled populace.
- In South Africa, over two years following the end of funding from Peers for Progress, the program reported increased enrollment and success in recruiting local funding.
- In Cambridgeshire, UK, over 100 peer leaders and participants met at the end of the formal study to discuss ongoing organizational structure for the program. This has led to further funding from the UK government and collaboration with DiabetesUK to extend the program to eight areas in the Eastern region and West Midlands.

In some settings, the goal for sustainability may not be wholesale adoption of a program but, rather, incorporation of its key features in routine practice. In Uganda, for example, the clinic nurse now schedules patients who have been supportive of each other on the same day, sustaining their relationship and utilizing it to support their care.





Spread and Adoption

- Based on reports from doctors, nurses, and patients, WellMed, a health care management organization, has expanded its peer support program funded by Peers for Progress from 11 original clinics to all practices in its system – over 26 in three states.
- In *Clínicas de Salud del Pueblo* in southern California, the *Puentes* program became a model for addressing childhood obesity and helped guide improvements in systems of care, including provider training.
- In Argentina, a structured phone call system was adopted by *Obra Social del Personal de Edificios de Renta y Propiedad Horizontal*, a national social security organization to improve prevention, care, and management of diabetes and other cardiovascular risk factors.
- The Affordable Care Act has stimulated the evaluation and adoption of community health worker (CHW) and other peer support interventions to achieve the Triple Aim of improving quality of care, improving population health, and reducing costs – “right treatment at the right time at the right price.” The emphasis on team-based, patient-centered care has encouraged medical practices to begin employing CHWs as part of a strategy to improve patient-provider communication, reduce costs, and improve quality of care. Several projects that are evaluating the impact of CHW integration in patient-centered medical homes are well underway in New York City, Boston, and Chicago.

Variety and adaptability are critical to achieving scalability. It's usually not a matter of something works or it doesn't. We need to look at functionality – what models work for which groups. Scalability needs all the options on the table.

**BRIAN OLDENBURG,
MELBOURNE, AUSTRALIA**



PART II

Humanizing Health Care

IN A HEALTH CARE CLIMATE that can sometimes feel abstract, cold, and alienating, peer support stands out as a humanizing force that can help patients feel secure, respected, and empowered. More than just a friendly face, peer supporters help patients make sense of their health conditions and help them in practical ways that stretch beyond the confines of health care.

The features of peer support that make it a humanizing force include the amount of time that peer supporters can devote to patients, shared experiences between supporters and those they help, and a keen understanding of the patient's culture, community, and circumstances. Peer support is essentially person-centered, basing decisions on the perspective of the whole person, not their health challenge alone. Objectives are considered within the multiple roles and interests of the individual – grandparent, retiree, widow, gardener, church choir member, tennis player, etc.

With one foot in the community and the other in the health system, peer supporters can advance the system's goals (e.g., improving clinical outcomes, increasing efficiencies, reducing hospitalizations, etc.) while remaining oriented to the needs of the community and individual. Protocols and objectives are a good starting point for the work that peer supporters carry out, but strong principles of peer support are needed to guide the growth of constructive peer relationships.

Two sets of characteristics anchor the humanizing effect of peer support. First are Key Functions that provide for both flexible standardization and adaptability to needs of individuals as well as their cultures, communities, and health care systems. Second are Person-Centered Principles of peer support.

FOUR KEY FUNCTIONS FOR FLEXIBLE STANDARDIZATION

In developing the framework for Peers for Progress, it became obvious that no single curriculum or program model would be either acceptable or effective across world cultures, countries, and settings. At a WHO consultation in Geneva in 2007⁹⁴, leaders from around the world advised that, while local tailoring would be essential, the key features of peer support were universal. From this, **Four Key Functions** emerged, which follows a model of standardization by function, not content.

- **Helping people apply disease management or prevention plans in daily life:** Simple objectives like “exercising 150 minutes a week” or “eating more fruits and vegetables” sound pretty straightforward in the doctor’s office, but often turn out to be difficult to put into practice. The peer supporter helps turn these into specific plans that fit in with people’s lifestyles and circumstances.
- **Social and emotional support:** Giving encouragement in the use of skills, helping people deal with stress, and being available when people need someone to talk to.
- **Linking individuals with clinical, community, and other resources:** Serving as a liaison between patients and clinical care, motivating patients to communicate and assert themselves in order to obtain regular and quality care, helping to identify local resources for buying affordable, healthy food, or to find safe, attractive places for physical activity.
- **Ongoing availability of support:** Diabetes and other chronic diseases are “for the rest of your life” and needs change as motivation diminishes or health problems emerge. Flexible, accessible support needs to be available to patients whenever the need arises.

The doctor and nurse help me decide what to do. The Community Health Worker helps me figure out how to do it.

A WOMAN LIVING WITH DIABETES



These Four Key Functions provide a template for standardizing and promoting peer support worldwide while leaving room for flexible adaptation to meet individual needs as well as those of the community, health system, or culture being served.⁹²

PERSON-CENTERED PRINCIPLES

Across the world-wide experience of peer support in all its many forms, principles have emerged that capture its person-centeredness:

- Affirming the individuality of people in the terms of their lives and goals
- Adopting and working with the individual's perspective in living life, not just preventing or managing a disease
- Providing choices
- Collaborative rather than prescriptive
- Peerness: non-hierarchical and reciprocal relationships
- Sense making: helping people understand their health or illness and how it fits with their life
- Security: reducing the insecurity that people so often feel around health and health care
- Community-oriented
- Teaching practical skills when necessary, not just leaving the individual to struggle with complex and important things on their own
- Empowering people and building their self-efficacy

I think people do better in a place of security and solidarity, and that this has a greater impact on health than technical knowledge.

**CHARLIE ALFERO,
SILVER CITY, NEW MEXICO**

Together, the Four Key Functions and Person-Centered Principles provide a model for **effective and humanizing peer support** that is flexible and adaptable to individuals as well as varied settings, populations and health care systems.¹

CULTURAL TAILORING

Far from a 'one-size-fits-all' approach, one would be hard pressed to find two peer support programs that are identical. Tailoring includes behaviors (e.g., eating patterns or dietary customs), social contexts (e.g., family and gender roles), and style of support (e.g., appropriateness of eye contact, nondirective and directive support^{95,96}). Because peer supporters generally come from the communities they serve, peer support is naturally shaped by the specific cultural, organizational, and historical factors in those communities.

Village Health Volunteers in Thailand took their new training in diabetes management and adapted it to cultural factors (e.g., caring, kinship/seniority, openness to change, pragmatism, need for compromise, fun-loving) and local lifestyle (e.g., agricultural, strong social networks, adherence to traditional practices, self-reliance and strong community ties). Working at multiple levels, the Thai model utilizes one-on-one meetings to discuss specific behaviors for diabetes self-management, home visits for social and emotional support, linking people with local health centers, and the national health system's focus on continuity of care for chronic diseases.

Peer Support in the Latino Tradition: *Promotores de Salud*

The rich history of the *promotores de salud* model traces its roots to 1950s Latin America, along with the rise of Latin American labor rights and liberation theology. *Promotores* served as community organizers that empowered the poor against the landowning, ruling class, while gaining the trust of those in most need.¹²⁸ Much of this was inspired by the critical education theory of Paulo Freire who emphasized the importance of education, embracing the perspectives of the poor and disadvantaged, and helping marginalized populations gain influence over their lives through understanding and taking action to address the forces that surround them. From this perspective, *promotores* taught community members how to address health issues on their own. As trustworthy community members, *promotores* thrived throughout Latin America. They became known as helpers and healers, bringing health care to the poor and addressing the unequal distribution of health resources.



The *promotores* model is an approach to peer support in health promotion that enhances the strong, existing social helper networks common in Latino culture. In addition to the social networks that connect Latino communities, strong family values have generated a peer support model that promotes social solidarity, family-centeredness, and social and community engagement. Thus, *promotores* serve individuals, families and communities together.

Over the past 25 years, the use of the *promotores de salud* model to promote health and prevent disease has become increasingly popular in the United States, especially among the growing, underserved, Latino community.¹⁸ Culturally relevant and linguistically appropriate methods for promoting health, preventing disease, and increasing access and quality of health care are critical to improving this population's health status. The *promotores de salud* model is a promising approach to reach this marginalized and vulnerable population. Along with many others in the Latino community, the National Council of La Raza and its Institute for Hispanic Health have a leading role in advancing the *promotore* approach through many of their almost 300 affiliates around the country.

Contributed by Manuela McDonough

The Many Faces of Peer Support: Diverse Health Care Roles

In real-world settings, the majority of peer support is provided by people with other names; Community Health Workers, *Promotores*, Health Coaches, Lay Health Advisors, Patient Navigators, Doulas, Lady Health Workers in Pakistan, or Village Health Volunteers in Thailand. Across all of these, Peers for Progress sought to emphasize the importance of peer support by focusing on its principles and functions rather than the names peer supporters may take. For convenience, we use the term “peer supporter” for all who provide it.

Many who provide peer support, however, may be involved in other activities including community organization and capacity building, advocacy, basic health care, or a variety of other services.

Peer support may be delivered formally as health education and support, or informally when given by a friend that comforts and advises. It can take many forms – phone calls, text messaging, group meetings, home visits, going for walks, and even grocery shopping. Mutual support groups (e.g., Diabetes Sisters or the Sisters Network among African American women with breast cancer) have been developed by dedicated volunteers, filling a vacuum in unmet needs for people living with chronic conditions. In Australia, an automated interactive telephone system provided what might be seen as “synthetic peer support” to improve diabetes management in an intervention during which patients received individualized feedback and encouragement that was individually tailored from a bank of over 2,000 distinct messages.

In addition to the many individuals who provide peer support, it is important to consider other health care professionals. Peer support does not compete with or replace the role of others. Instead, it complements and enhances health care delivery to assist people through the emotional, social, and practical assistance necessary to manage the disease and stay healthy. As one physician at Gateway Health Center in Laredo, Texas put it, “The program [has] made my life easier – I can focus on being a doctor.”⁹⁷



Program Model: Thai Village Health Volunteers

Acclaimed as “one of the most outstanding legacies of primary health care in the past three decades”, the Village Health Volunteer (VHV) program has been instrumental in contributing to the progress of health development in Thailand. The VHV program first began in the 1960s. Since that time, with the growing focus on primary health care and the “health for all” movement, the VHVs have been expanded to every province and village in Thailand. In 2010, there were more than 800,000 active volunteers providing coverage to over 12 million households in the country.



*Exercise as Individual and
Community Resource*

THEIR PLACE IN THE COMMUNITY

VHVs are well respected by the communities in which they live. After acceptance through a formal application process, each volunteer receives three days of pre-training in health promotion, disease prevention, and health education and subsequent training as needed. Following these trainings, each VHV supports approximately 10 households, linking their community and the health care system. Their health promotion activities range from advocating for simple preventive measures, such as measuring blood pressure and providing information, to fostering wider health-related community development, capacity building, and health interventions. The picture at above shows an example of finding synergies between individual health and community needs – an old bicycle hooked up to a generator drives a pump to irrigate a community vegetable garden, while providing a resource for healthy exercise!

AN EVOLVING PROGRAM

With advances in Thailand’s development and changes in demographics, the focus of VHV activities has shifted from preventing transmission of infectious disease, such as malaria and tuberculosis, to managing chronic diseases and caring for the elderly. For instance, a recent initiative funded by Peers for Progress extended the skills of VHVs to address diabetes in many communities. After receiving booster trainings in diet, exercise, stress management, communication skills, and motivation, VHVs and health staff worked with community members to identify health and behavioral challenges associated with diabetes, set appropriate goals, and identify ways to achieve these goals. Interventions at each site were designed by taking into consideration the characteristics of the people, VHVs, and local traditions.⁹⁸ With health benefits for community members and strong support from local administrative bodies, the projects were heralded as a success and likely to continue in other villages across Thailand.

DIRECTIONS MOVING FORWARD

Spending only 3.5% of its GDP on health care, Thailand and its VHV model have achieved remarkable results in disease prevention and health promotion markers. Endowed with an inherent ability to understand the needs of their community, take action, and provide support for individuals, VHVs have been key leaders in connecting their communities to primary care. Future research should concern itself with how other aspects of the program, such as supervision from public health officials and monetary incentives, are affecting the activities of the VHVs and the support provided to community members.

Contributed by Boosaba Sanguanprasit, Chanuantong Tanasugarn, and Sarah Kowitt

Under a Big Umbrella: Community Health Workers

In the United States, Community Health Workers (CHWs) reach out to their peers to support and empower them to achieve healthier lives and to build healthier communities. Their experience-based expertise,⁹⁹ enhanced by evidence-based training, ensures that CHWs reach those they serve while also strengthening the reach and cultural capacity of health and human service systems. According to Joel Meister, a visionary early leader in the field, CHWs are bridges that help to create a democracy of knowledge by facilitating reciprocal flow of information and power between communities and systems.

As articulated in the National Community Health Advisor Study,^{100,101} CHWs' work in both clinical and community settings takes many forms and addresses diverse health and community development issues, including:

- Cultural mediation between communities and health and human services systems.
- Informal counseling and social support.
- Advocating for individual and community needs.
- Building individual and community capacity.
- Assuring people get the services they need.
- Providing culturally appropriate health education.
- Providing direct services.

CHWs bring to these a range of skills in communication and interpersonal relations, advocacy, knowledge about health and health care, service coordination, organizational development and capacity building, and teaching.

The integration of community members serving each other and their communities has a long and rich history. Community Health Representatives (CHR) serve US Native American tribes and are members of the oldest and, at one time, the largest unified CHW workforce in the nation (today, tribes often independently administer CHR programs). Bridging the US and Latin America, *Promotores de Salud* are also a vital part of the field's past and present (see separate box on *Promotores*). CHWs in Brazil are closely linked with their national health service and among the strongest CHW programs to be found worldwide.¹⁰² Older programs in Russia, China – the “Barefoot Doctors,” and in Central America create a rich history for the field.¹⁰¹ In African nations, CHWs are at the forefront in the fight against HIV/AIDS today. In Asia, countries such as India count on CHWs for supporting emerging programs addressing chronic disease management. Across the globe, CHWs, building on the traditions of neighbors helping neighbors, are there reaching out: teaching, listening, supporting – working for individuals, families, and communities to change social determinants of health.





The National Community Health Advisor Study,¹⁰⁰ conducted throughout the US in the mid-1990s, reported finding more than 60 titles for CHWs, including Peer Educator and Peer Counselor. Today, more than 100 terms are listed on a California website dedicated to CHWs,¹⁰³ reflecting the diversity in the field. However, CHWs share important core elements as expressed in a consensus definition from the CHW Section of the American Public Health Association (APHA):

A CHW “is a frontline public health worker who is a trusted member of and/or has an unusually close understanding of the community served. This trusting relationship enables the CHW to serve as a liaison/link/intermediary between health/social services and the community to facilitate access to services and improve the quality and cultural competence of service delivery. A CHW also builds individual and community capacity by increasing health knowledge and self-sufficiency through a range of activities such as outreach, community education, informal counseling, social support and advocacy.” (American Public Health Association CHW Section, Policy Statement 2009-1, Nov. 2009)

Central to the power of CHWs are their shared community ties, socioeconomic status, and cultural and life experiences. These enable them to establish rapport and trust with community members in order to educate, support and advise them.

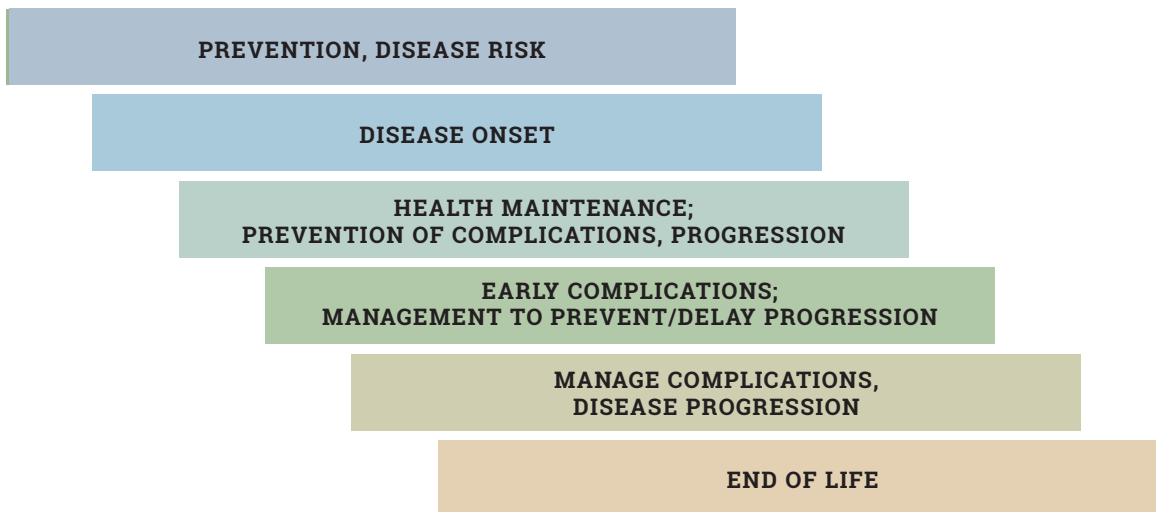
For many years, those in the field have sought to develop a unifying umbrella title and promote CHW self-determination as essential strategies and objectives. With its inclusion of numerous provisions for reimbursement of CHWs, the Affordable Care Act has furthered interest in clarifying the roles and responsibilities of CHWs. In 2010, the US Department of Labor established a definition and classification for CHWs that is currently under review. Many in the field are promoting adoption of the APHA definition cited above. Current developments in these areas are detailed at the website of the Project on Community Health Worker Policy and Practice of the University of Texas School of Public Health (sph.uth.edu/research/centers/ihp/community-health-workers/) and the APHA CHW Section (www.apha.org/membergroups/sections/aphasections/chw/).

Contributed by E. Lee Rosenthal and J. Nell Brownstein

Peer Support Across the Lifespan

Perhaps the greatest challenge of chronic diseases, such as diabetes, stems from the fact that they will be with people for the rest of their lives. Yet, our health care models do not come to grips with this reality. In diabetes care, for example, there is much attention to the needs of youth and their families, and to the needs of the recently diagnosed. Much less thought is given, however, to the distinctive educational and psychological needs of individuals in the *decades* following their diagnoses, or following retirement, widowhood or other common milestones.

LIFESPAN PERSPECTIVE



Taking a lifespan perspective, phases of living with diabetes include: disease onset, disease management and prevention of complications, management of complications, and disease progression.¹⁰⁴ Discussion at the conference added two additional phases: prevention as the first phase and end of life as the last. The resulting model, generalized for chronic diseases, is shown above.

These phases can help structure peer support interventions to consider different self-management needs as they may emerge. For example, social and emotional support may be more important amidst complications and toward the end of life, while assistance in implementing self-management plans may be more important in prevention and initial coping with a recent diagnosis. However, thinking about stages should not lead to an “either/or” perspective – the needs of all people will generally entail a mixture of the functions and principles of peer support.

We tend to medicalize things a bit too much and lose sight of the fact that people don't want to be patients. Health care is here to help people live as well as they can for as long as they can. This is something peer supporters can provide that physicians and nurses cannot.

**MONIKA SAFFORD,
BIRMINGHAM, ALABAMA**

Continuum of Learning and Ongoing Support

Living with a chronic disease is an ever-changing process that requires continuous adaptation and learning. After learning about medications, diet, physical activity, and making the most of doctor's visits, people with chronic diseases need ongoing support to figure out how these lessons fit into the realities of their own lives. Life circumstances are subject to change and peer support can help people cope and adapt to those changes.

The continuum of learning is reflected in the US National Standards for Diabetes Self-Management Education and Support,¹⁰⁵ that deemed support to be a continuation and extension of diabetes education. While a diabetes education course may come to an end, the learning process never stops.

In addition to education, coaching, and navigation, one of the most important lessons that peer supporters can impart is excitement about understanding one's health and health problems. This positive attitude can empower people with chronic diseases to exercise more control over their self-management, which will strengthen their resilience when confronted by challenges and setbacks.

Education is a process and so is diabetes, so health authorities have to learn that we need to keep education as a process and not a course.

People need support. We can't just give a 6-month class and then withdraw support. Patients just need someone continuously there with them.

We are modifying attitudes, behaviors, ways of living, not just giving knowledge—that is the goal of our education process.

**JUAN JOSÉ GAGLIARDINO,
BUENOS AIRES, ARGENTINA**

Population Focus

The Triple Aim in health care reform charges us to promote the health and well-being of entire populations. Health care providers are accelerating their community engagement efforts to reach high-risk populations and ensure that people don't fall through the cracks.

Peer support has a major role in these efforts by engaging populations that many health care initiatives often fail to reach. In a project supported by Peers for Progress in California, peer supporters were **most** effective in reaching those who were **least likely** to take their medications as recommended at the start of the program.³ In Michigan, peer support was **most** effective among those who started out at **lower levels** of health literacy.⁴

PART III

Meeting Present and Future

Health Care Challenges



Integrated Management of Chronic Diseases and Behavioral Health

Chronic diseases are seldom confined to physical problems. Those with diabetes are twice as likely to be depressed as those without the disease, and symptoms of depression are present among almost one third.¹⁰⁶ Among patients with coronary heart disease, 15% to 20% meet criteria for major depression¹⁰⁷ and an additional 20% have elevated symptoms.¹⁰⁸ Over one third of cancer patients have anxiety disorders and/or depression.¹⁰⁹

Psychological problems, from heightened distress to serious psychopathology, compromise self-management behaviors and exacerbate disease. Among patients with diabetes, depression is associated with poor blood sugar control and decreased adherence to medical treatments.¹¹⁰ However, integrated treatment of depression and diabetes can improve both.¹¹¹ Similarly, treatment of depressive symptoms among patients with coronary heart disease improves cardiovascular indicators.¹⁰⁸

The co-occurrence of psychological problems and physical illnesses accounts for a major portion of unnecessary suffering and avoidable costly care around the world.

Following the model on the next page, a variety of genetic and epigenetic factors in early development, along with social, psychological, and community influences interact to provoke depression, psychological problems, diabetes, and other illnesses.¹¹² If individuals are disadvantaged with regard to a number of factors in this “Complex of Developmental, Biological, and Psychosocial Determinants,” then developing some chronic disease as well as some psychological disorder is highly likely. The “phenotypic expression” of the complex varies, but the likelihood of developing multi-morbidities is high.

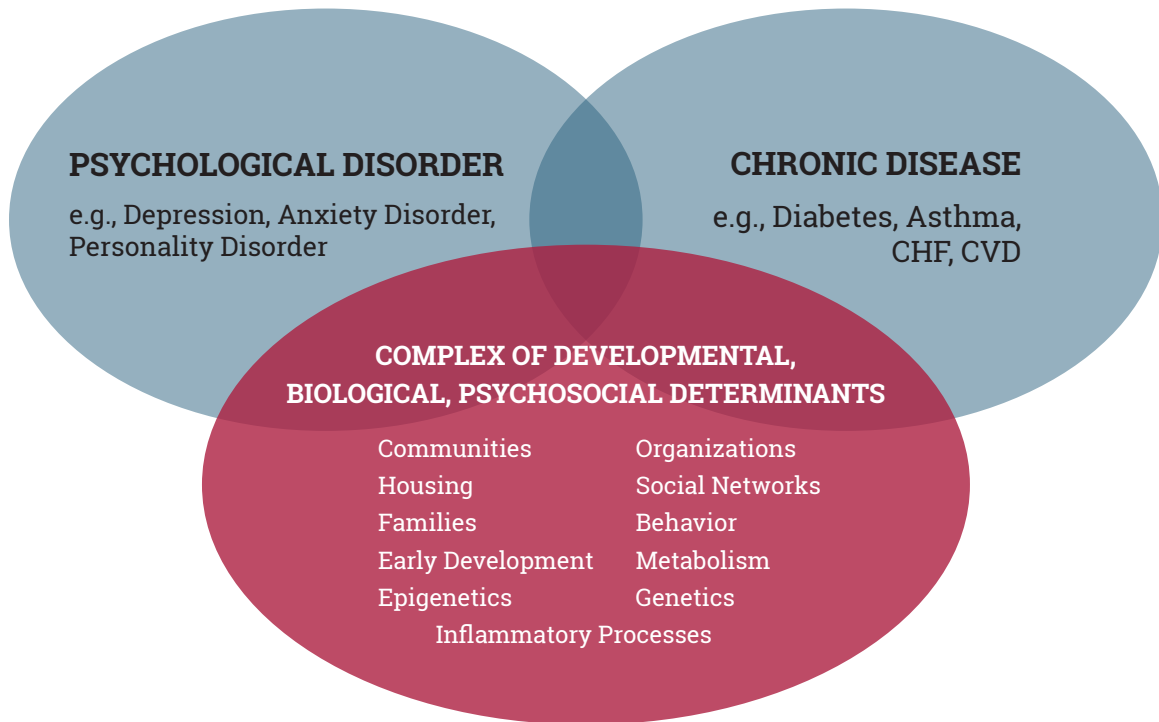
Peer support is one strategy to address this underlying complex that causes psychological problems and illnesses.^{6,11} Frequent, affirming, and pleasant contact from a peer supporter¹³ has been especially helpful to those experiencing social isolation and emotional distress.¹¹³ Studies also indicate consistent benefits of peer support for depression as compared to usual care.⁴⁰

In a major study in Pakistan, Lady Health Workers implemented an educational and problem-solving intervention¹¹⁴ for women who were depressed during the third trimesters of their pregnancies. The intervention reduced post-partum depression by about

Emotional support is important. In a study of diabetes patients with and without complications, those with complications were more likely to live alone.

**JUAN JOSÉ GAGLIARDINO,
BUENOS AIRES, ARGENTINA**

CHRONIC DISEASES, PSYCHOLOGICAL DISORDERS, AND THEIR BIOSOCIAL INFLUENCES



50% relative to controls.⁹ In India, peer support for depression, anxiety and other mental health problems also included education about these psychological problems and strategies for coping with them. These services were delivered by lay health counselors with back-up by primary care and monthly consultations from psychiatrists.¹¹⁵ This led to a 30% decrease in depression and other common mental disorders, a 36% reduction in suicide attempts or plans, and reductions in days out of work.⁸

In the US, Medicaid enrollees who had received peer support and regular mental health services were less likely to be hospitalized and more likely to achieve crisis stabilization than a comparison group who received only the mental health services.¹¹⁶

With support from Peers for Progress, Juliana Chan and her colleagues in Hong Kong examined the impacts of peer support on diabetes-related distress. The base of the program was JADE,^{117,118} a systematic model of high quality clinical care incorporating many of the same features as popular models such as Wagner's Chronic Care Model^{119,120} and the Patient Centered Medical Home.^{121,122} Participants all received JADE, and half were randomly selected to receive PEARL, telephone-based support provided by trained peer supporters. The results were striking. Among the 20% of the sample who met criteria for heightened depression, anxiety or stress,¹²³ PEARL substantially reduced all three. Still within this subset of distressed individuals, those who did not receive PEARL showed greatly elevated rates of hospitalization. Those who received PEARL, however, had the same levels of hospitalization as the rest of the sample.¹⁰ In effect, PEARL reduced distress and lowered hospitalization rates to normal among the one-fifth of patients with high levels of depression, anxiety, and stress that would otherwise account for a disproportionate amount of hospital care.

PEARL was just designed to assist diabetes management, not to reduce emotional distress. However, it achieved substantial effects on distress and associated hospitalizations. At a symposium for the International Society for Affective Disorders in Berlin in 2014, Peers for Progress investigators Michele Heisler and Brian Oldenburg joined Chan in describing substantial improvements in emotional status through peer support interventions that had originally been designed only to address diabetes management.¹¹ So, harkening back to the fundamental value of social contact discussed at the beginning of this report, peer support may have generalized benefits in reducing the distress that so often accompanies and complicates health problems.

Clinical factors were not the star here; it was the social and emotional measures that showed the greatest change and improvement. Even among groups that are already well controlled, there is still room for emotional benefit.

WILSON PACE, DENVER

Reaching the Hardly Reached

A major challenge of health care around the world is to reach the “hardly reached” individuals whom health care and prevention too often fail to engage. As shown by Peers for Progress investigators and community health worker programs worldwide, these interventions reliably reach the targeted populations time and time again. In St. Louis, “Asthma Coaches” were able to engage 90% of mothers of Medicaid-covered children who had been hospitalized for asthma. The coaches sustained that engagement over a two-year intervention and reduced rehospitalization by 50%.¹²⁴ As noted in the previous section on *Population Focus*, peer supporters were effective in reaching those who were least likely to take their medications³ or who started out at low levels of health literacy.⁴

eHealth Peer Support

eHealth, whether through telephone, text, the web, social media, or automated technology, extends the support network provided by peers. These technologies allow peers to deliver support across geographic distances and respond to patients in real-time, making support more accessible and convenient. For patients with rare diseases, eHealth may present their only option to find other patients with the same condition. Providers and researchers are pressing for the integration of eHealth applications and electronic medical records, which promises to improve patient monitoring and generate a wealth of data.

Peers for Progress investigators worldwide have utilized mobile technologies to provide support for patients. For example, texting and telephone contact was used extensively in Uganda and automated text prompts were used in South Africa.⁹² In remote areas of Australia, Telephone Linked Care¹²⁵ provided messages and reminders that were personalized according to individual self-management and clinical measures, all of which were monitored through data entered in patients’ smartphones. HbA1c values declined from 8.8% to 8.0% and were accompanied by improvements on mental health indicators that exceeded those observed in the control condition.

The Four Key Functions of peer support provide a useful template for understanding the value of eHealth. Assistance in daily management is provided through dialogues and individualized messages around self-management behaviors and medication adherence from among 2,000+ pre-recorded messages in the program library in the Telephone Linked Care program. Linkage to clinical care can be arranged through monitoring patients' data to link them with clinical providers when necessary. Ongoing support may be provided as needed, as long as it's needed, once the system is put in place. Perhaps most surprisingly, users report that these systems provide substantial social and emotional support – 79% strongly agreed that Telephone Linked Care gave them confidence to manage their diabetes better.¹²⁶

Recent years have seen a boom in the release of smartphone apps for any number of chronic diseases. Though they began as tools to educate and build skills for self-management, the latest smartphone apps are designed around social connectivity. Software developers have realized that the main selling point of health apps is giving users the ability to connect with an online community of peers, to tap into the wisdom of the crowd. App users trust the collective knowledge and experience of “patients like me” and use these apps to actively seek out opportunities to give and receive support.

“High tech” may be complementary to, not a replacement of the “soft touch” of peer support. One can easily imagine individuals receiving both eHealth and live support interventions, the former addressing routine, redundant information and monitoring, and the latter engaging in problem solving and attention to individual concerns. However, while eHealth or automated interventions may make peer support more efficient and help extend it to whole populations, they cannot replace support provided by real people.

The Way Forward

- **Research** should look beyond studies of effectiveness and consider avenues for quality improvement. There is an abundance of evidence that peer support works, but additional research is needed to identify and reach subpopulations that stand to benefit the most from peer support.
- **Comprehensive programs** that meet the needs of individuals at different points in their lives or phases of disease progression could be driven by peer supporters.
- Developing and disseminating models of how to **manage peer support programs** can lower barriers to program adoption, increase job satisfaction for professional staff and peer supporters, and improve quality of care.
- **Financial modeling** including cost-effectiveness analyses and business case models are key areas for development in order to gain support in health care, worksite health promotion, and other areas of potential application.

We need to focus on saturating our environments with opportunities to engage in self-management.

**DALLAS SWENDEMAN,
LOS ANGELES**

- **Quality Assurance, Certification, and Accreditation.** Some states have pursued individual certification of Community Health Workers for quality assurance. Certification of individuals provides well-deserved recognition but can pose barriers for some that are trying to enter the ranks. It may also complicate development of programs in under-resourced settings or among groups that do not speak English and are consequently unable to pursue higher education. An alternative is to accredit programs that meet guidelines for recruitment, training, monitoring, supervision, and back up by professionals, trusting them to develop their workforce as appropriate. This is the model of the National Standards for Diabetes Self-Management Education and Support¹⁰⁵ and that which the CDC Division of Diabetes Translation has pursued in its National Diabetes Prevention Program.¹²⁷
- **The Affordable Care Act and Advocacy.** There are many opportunities for financial support of Community Health Worker and other peer support programs under the US Affordable Care Act. Details are available on the Peers for Progress website (www.peersforprogress.org).

The evidence is broad and clear – peer support works. The opportunities abound around the world – preventing and managing chronic disease, improving mental health care, reducing problems that cause disease burden and unnecessary, costly care, encouraging people to get the care they need, improving lives from pregnancy and childhood through older adulthood. It is time to move forward.

The research agenda is expanding and becoming more innovative. Instead of asking “Does peer support work?” we need to explore how best to extend peer support to those who need it while retaining its core effectiveness and person-centered features, what kinds of peer support work best in which settings, and how to integrate peer support effectively and efficiently in complex health systems. How new technologies can expand the impact of peer support programs is another exciting direction. As we move toward dissemination and implementation, conducting cost-effectiveness studies and developing models for managing peer support programs will promote more widespread adoption and prepare health care organizations to make peer support a part of routine care.

Gradually but unmistakably, peer support has slipped into the mainstream conversation. Not only are many health systems embracing peer-based and community health worker interventions, but also state and national health agencies are searching for ways to promote the growth of the field. However, sustainability of these programs is tenuous without the support and action of policymakers and health care leaders.

Setting standards for quality assurance and quality improvement through certification of individuals and accreditation of programs is one of the most promising routes to more effective programs, broader recognition among health care leaders, and reliable funding from health care payors.

Grabbing onto the global evidence generated by Peers for Progress and colleagues, advocates for peer support must rally to ensure that these programs are available for all people in the years to come. There is no single model of peer support that works for all health conditions and all populations. However, by emphasizing the science behind peer support and its humanizing impact on health care, we have a strong message that speaks to leaders and decision-makers who can champion the growth and sustainability of these important programs.

Be champions for peers! Seek out collaborations and bring diverse stakeholders to the table.

J. NELL BROWNSTEIN, ATLANTA

PARTICIPANTS

Charlie Alfero

Executive Director
HMS – Center for Health Innovation
Silver City, New Mexico

Guadalupe X. “Suchi” Ayala, PhD, MPH

Professor of Health Promotion
Graduate School of Public Health
San Diego State University
ayala@mail.sdsu.edu

Loretta A. Baptista

Director of Policy
Tiburcio Vasquez Health Center, Inc.
Hayward, California

Linda Baumann, PhD, RN, FAAN

Professor Emerita
University of Wisconsin-Madison School of Nursing
Affiliate Faculty School of Medicine and Public Health
Madison, Wisconsin
ljbauman@wisc.edu

Kendu Bomani

Peer Coach
University of California, San Francisco

Cecilia Bowen

Peer Coach
University of California, San Francisco

J. Nell Brownstein, PhD, MA

Health Educator and Scientist
National Center for Chronic Disease Prevention
and Health Promotion
Centers for Disease Control and Prevention
Atlanta, Georgia
jnb1@cdc.gov

Caresse Campbell, PhD, MPH

Post-doctoral Fellow
University of Alabama at Birmingham
cgc@uab.edu

Andrea Cherrington, MD, MPH

Associate Professor
University of Alabama at Birmingham
acherrington@uabmc.edu

Nam H. Cho, MD, PhD, CCD

Vice President, International Diabetes Federation
President, IDF-Western Pacific Region
Professor, Preventive Medicine
Director, Center for Clinical Epidemiology
School of Medicine and Medical Center
Ajou University
Suwon, Korea
chnaha@ajou.ac.kr

Bryan Cleal, PhD, MSc, BSc (Hons.)

Senior Researcher
Steno Diabetes Center
Gentofte, Denmark
byac@steno.dk

Muchieh Maggy Coufal, MPH, MA

Senior Program Manager
Peers for Progress Program Development Center
University of North Carolina at Chapel Hill
coufal@email.unc.edu

Delia de la Vara

Vice President
California Region
National Council of La Raza
Los Angeles, California
ddelavara@nclr.org

Denise DeVore

Research Assistant
Family & Community Medicine
UCSF School of Medicine
San Francisco, California

Craig Doane

Executive Director
American Academy of Family
Physicians Foundation
Leawood, Kansas
cdoane@aafp.org

Paulina Duker, MPH, RN, BC-ADM, CDE

Vice President
Diabetes Education & Clinical Programs
American Diabetes Association
Alexandria, Virginia
pduker@diabetes.org

Edwin B. Fisher, PhD

Global Director, Peers for Progress
Professor, Department of Health Behavior
University of North Carolina at Chapel Hill
edfisher@unc.edu

Martha M. Funnell, MS, RN, CDE

Past President, American Diabetes Association
Associate Research Scientist, Michigan Diabetes
Research and Training Center
University of Michigan Medical School
Ann Arbor, Michigan
mfunnell@umich.edu

Juan José Gagliardino, MD, PhD

Director, CENEXA (UNLP-CONICET)
Consultant Professor, School of Medicine
La Plata University
Buenos Aires, Argentina
direccion@cenexa.org

Jonathan Graffy, MBChB, MSc, MD, FRCGP

Senior Clinical Research Fellow
University of Cambridge, UK
jpg43@medschl.cam.ac.uk

Michele Heisler, MD, MPA

Professor of Internal Medicine and
Health Behavior & Health Education
University of Michigan
Ann Arbor, Michigan
mheisler@umich.edu

Lionel Hill

Peer Coach
University of California, San Francisco

Carmen Hopkins

Peer Coach
University of California, San Francisco

Annie Green Howard, PhD

Clinical Assistant Professor
University of North Carolina at Chapel Hill
aghoward@email.unc.edu

Leticia Ibarra, MPH

Director of Programs
Clinicas de Salud del Pueblo, Inc.
Brawley, California
leticiai@cdsdp.org

Lisa Klesges, PhD

President, Society of Behavioral Medicine
Dean, School of Public Health
University of Memphis
Memphis, Tennessee

Lyndee Knox, PhD

Chief Executive Officer
L.A. Net Community Health Research and Resource Network
Long Beach, California
Lyndee.knox@gmail.com

Sarah Kowitt, MPH

Graduate Research Assistant
Doctoral Student
Peers for Progress Program Development Center
University of North Carolina at Chapel Hill
kowitt@email.unc.edu

Maria Lemus

Executive Director
Vision y Compromiso

Sean Massa

Candidate for BA in Health and Societies
University of Pennsylvania
Philadelphia, PA

Jean Claude Mbanya, MD, PhD, FRCP

Past President, International Diabetes Federation
Director, Biotechnology Center,
University of Yaoundé I
Coordinator Doctoral, School of Life Sciences,
Health and Environment
Professor, Medicine and Endocrinology
Faculty, Medicine and Biomedical Sciences
University of Yaoundé I
Yaoundé, Cameroon
jcmpanya@hopitcam.net

Manuela McDonough, MPH, CPH

Associate Director
Institute for Hispanic Health
National Council of La Raza
Washington, D.C.
mmcdonough@nclr.org

QingQing Miao

Center for Health Law & Policy Innovation
Harvard Law School
Cambridge, Massachusetts
miao@college.harvard.edu

Maggie Morgan, JD, MA

Health Law & Policy Fellow
Center for Health Law & Policy Innovation
Harvard Law School
Cambridge, Massachusetts
mmorgan@law.harvard.edu

Phyllis Naragon, MA

Director of Programs and Administration
American Academy of Family Physicians Foundation
Leawood, Kansas
pnaragon@aafp.org

Justin Nash, PhD

Professor, Family Medicine and
Psychiatry & Human Behavior
Director, Behavioral Health in Family Medicine
Warren Alpert Medical School of Brown University
Memorial Hospital of Rhode Island
Providence, Rhode Island
justin_nash@brown.edu

Carolina Nkouaga

Director of Operations
Office for Community Health
UNM Health Sciences Center
Albuquerque, New Mexico
cnkouaga@salud.unm.edu

Brian Oldenburg, PhD

Professor and Director
Center for Health Equity
University of Melbourne
Melbourne, Australia
brian.oldenburg@unimelb.edu.au

Wilson Pace, MD, FAFAP

Professor of Family Medicine
Green-Edelman Chair for Practice-based Research
Director of AAFP National Research Network
University of Colorado
Aurora, Colorado

Humberto Parada, MPH, CPH

Data Manager
Doctoral Student
Peers for Progress Program Development Center
University of North Carolina at Chapel Hill
hparada@live.unc.edu

Erika Perkins

Program Specialist, Peers for Progress
American Academy of Family Physicians Foundation
Leawood, Kansas
eperkins@aafp.org

Britt Rios-Ellis, PhD
Director and Professor
Center for Latino Community Health
Evaluation & Leadership Training
California State University Long Beach

Jennifer B. Robinette, MS
Associate Program Manager
Peers for Progress Program Development Center
University of North Carolina at Chapel Hill
jlbr@email.unc.edu

E. Lee Rosenthal, PhD, MS, MPH
Research Affiliate
Project on CHW Policy and Practice
University of Texas, Institute for Health Policy
lee.rosenthal@uth.tmc.edu

Monika M. Safford, MD
Professor
Diabetes Prevention and Outcomes Research
Division of Preventive Medicine
University of Alabama at Birmingham

Boosaba Sanguanprasit, PhD, MPH
Assistant Professor
Naresuan University
Phitsanulok, Thailand
sboosaba@yahoo.in

David Simmons, MD
Cambridge University Hospitals,
NHS Foundation Trust
University of Cambridge
Cambridge, UK

Nina Souliopoulos
Center for Health Law & Policy Innovation
Harvard Law School
Cambridge, Massachusetts
ksouliopoulos2014@clinics.law.harvard.edu

Zilin Sun, MD, PhD
Professor and Associate Dean, Medical School
Head, Institute of Diabetes
Southeast University
Department of Endocrinology, Zhongda Hospital
Nanjing, China
sunzilin1963@126.com

Dallas Swendeman, PhD, MPH
Center Co-Director, Assistant Professor
Department of Psychiatry and Biobehavioral Sciences
David Geffen School of Medicine at UCLA
Los Angeles, California
dswendeman@mednet.ucla.edu

Chanuantong Tanasugarn, DrPH, MPH
Assistant Professor, Department of Health Education
and Behavioral Sciences
Chair, DrPH program in Health Promotion
Mahidol University
Bangkok, Thailand

Patrick Y. Tang, MPH
Program Manager
Peers for Progress Program Development Center
University of North Carolina at Chapel Hill
yptang@email.unc.edu

Tricia Tang, PhD, RPsych
Associate Professor
Division of Endocrinology
Department of Medicine
University of British Columbia
Vancouver, Canada
tricia.tang@vch.ca

David Thom, MD, PhD
Professor of Family & Community Medicine
UCSF School of Medicine
San Francisco, California
dthom@fcm.ucsf.edu

Joan Thompson, PhD, MPH, RD, CDE
Clinical Nutrition Supervisor of Preventive Medicine
La Clinica de la Raza
Oakland, CA
jthompson@lacinica.org

Diana Urlaub, MPH
Program Manager
Peers for Progress Program Development Center
University of North Carolina at Chapel Hill
diana_urlaub@med.unc.edu

Bert van den Bergh
Global Advisory Board, Peers for Progress
Chief Executive Officer, Revalerio Therapeutics

Clayton Velicer, MPH
Social Media Consultant
Peers for Progress
San Francisco, California
clayton.velicer@gmail.com

Huyen Vu, MSPH
Program Manager
Peers for Progress Program Development Center
University of North Carolina at Chapel Hill
huyenvu@email.unc.edu

Charrisse Wells
Peer Coach
University of California, San Francisco

Yanxiaoxiao Yang, PhD
Institute of Diabetes, Medical School,
Southeast University
Department of Endocrinology, Zhongda Hospital
Nanjing, China
yyxx0823@163.com

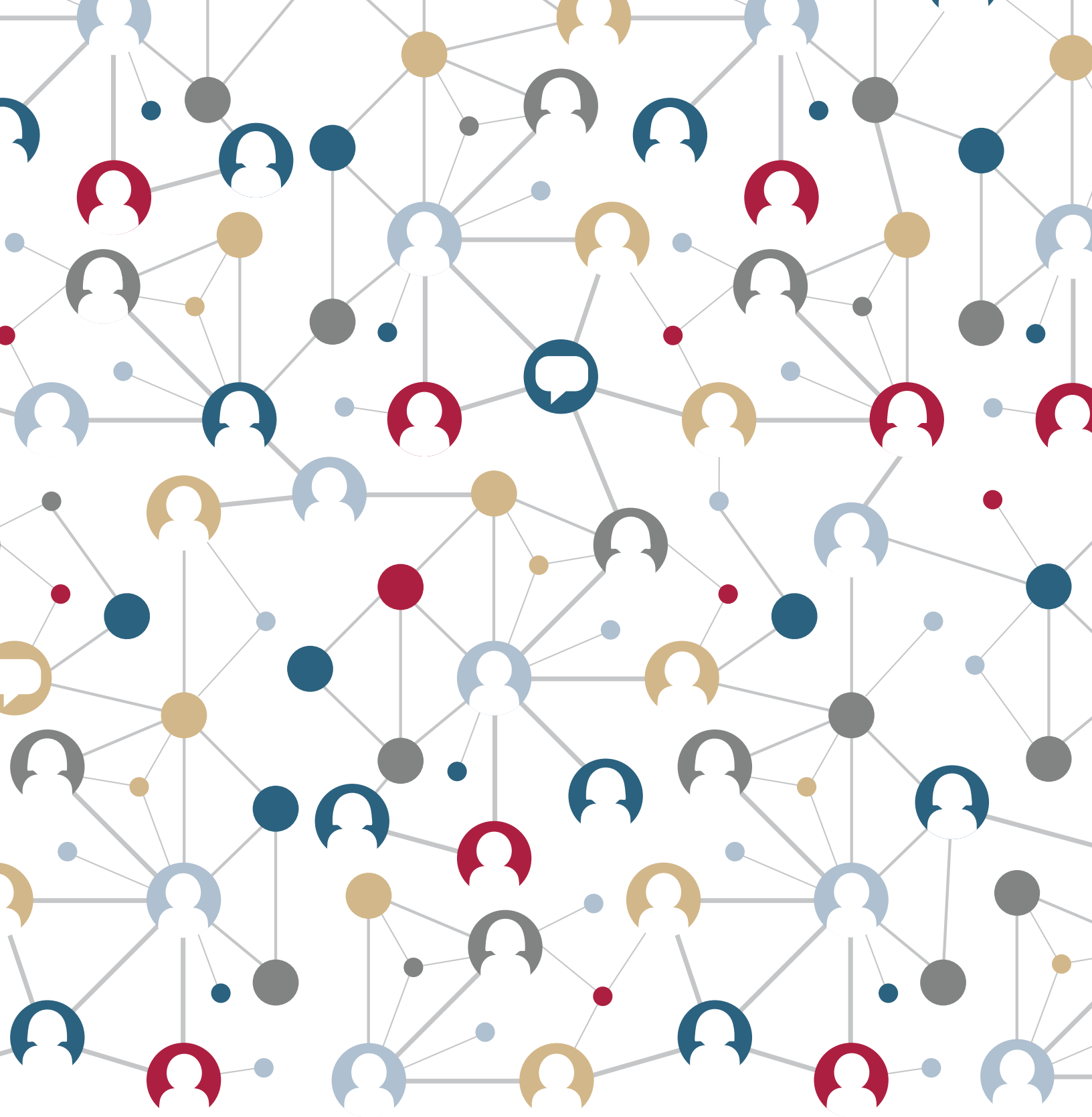
Roseanne Yeung, MD, MPH
University of British Columbia
Chinese University of Hong Kong
Hong Kong, China
roseanne.yeung@gmail.com

REFERENCES

1. Fisher EB, Earp JA, Maman S, Zolotor A. Cross-cultural and international adaptation of peer support for diabetes management. *Family Practice*. 2010;27 Suppl 1:i6-116.
2. Campbell C. An economic evaluation of a peer support intervention for diabetes self-management. Birmingham, Alabama: University of Alabama Birmingham;2014.
3. Moskowitz D, Thom DH, Hessler D, Ghorob A, Bodenheimer T. Peer coaching to improve diabetes self-management: which patients benefit most? *J Gen Intern Med*. Jul 2013;28(7):938-942.
4. Piette JD, Resnicow K, Choi H, Heisler M. A diabetes peer support intervention that improved glycemic control: mediators and moderators of intervention effectiveness. *Chronic Illn*. Dec 2013;9(4):258-267.
5. Brown HS, 3rd, Wilson KJ, Pagan JA, et al. Cost-effectiveness analysis of a community health worker intervention for low-income Hispanic adults with diabetes. *Prev Chronic Dis*. 2012;9:E140.
6. Fisher EB, Chan JCN, Kowitz S, Nan H, Sartorius N, Oldenburg B. Conceptual Perspectives on the Co-occurrence of Mental and Physical Disease: Diabetes and Depression as a Model. In: Sartorius N, Maj M, Holt R, eds. *Comorbidity of Mental and Physical Disorders*. Basel: Karger; 2015.
7. Sledge WH, Lawless M, Sells D, Wieland M, O'Connell MJ, Davidson L. Effectiveness of peer support in reducing readmissions of persons with multiple psychiatric hospitalizations. *Psychiatr Serv*. May 2011;62(5):541-544.
8. Patel V, Weiss HA, Chowdhary N, et al. Lay health worker led intervention for depressive and anxiety disorders in India: impact on clinical and disability outcomes over 12 months. *Br J Psychiatry*. Dec 2011;199(6):459-466.
9. Rahman A, Malik A, Sikander S, Roberts C, Creed F. Cognitive behaviour therapy-based intervention by community health workers for mothers with depression and their infants in rural Pakistan: a cluster-randomised controlled trial. *Lancet*. 2008;372(9642):902-909.
10. Chan JC, Sui Y, Oldenburg B, et al. Effects of Telephone-Based Peer Support in Patients With Type 2 Diabetes Mellitus Receiving Integrated Care: A Randomized Clinical Trial. *JAMA internal medicine*. Apr 28 2014;174(6):972-981.
11. Fisher EB, Chan J, Heisler M, Oldenburg B, Sartorius N. Peer Support As Intervention Strategy For Coexisting Depression And Chronic Disease: Illustrations From Diabetes. Symposium presented at the International Society for Affective Disorders. Berlin 2014.
12. National Peer Support Collaborative Learning Network, National Council of La Raza, Peers for Progress, American Academy of Family Physicians Foundation. *Peer Support In Health -- Evidence to Action: An Expert Report of the National Peer Support Collaborative Learning Network*. Leawood, KS: Peers for Progress, American Academy of Family Physicians Foundation;2014.
13. Harlow HF. The nature of love. *American Psychologist*. 1958;13:673-685.
14. Cohen S, Doyle WJ, Skoner DP, Rabin BS, Gwaltney JM. Social ties and susceptibility to the common cold. *Journal of the American Medical Association*. 1997;277(24):1940-1944.
15. Lutgendorf SK, Lamkin DM, Jennings NB, et al. Biobehavioral influences on matrix metalloproteinase expression in ovarian carcinoma. *Clin Cancer Res*. Nov 1 2008;14(21):6839-6846.
16. House JS, Landis KR, Umberson D. Social relationships and health. *Science*. 1988;241:540-544.
17. Holt-Lunstad J, Smith TB, Layton JB. Social relationships and mortality risk: a meta-analytic review. *PLoS medicine*. 2010;7(7):e1000316.
18. Swider SM. Outcome effectiveness of community health workers: an integrative literature review. *Public Health Nurs*. 2002;19:11-20.
19. Viswanathan M, Kraschnewski JL, Nishikawa B, et al. Outcomes and costs of community health worker interventions: a systematic review. *Med Care*. Sep 2010;48(9):792-808.
20. Gibbons MC, Tyus NC. Systematic review of U.S.-based randomized controlled trials using community health workers. *Prog Community Health Partnersh*. Winter 2007;1(4):371-381.
21. Perry HB, Zulliger R, Rogers MM. Community health workers in low-, middle-, and high-income countries: an overview of their history, recent evolution, and current effectiveness. *Annu Rev Public Health*. 2014;35:399-421.
22. Parry M, Watt-Watson J. Peer support intervention trials for individuals with heart disease: a systematic review. *Eur J Cardiovasc Nurs*. Mar 2010;9(1):57-67.
23. Brownson CA, Heisler M. The role of peer support in diabetes care and self-management. *The Patient: Patient-Centered Outcomes Research*. 2009;2(1):5-17.
24. Cherrington A, Ayala GX, Amick H, Allison J, Corbie-Smith G, Scarinci I. Implementing the community health worker model within diabetes management: challenges and lessons learned from programs across the United States. *Diabetes Educ*. Sep-Oct 2008;34(5):824-833.
25. Dunn J, Steginga SK, Rosoman N, Millichap D. A Review of Peer Support in the Context of Cancer. *J Psychosoc Oncol*. 2003;21(2):55-67.
26. Fisher EB, Brownson CA, O'Toole ML, Shetty G, Anwuri VV, Glasgow RE. Ecologic approaches to self management: The case of diabetes. *American Journal of Public Health*. September, 2005 2005;95(9):1523-1535.
27. Heisler M. Different models to mobilize peer support to improve diabetes self-management and clinical outcomes: evidence, logistics, evaluation considerations and needs for future research. *Fam Pract*. Jun 2010;27 Suppl 1:i23-32.
28. Rosenthal EL, Brownstein JN, Rush CH, et al. Community health workers: part of the solution. *Health Aff (Millwood)*. Jul 2010;29(7):1338-1342.
29. Solomon P. Peer support/peer provided services: Underlying processes, benefits, and critical ingredients. *Psychiatric rehabilitation journal*. 2004;27:392-401.
30. Fisher EB, Strunk RC, Highstein GR, et al. A randomized controlled evaluation of the effect of community health workers on hospitalization for asthma: the asthma coach. *Arch Pediatr Adolesc Med*. Mar 2009;163(3):225-232.
31. Colella TJE, King KM. Peer support. An under-recognized resource in cardiac recovery. *European Journal of Cardiovascular Nursing*. 2004;3(3):211-217.
32. Whitley EM, Everhart RM, Wright RA. Measuring return on investment of outreach by community health workers. *J Health Care Poor Underserved*. Feb 2006;17(1 Suppl):6-15.
33. Solomon P. Peer support/peer provided services underlying processes, benefits, and critical ingredients. *Psychiatric rehabilitation journal*. Spring 2004;27(4):392-401.
34. Ingram L, MacArthur C, Khan K, Deeks JJ, Jolly K. Effect of antenatal peer support on breastfeeding initiation: a systematic review. *Cmaj*. Nov 9 2010;182(16):1739-1746.
35. Ayala GX, Vaz L, Earp JA, Elder JP, Cherrington A. Outcome effectiveness of the lay health advisor model among Latinos in the United States: an examination by role. *Health Educ Res*. Oct 2010;25(5):815-840.
36. Repper J, Carter T. A review of the literature on peer support in mental health services. *J Ment Health*. Aug 2011;20(4):392-411.
37. Kenya S, Chida N, Symes S, Shor-Posner G. Can community health workers improve adherence to highly active antiretroviral therapy in the USA? A review of the literature. *HIV Med*. Oct 2011;12(9):525-534.
38. Hunt CW, Grant JS, Appel SJ. An integrative review of community health advisors in type 2 diabetes. *J Community Health*. Oct 2011;36(5):883-893.
39. Chapman DJ, Morel K, Anderson AK, Damio G, Perez-Escamilla R. Breastfeeding peer counseling: from efficacy through scale-up. *Journal of human lactation : official journal of International Lactation Consultant Association*. Aug 2010;26(3):314-326.
40. Pfeiffer PN, Heisler M, Piette JD, Rogers MA, Valenstein M. Efficacy of peer support interventions for depression: a meta-analysis. *General hospital psychiatry*. Jan-Feb 2011;33(1):29-36.
41. Hoey LM, Ieropoli SC, White VM, Jefford M. Systematic review of peer-support programs for people with cancer. *Patient Educ Couns*. 2008;70(3):315-337.
42. Brownstein JN, Chowdhury FM, Norris SL, Horsley T, Jack L. Effectiveness of community health workers in the care of people with hypertension. *American journal of preventive medicine*. 2007;32(5):435-447.
43. Norris SL, Chowdhury FM, Van Let K, et al. Effectiveness of community health workers in the care of persons with diabetes. *Diabetic Medicine*. 2006;23:544-556.
44. Andrews JO, Felton G, Wewers ME, Heath J. Use of community health workers in research with ethnic minority women. *Journal of Nursing Scholarship*. 2004;36(4):358-365.

45. Eysenbach G, Powell J, Englesakis M, Rizo C, Stern A. Health related virtual communities and electronic support groups: systematic review of the effects of online peer to peer interactions. *Bmj*. 2004;328(7449):1166.
46. Campbell HS, Phaneuf MR, Deane K. Cancer peer support programs--do they work? *Patient Educ Couns*. 2004;55(1):3-15.
47. Nemcek MA, Sabatier R. State of evaluation: Community health workers. *Public Health Nurs*. 2003;20:260-270.
48. Lewin S, Munabi-Babigumira S, Glenton C, et al. Lay health workers in primary and community health care for maternal and child health and the management of infectious diseases. *Cochrane Database Syst Rev*. 2010(3):CD004015.
49. Giugliani C, Harzheim E, Duncan MS, Duncan BB. Effectiveness of community health workers in Brazil: a systematic review. *J Ambul Care Manage*. Oct-Dec 2011;34(4):326-338.
50. Dale J, Caramlau IO, Lindenmeyer A, Williams SM. Peer support telephone calls for improving health. *Cochrane Database Syst Rev*. 2008(4):CD006903.
51. van Dam HA, van der Horst FG, Knoop L, Ryckman RM, Crebolder HF, van den Borne BH. Social support in diabetes: a systematic review of controlled intervention studies. *Patient Educ Couns*. Oct 2005;59(1):1-12.
52. Elstad E, Boothroyd R, Henes A, Maslow G, Nelson K, Fisher E. Global systematic review of peer support for complex health behavior. *International Congress of Behavioral Medicine*; August, 2010; Washington, D.C.
53. Babamoto KS, Sey KA, Camilleri AJ, Karlan VJ, Catalasan J, Morisky DE. Improving diabetes care and health measures among hispanics using community health workers: results from a randomized controlled trial. *Health Educ Behav*. Feb 2009;36(1):113-126.
54. Beckham S, Bradley S, Washburn A, Taumua T. Diabetes management: utilizing community health workers in a Hawaiian/Samoan population. *J Health Care Poor Underserved*. May 2008;19(2):416-427.
55. Culica D, Walton JW, Harker K, Prezio EA. Effectiveness of a community health worker as sole diabetes educator: comparison of CoDE with similar culturally appropriate interventions. *J Health Care Poor Underserved*. Nov 2008;19(4):1076-1095.
56. Dale J, Caramlau I, Sturt J, Friede T, Walker R. Telephone peer-delivered intervention for diabetes motivation and support: the telecare exploratory RCT. *Patient Educ Couns*. 2009;75(1):91-98.
57. Gagliardino JJ, Arrechea V, Assad D, et al. Type 2 diabetes patients educated by other patients perform at least as well as patients trained by professionals. *Diabetes Metab Res Rev*. Nov 19 2013;29:152-160.
58. Greenhalgh T, Campbell-Richards D, Vijayaraghavan S, et al. New models of self-management education for minority ethnic groups: pilot randomized trial of a story-sharing intervention. *J Health Serv Res Policy*. Jan 2011;16(1):28-36.
59. Heisler M, Vijan S, Makki F, Piette JD. Diabetes control with reciprocal peer support versus nurse care management: a randomized trial. *Annals of Internal Medicine*. 2010;153(8):507-515.
60. Mayes PA, Silvers A, Prendergast JJ. New direction for enhancing quality in diabetes care: utilizing telecommunications and paraprofessional outreach workers backed by an expert medical team. *Telemed J E Health*. Apr 2010;16(3):358-363.
61. McElmurry BJ, McCreary LL, Park CG, et al. Implementation, outcomes, and lessons learned from a collaborative primary health care program to improve diabetes care among urban Latino populations. *Health Promot Pract*. Apr 2009;10(2):293-302.
62. McEwen MM, Pasvogel A, Gallegos G, Barrera L. Type 2 diabetes self-management social support intervention at the U.S.-Mexico border. *Public Health Nurs*. Jul-Aug 2010;27(4):310-319.
63. Otero-Sabogal R, Arretz D, Siebold S, et al. Physician-community health worker partnering to support diabetes self-management in primary care. *Qual Prim Care*. 2010;18(6):363-372.
64. Prezio EA, Cheng D, Balasubramanian BA, Shuval K, Kendzor DE, Culica D. Community Diabetes Education (CoDE) for uninsured Mexican Americans: a randomized controlled trial of a culturally tailored diabetes education and management program led by a community health worker. *Diabetes Res Clin Pract*. Apr 2013;100(1):19-28.
65. Ruggiero L, Moadsiri A, Butler P, et al. Supporting diabetes self-care in underserved populations: a randomized pilot study using medical assistant coaches. *The Diabetes educator*. Jan-Feb 2010;36(1):127-131.
66. Sacco WP, Malone JI, Morrison AD, Friedman A, Wells K. Effect of a brief, regular telephone intervention by paraprofessionals for type 2 diabetes. *Journal of Behavioral Medicine*. 2009;32(4):349-359.
67. Smith SM, Paul G, Kelly A, Whitford DL, O'Shea E, O'Dowd T. Peer support for patients with type 2 diabetes: cluster randomised controlled trial. *BMJ*. 2011;342:d715.
68. Thom DH, Ghorob A, Hessler D, De Vere D, Chen E, Bodenheimer TA. Impact of peer health coaching on glycemic control in low-income patients with diabetes: a randomized controlled trial. *Annals of family medicine*. Mar 2013;11(2):137-144.
69. Walton JW, Snead CA, Collinsworth AW, Schmidt KL. Reducing diabetes disparities through the implementation of a community health worker-led diabetes self-management education program. *Family & community health*. Apr-Jun 2012;35(2):161-171.
70. Chen EH, Thom DH, Hessler DM, et al. Using the Teamlet Model to improve chronic care in an academic primary care practice. *Journal of General Internal Medicine*. Sep 2010;25 Suppl 4:S610-614.
71. Hargraves JL, Ferguson WJ, Lemay CA, Pernice J. Community health workers assisting patients with diabetes in self-management. *J Ambul Care Manage*. Jan-Mar 2012;35(1):15-26.
72. Simmons D, Rush E, Crook N. Development and piloting of a community health worker-based intervention for the prevention of diabetes among New Zealand Maori in Te Wai o Rona: Diabetes Prevention Strategy. *Public Health Nutr*. Dec 2008;11(12):1318-1325.
73. Sullivan-Bolyai S, Grey M, Deatrick J, Gruppuso P, Giraitis P, Tamborlane W. Helping other mothers effectively work at raising young children with type 1 diabetes. *The Diabetes Educator*. May-Jun 2004;30(3):476-484.
74. van der Wulp I, de Leeuw JR, Gorter KJ, Rutten GE. Effectiveness of peer-led self-management coaching for patients recently diagnosed with Type 2 diabetes mellitus in primary care: a randomized controlled trial. *Diabetic medicine : a journal of the British Diabetic Association*. Oct 2012;29(10):e390-397.
75. Dale J, Caramlau I, Sturt J, Friede T, Walker R. Telephone peer-delivered intervention for diabetes motivation and support: the telecare exploratory RCT. *Patient Educ Couns*. Apr 2009;75(1):91-98.
76. Sacco WP, Malone JI, Morrison AD, Friedman A, Wells K. Effect of a brief, regular telephone intervention by paraprofessionals for type 2 diabetes. *J Behav Med*. Aug 2009;32(4):349-359.
77. Goodwin K, Tobler L. COMMUNITY HEALTH WORKERS. communities. 2008;1:2.
78. Bielaszka-DuVernay C. Vermontis Blueprint For Medical Homes, Community Health Teams, And Better Health At Lower Cost. *Health Aff (Millwood)*. 2011;30(3):383.
79. Bhutta Z, Lassi Z, Pariyo G, Huicho L. Global experience of community health workers for delivery of health related millennium development goals: a systematic review, country case studies, and recommendations for integration into national health systems. Geneva: Global Health Workforce Alliance; 2010.
80. CDC. Addressing chronic disease through community health workers: A policy and systems-level approach. 2011.
81. Singh P, Sachs JD. 1 million community health workers in sub-Saharan Africa by 2015. *Lancet*. Jul 27 2013;382(9889):363-365.
82. Global Health Workforce Alliance. Global Experience of Community Health Workers for Delivery of Health Related Millennium Development Goals: A Systematic Review, Country Case Studies, and Recommendations for Integration into National Health Systems. Geneva: World Health Organization;2010.
83. Brownson CA, Hoerger TJ, Fisher EB, Kilpatrick KE. Cost-effectiveness of Diabetes Self-management Programs in Community Primary Care Settings. *The Diabetes Educator*. Jul 21 2009;35(5):761-769.
84. Margellos-Anast H, Gutierrez MA, Whitman S. Improving asthma management among African-American children via a community health worker model: findings from a Chicago-based pilot intervention. *J Asthma*. May 2012;49(4):380-389.
85. Tang TS, Funnell MM, Gillard M, Nwankwo R, Heisler M. The development of a pilot training program for peer leaders in diabetes: process and content. *Diabetes Educ*. Jan-Feb 2011;37(1):67-77.
86. Simmons D, Cohn S, Bunn C, et al. Testing a peer support intervention for people with type 2 diabetes: a pilot for a randomised controlled trial. *BMC Fam Pract*. 2013;14:5.
87. Global Health Observatory Data Repository. Health financing: Health expenditure per capita. Data by country. . <http://apps.who.int/gho/data/node.main.78?lang=en>. Accessed June 16, 2014.

88. National Programme for Family Planning and Primary Health Care. In: Ministry of Health GoP, ed2007.
89. Andreea SJ, Halanych JH, Cherrington A, Safford MM. Recruitment of a rural, southern, predominantly African-American population into a diabetes self-management trial. *Contemporary clinical trials*. May 2012;33(3):499-506.
90. Urlaub DM, Parada H, Ballesteros J, Galvan Y, McDonough M, Fisher EB. Population Focused Peer Support to Reach Those Not Receiving Recommended Diabetes Services. American Diabetes Association; 2014; San Francisco.
91. Tang TS, Funnell M, Sinco B, et al. Comparative Effectiveness of Peer Leaders and Community Health Workers in Diabetes Self-management Support: Results of a Randomized Controlled Trial. *Diabetes Care*. Jun 2014;37(6):1525-1534.
92. Fisher EB, Boothroyd RI, Coufal MM, et al. Peer support for self-management of diabetes improved outcomes in international settings. *Health Aff (Millwood)*. Jan 2012;31(1):130-139.
93. Programme on Mental Health. WHOQOL-BREF: Introduction, administration, scoring, and generic version of the assessment.: World Health Organization; 1996.
94. World Health Organization. Peer Support Programmes in Diabetes: Report of a WHO Consultation. Geneva: World Health Organization; 2008.
95. Kim HS, Sherman DK, Taylor SE. Culture and social support. *American Psychologist*. Sep 2008;63(6):518-526.
96. Dutton YE. Butting in vs. being a friend: cultural differences and similarities in the evaluation of imposed social support. *J Soc Psychol*. Jul-Aug 2012;152(4):493-509.
97. Fisher EB, Brownson CA, O'Toole ML, Anwuri VV, Shetty G. Perspectives on Self Management from the Diabetes Initiative of the Robert Wood Johnson Foundation. *The Diabetes Educator*. 2007;33(Suppl 6):216S-224S.
98. Kowitz S, Emmerling D, Fisher EB, Tanasugarn C. Peer Supporters as Agents of Health Promotion: Analyzing Thailand's Village Health Volunteer Program. under review.
99. Gilkey M, Garcia CC, Rush C. Professionalization and the experience-based expert: strengthening partnerships between health educators and community health workers. *Health Promot Pract*. Mar 2011;12(2):178-182.
100. Rosenthal EL, Wiggins N, Brownstein JN, et al. A Summary of the National Community Health Advisor Study: Weaving the Future. Tucson: Mel and Enid Zuckerman College of Public Health, University of Arizona;1998.
101. Wiggins N, Borbon A. Core Roles and Competencies of Community Health Advisors. In: Rosenthal EL, Wiggins N, Brownstein JN, et al., eds. A Summary of the National Community Health Advisor Study: Weaving the Future. Tucson: Mel and Enid Zuckerman College of Public Health, University of Arizona; 1998.
102. Lehmann U, Sanders D. Community Health Workers: What do we know about them? The state of the evidence on programmes, activities, costs and impact on health outcomes of using community health workers. Geneva: World Health Organization; 2007.
103. California Association of Community Health Workers. <http://www.cachw.org/chw-job-titles/>.
104. Weinger K, Leighton A. Living with Diabetes: The Role of Diabetes Education. In: Weinger K, Carver CA, eds. *Contemporary Diabetes: Educating Your Patient with Diabetes*.. Humana Press; 2009.
105. Haas L, Maryniuk M, Beck J, et al. National standards for diabetes self-management education and support. *Diabetes Care*. Jan 2014;37 Suppl 1:S144-153.
106. Anderson RJ, Freedland KE, Clouse RE, Lustman PJ. The prevalence of comorbid depression in adults with diabetes: A meta-analysis. *Diabetes Care*. 2001;24(6):1069-1078.
107. Lichtman JH, Bigger JT, Jr., Blumenthal JA, et al. Depression and coronary heart disease: recommendations for screening, referral, and treatment: a science advisory from the American Heart Association Prevention Committee of the Council on Cardiovascular Nursing, Council on Clinical Cardiology, Council on Epidemiology and Prevention, and Interdisciplinary Council on Quality of Care and Outcomes Research: endorsed by the American Psychiatric Association. *Circulation*. Oct 21 2008;118(17):1768-1775.
108. Blumenthal JA, Sherwood A, Babyak MA, et al. Exercise and pharmacological treatment of depressive symptoms in patients with coronary heart disease: results from the UPBEAT (Understanding the Prognostic Benefits of Exercise and Antidepressant Therapy) study. *J Am Coll Cardiol*. Sep 18 2012;60(12):1053-1063.
109. Mitchell AJ, Chan M, Bhatti H, et al. Prevalence of depression, anxiety, and adjustment disorder in oncological, haematological, and palliative-care settings: a meta-analysis of 94 interview-based studies. *Lancet Oncol*. Feb 2011;12(2):160-174.
110. Gavard JA, Lustman PJ, Clouse RE. Prevalence of depression in adults with diabetes. An epidemiological evaluation. *Diabetes Care*. 1993;16(8):1167-1178.
111. Bogner HR, Morales KH, de Vries HF, Cappola AR. Integrated management of type 2 diabetes mellitus and depression treatment to improve medication adherence: a randomized controlled trial. *Ann Fam Med*. Jan-Feb 2012;10(1):15-22.
112. Golden SH, Lazo M, Carnethon M, et al. Examining a bidirectional association between depressive symptoms and diabetes. *JAMA*. Jun 18 2008;299(23):2751-2759.
113. Fisher EB, Chan JCN, Nan H, Sartorius N, Oldenburg B. Co-occurrence of diabetes and depression: Conceptual considerations for an emerging global health challenge. *Journal of Affective Disorders*. 2012;140S:S56-S66.
114. Rahman A. Challenges and opportunities in developing a psychological intervention for perinatal depression in rural Pakistan—a multi-method study. *Arch Womens Ment Health*. 2007;10(5):211-219.
115. de Mello MF, de Jesus Mari J, Bacaltchuk J, Verdeli H, Neugebauer R. A systematic review of research findings on the efficacy of interpersonal therapy for depressive disorders. *Eur Arch Psychiatry Clin Neurosci*. Apr 2005;255(2):75-82.
116. Landers GM, Zhou M. An analysis of relationships among peer support, psychiatric hospitalization, and crisis stabilization. *Community Ment Health J*. Feb 2011;47(1):106-112.
117. Chan J, So W, Ko G, et al. The Joint Asia Diabetes Evaluation (JADE) Program: a web-based program to translate evidence to clinical practice in Type 2 diabetes. *Diabetic medicine : a journal of the British Diabetic Association*. Jul 2009;26(7):693-699.
118. Chan JC, So WY, Yeung CY, et al. Effects of structured versus usual care on renal endpoint in type 2 diabetes: the SURE study: a randomized multicenter translational study. *Diabetes Care*. Jun 2009;32(6):977-982.
119. Bodenheimer T, Wagner EH, Grumbach K. Improving primary care for patients with chronic illness: the Chronic Care Model, Part 2. *Journal of the American Medical Association*. 2002;288:1909-1914.
120. Wagner EH, Grothaus LC, Sandhu N, et al. Chronic care clinics for diabetes in primary care: a system-wide randomized trial. *Diabetes Care*. Apr 2001;24(4):695-700.
121. Bojadzievski T, Gabbay RA. Patient-centered medical home and diabetes. *Diabetes Care*. Apr 2011;34(4):1047-1053.
122. Stange KC, Nutting PA, Miller WL, et al. Defining and measuring the patient-centered medical home. *Journal of general internal medicine*. Jun 2010;25(6):601-612.
123. Henry JD, Crawford JR. The short-form version of the Depression Anxiety Stress Scales (DASS-21): construct validity and normative data in a large non-clinical sample. *Br J Clin Psychol*. Jun 2005;44(Pt 2):227-239.
124. Fisher EB, Strunk RC, Highstein GR, et al. A randomized controlled evaluation of the effect of community health workers on hospitalization for asthma: the asthma coach. *Archives of Pediatrics and Adolescent Medicine*. 2009;163(3):225-232.
125. Williams ED, Bird D, Forbes AW, et al. Randomised controlled trial of an automated, interactive telephone intervention (TLC Diabetes) to improve type 2 diabetes management: baseline findings and six-month outcomes. *BMC Public Health*. 2012;12:602.
126. Oldenburg B. Impacts on Social Support and Emotional Wellbeing of Automated "Peer Support". International Society for Affective Disorders; 2014; Berlin.
127. Albright AL, Gregg EW. Preventing type 2 diabetes in communities across the U.S.: the National Diabetes Prevention Program. *Am J Prev Med*. Apr 2013;44(4 Suppl 4):S346-351.
128. Boff L & Boff C. *Introducing Liberation Theology*. Maryknoll, NY: Orbis Books; 1987.



Eli Lilly and Company Foundation



Bristol-Myers Squibb Foundation