



**Harkness Fellowships in Health Care  
Policy and Practice**

**2006-07 Fellows' Project Abstracts**

**VIDHYA ALAKESON** (United Kingdom)

Research Associate

Social Market Foundation, London

**Project Title:** Is Self-Direction a Way of Creating a More Patient-Centered Healthcare System?  
Lessons from Self-Direction in the U.S. Public Mental Health System

**Placement:** Office of Assistant Secretary for Planning and Evaluation, U.S. Department of Health and Human Services, Washington, D.C.

**Mentor:** Pamela Doty, Ph.D.

### **Project Abstract**

**Research Objectives:** Self-directed care, where individuals have direct control of a budget with which to purchase services and supports to meet their needs, is currently restricted to social care and other long-term supports outside the National Health Service (NHS). It has been proposed that one way of meeting the U.K. government's objective to create more personalized public services, including health care, would be to build on the strong track record of self-direction in social care and extend the approach to the NHS. This project seeks to inform U.K. discussion of the appropriate scope of self-direction by looking at self-direction in mental health in the United States, where consumers have the ability to direct clinical and non-clinical services.

Based on three case study pilot programs, the project analyzes why consumers choose to self-direct, what they value about the approach and what they choose to purchase to meet their mental health needs once they have the flexibility of an individual budget. It also seeks to identify how program design influences the consumer experience and the ability of consumers to make informed decisions. Where possible, the impact of the program on health outcomes and costs was also assessed.

**Study Design:** This study included site visits to self-directed pilots for adults with serious and persistent mental illness in three states: Florida, Michigan and Oregon. In each site, structured interviews were conducted with consumers, staff and state officials regarding program design, the experience of self-direction, outcomes, and plans for the future. Analysis of service use data was conducted for the pilots in Oregon and Florida. Site visits were supported by interviews with 20 policymakers, consumer advocates, providers and academic experts in mental health about the significance of self-direction to system transformation, the scope for expansion and the barriers to self-direction becoming an established model of service delivery.

**Principal Findings:** The pilot programs in the three states vary in the scope of self-direction they allow. At one end of the spectrum is the pilot in Oregon, where consumers continue to receive community mental health services and can direct an additional budget for support services that Medicaid will not cover. At the other end is Michigan, where self-direction is integrated into the community mental health system and consumers are able to direct Medicaid-funded services.

Analysis of consumer spending shows that in Oregon, the four largest spending categories are: personal appearance, household items, alternative therapies and computers. In Florida, the four largest spending categories are: medications, psychiatrist visits, transportation and rent and utilities. Differences in the spending patterns of consumers between the two states reflect differences in the scope of self-direction permitted. However, there are some consistent patterns that can be identified in consumer spending across the different pilots. First, there is a shift of resources away from clinical towards non-clinical services. Consumers choose to spend a significant share of their budgets on goods and services that address other aspects of life that contribute to physical and mental health. There is also tentative evidence that self-direction leads to a shift away from acute services towards prevention and early intervention.

Consumers report greater satisfaction with self-directed care than with traditional community mental health services. The aspects of self-direction that consumers appear to value include: greater flexibility in how they meet their needs; the focus on recovery and returning to a life in the community rather than a focus on diagnosis and illness; the support and advocacy they receive from peers; and access to support that can help them navigate not just the public mental health system but also other public and community services.

There is no evidence that these outcomes are achieved at the expense of greater costs to the public mental health system. Fraud and overspending have not been issues in any of the pilot programs, and many of the services that consumers choose to purchase are less costly than traditional services – for example, peer services.

The existence of support services is critical to the effectiveness of self-directed care. Support ensures that choice in a clinical context does not exacerbate inequality and shift risk onto consumers. In the case of mental health, consumers express a preference for working with peers in recovery. Peers act as role models and advocates, using their experience to support consumers in achieving their own recovery.

**Conclusions:** There are currently only a few hundred consumers involved in self-directed care for individuals with serious and persistent mental illness across the entire country. Early evidence is that self-direction leads to greater personalization of services and that there is scope for savings if the observed shift away from acute interventions towards prevention and early intervention holds true for a wider sample. Existing evidence is promising in terms of extending self-direction to the NHS but the approach must be tested with a larger population and rigorously evaluated before any firm conclusions can be drawn about its potential both in the United States and United Kingdom.

***Implications for Policy, Delivery or Practice in the United States and United Kingdom:***

- A great deal of attention is focused on choice of provider in both the United Kingdom and United States, but this is only one dimension of choice. Self-direction gives patients greater flexibility over the who, where, when and what of healthcare, leading to greater personalization of care.
- Investment in support services is critical for effective self-direction. This has been neglected in the United Kingdom, with many local authorities failing to invest adequately. This must be addressed as part of any extension of existing policy into the NHS.
- Investment in the development of peer services is an important complement to self-direction. A peer workforce is an essential source of alternative services and increases the choices available to consumers
- As part of self-direction, a greater proportion of health spending is likely to flow to non-healthcare items. This challenges the current boundaries of the NHS and Medicaid. To support self-direction, funding must be based on outcomes rather than services.

**PUBLICATIONS:**

Alakeson, V. “The Case for Extending Direct payments Into the NHS: Evidence From the United States,” released on [www.hsj.co.uk](http://www.hsj.co.uk) and [www.in-control.org.uk](http://www.in-control.org.uk), December 2006.

Alakeson, V. “Direct Dollars,” *Mental Health Today*, March 2007.

Alakeson, V. “Self-Direction in the NHS,” Social Market Foundation, June 2007.

Alakeson, V. “Self-Direction for Individuals With Serious and Persistent Mental Illness,” Office of the Assistant Secretary for Planning and Evaluation (forthcoming).

**PLANNED PUBLICATIONS:**

“Asset Testing in Long-Term Care in New Zealand, the United Kingdom and the United States.” To be submitted to the *Journal of Aging and Social Policy* (V. Alakeson, M. Booth).

“Narrative Matters: Perspectives on Choice in U.S. Health Care” (working title). To be submitted to *Health Affairs* (V. Alakeson, M. Booth, R. Foy, B. Guthrie, R. Lopert).

**PRESENTATIONS:**

“Is Self-Direction a Way of Creating More Personalized Healthcare?” Office of Assistant Secretary for Planning and Evaluation Lunchtime Seminar, U.S. Department of Health and Human Services, Washington, D.C., May 24, 2007.

“Developments in Self-Direction in Mental Health in the United States.” Michigan Peer Specialist Training, Higgins Lake, July 23, 2007.

**MARK BOOTH** (New Zealand)  
Manager  
Strategic Funding and Therapeutics Policy  
Sector Policy Directorate  
Ministry of Health, Wellington

**Project Title:** Analysis of the Health Care Policy Responses to Population Aging in New Zealand and the United States

**Placement:** Center for Gerontology and Health Care Research, Brown University, Providence

**Mentor:** Vincent Mor, Ph.D.

### **Project Abstract**

**Research Objectives:** The population of all developed countries is aging – a process that has profound implications for the delivery of health care and long-term care services within these countries. As the population requiring age-related health and disability services increases, the working population is decreasing. In examining this issue, one can differentiate between health care services for the elderly that are provided within a hospital setting – typically in response to an acute incident or the onset of age-related diseases such as Alzheimer’s disease – and long-term care services for elderly people who need assistance with activities of daily living. This line is typically blurred as assistance with activities of daily living will invariably include health care assistance.

This research project looks at the long-term care needs of the elderly population, the associated funding issues, and the policy responses within New Zealand and the United States. The aim of this project is to gather information on the responses to population aging within the United States and New Zealand in order to inform policy options within both countries.

**Study Design:** The main vehicle for the work is a Commonwealth Fund-sponsored national survey of long-term care experts being carried out by Brown University. This survey is being sent to over 3,000 individuals across the country and looks at experts’ views in a number of areas including:

- Challenges facing long-term care;
- Funding of long-term care;
- Linking individuals and services;
- Rebalancing long-term care;
- Culture change;
- Workforce issues;
- The use of health information technology in long-term care.

The survey is intended to elicit opinions on these areas and views on policy changes that would help improve outcomes for elders.

In addition to the U.S. survey, a modified version of the survey will be sent to 300 long-term care experts in New Zealand. This will allow for an aggregation of New Zealanders’ views on these issues as well as enable a comparison of the views of experts in the two countries.

Information from reviews of the literature and a series of key informant interviews with individuals involved in innovative approaches to long-term care is also being collected. The interviewees include people associated with the Program for All Inclusive Care for the Elderly (PACE); Eden Alternative; Pioneer Network; Minnesota Health Options and Cash and Counseling schemes.

**Principal Findings:** Although the New Zealand survey has been sent out, results have not yet been

received. The United States survey will be released in early June.

It is clear that both countries need to do more to meet the rising demand for long-term care associated with an increasingly large frail elderly population. The challenges include ensuring that adequate funding is available; attracting and retaining a sufficient and high quality workforce; reducing reliance upon residential care; improving quality for an increasingly aware population cohort; expanding home based care options and more effectively using information technology.

***Implications for Policy, Delivery or Practice in the United States and New Zealand:*** Both the United States and New Zealand face very similar problems in dealing with an increasingly elderly population that will require long-term care and will increasingly demand higher quality services. Building on a larger-scale project with results from an expert advisory panel and cognitive interviews for the expert survey, some of the implications for policy include:

- *Workforce.* Attention needs to be given to recruiting and retaining a motivated and skilled workforce at all levels of long-term care. In order to do this, both countries need to ensure that salaries and wages are attractive, training programs are in place, and that individuals have effective career pathways.
- *Health Information Technology.* Although New Zealand has a good tradition in the use of HIT in the primary and secondary care sectors it does not make use of information within long-term care. New Zealand needs to mandate the collection of a minimum data set that can be used to assist in quality monitoring in the same way as is done in the United States
- *Culture Change.* The rapidly expanding culture change movement in long-term care needs to be encouraged and nurtured by governments in both countries. Culture change places the resident at the center of the care process and involves them and family members in determining the care they receive. It also seeks to address the physical environment by making residential care homes less like hospitals and more like homes.
- *Rebalancing.* Both countries have an over-reliance upon residential care despite policy directions that seek to support people living in their own homes. There are examples of schemes in both countries (such as PACE in the United States and Community FIRST in New Zealand) that seek to assist elders who would otherwise need nursing home care to stay in their own homes. Initial evaluations of such schemes are positive and both countries need to encourage their further use.
- *Funding.* New Zealand needs to ensure that work carried out between the Treasury and the Ministry of Health projecting need and funding requirements for long-term care are continued on a regular basis. This work will inform the existing fiscal planning that is being carried out. In the United States, given projections for expenditure associated with the Medicaid program, a wider debate needs to be held on options for funding of long-term care.

## **PUBLICATIONS:**

Booth, M., Miller, E.A., Mor, V. "Through the Looking Glass: Toward a Brighter Future for Long-Term Care in a Graying New Zealand," *New Zealand Medical Journal* 120 (1249), February 2007.

Booth, M., Miller, E.A., Mor, V. "Forging the Ties the Bind: Toward Higher Quality Long-Term Care in an Aging United Kingdom" (under peer review).

Booth, M., Miller, E.A., Mor, V. "Moving into the Light: Toward Higher Quality Long-Term Care in an Aging Australia" (under peer review).

Booth, M., Mor, V. "Long-Term Care in the United States: Lessons for New Zealand?" (under peer review).

Miller, E.A., Booth, M., Mor, V. "In Search of a Vision: Assessing Experts' Views of the Future of

Long-Term Care” (under peer review).

**PLANNED PUBLICATIONS:**

“Asset Testing in Long-Term care in New Zealand, the United Kingdom and the United States.” To be submitted to the *Journal of Aging and Social Policy* (V. Alakeson, M. Booth).

“Narrative Matters: Perspectives on Choice in U.S. Health Care” (working title). To be submitted to *Health Affairs* (V. Alakeson, M. Booth, R. Foy, B. Guthrie, R. Lopert).

“Surveys of Experts in Long-Term Care in the United States and New Zealand.”

**PRESENTATIONS:**

“The New Zealand Health Care and Long-term Care Systems.” Lunchtime lecture, Muskee School of Management, University of South Maine, Portland, November 2006.

“The New Zealand Health Care and Long-term Care Systems.” Brown Bag Seminar, Department of Gerontology and Health Care Research, Brown University, Providence, December 2006.

“The New Zealand Health Care and Long-term Care Systems.” Distinguished Visitor Lecture, University of Minnesota, March 2007.

**ROBBIE FOY, M.B.Ch.B., Ph.D.** (United Kingdom)  
Clinical Senior Lecturer in Primary Care  
Newcastle University

**Project Title:** Mapping Quality Improvement: A Comparative Study of Health Care Organizations

**Placement:** VA Greater Los Angeles Healthcare Systems, and RAND Corporation, Los Angeles

**Mentor:** Brian Mittman, Ph.D., and Lisa Rubenstein, M.D.

### **Project Abstract**

**Research Objectives:** In both the United States and the United Kingdom there have been major efforts to improve the quality and safety of patient care in response to documented widespread “quality gaps.” However, despite documented improvements, significant work remains to close existing quality gaps and “cross the quality chasm.”

One important explanation for the apparent lack of significant progress in this area is the failure to launch and coordinate quality improvement efforts (QI) across all levels of healthcare systems (national, organizational, team, and individual). This “multi-level” framework recognizes the importance of policy, management and practice-based initiatives in targeting the full spectrum of stakeholders and influences on healthcare practices and outcomes (and full spectrum of causes of quality gaps). It implies that improvement efforts at each level are necessary but not sufficient to achieve meaningful improvement – i.e. improvement will occur only when efforts are underway at all levels. There is a lack of research around this promising framework, which represents a major shortcoming in the field of healthcare QI research and – despite an intuitive appeal – limits its value to practice and policy.

The overall objectives of this study were to:

1. To further develop the multi-level framework for quality improvement in health care;
2. Document the extent and intensity of different QI efforts among U.S. and U.K. healthcare systems; and
3. Explain similarities and differences in QI activities among U.S. and U.K. healthcare systems.

**Study Design:** This study examined quality improvement efforts around depression within two U.S. healthcare systems: the Department of Veterans Affairs (VA; a publicly funded integrated system) and HealthPartners of Minnesota (a private, not-for-profit managed care system). In-depth interviews took place with a wide range of stakeholders, supplemented by a literature review and document analysis. The interview schedule was informed by reviewing a range of existing planning models and frameworks and identifying goals and activities likely to be important in the development of multi-level quality improvement strategies. The study focused on efforts to improve care for clinical depression, as both healthcare systems identified this as a priority for quality improvement. Further comparative work with the U.K. National Health Service is currently in progress.

**Principal Findings:** To date, a total of 23 people have been interviewed, spanning various levels and roles in quality improvement, primary care and mental health.

Both healthcare systems recognized specific problems with depression care, particularly poorly structured and inconsistently implemented identification, assessment and follow-up of people with depression. Their goals were to implement evidence-based systems of delivering care – largely based upon the Chronic Care Model – which could offer sustainable benefits. These models centered around systematically identifying people with depression, use of a care manager to assess need and coordinate further care and

follow-up, and structured collaboration between primary care and mental health services.

Current activities and plans to improve depression care appear to span all healthcare system levels, albeit with varying penetration and different emphases in approach between the VA and HealthPartners.

Contextual factors seen as critical in improving the likelihood of a multi-level QI strategy included:

- Existence or emergence of external pressures to help leverage change;
- Organizational cultures that reflected buy-in to quality improvement and perceived this to be part of 'core' business.

The following goals and activities were seen as important as driving or enabling a multi-level approach:

- Engaging and securing commitment from leaders across different levels of the healthcare systems;
- Strategically aligning incentives and integrating improvement into routine organizational activities;
- Investing in the development of systems (people, technical support and procedures) that could reliably meet patient needs;
- Using performance data that was understood by users and sufficiently trusted in order to highlight the scope for improvement and evaluation of QI activities.

Both healthcare systems variably drew upon collaborative, competitive or command (top down) approaches. Both predominantly depended on existing or fostering collaboration across and between levels. The more complex environment occupied by HealthPartners demanded concerted efforts to bring together a wide range of stakeholders, including health plan purchasers (mainly employers) and members. Competition was also seen as a driver within HealthPartners with command playing a much lesser role, whereas the converse applied to the VA.

**Conclusions:** Drawing upon existing models and the interview findings, a new “multi-level matrix” sets out nine core features and tasks to be considered in planning QI efforts across multiple levels of healthcare systems. These are:

- Strategic alignment and integrated improvement into routine organizational activities;
- Involving key stakeholders and leaders;
- Priority setting;
- Identification of best practice recommendations;
- Identifying factors that help or hinder quality improvement;
- Developing people and roles for effective and efficient team function;
- Developing technical support and procedures for coordinated care;
- Developing organizational culture;
- Monitoring and evaluation of quality of care.

These tasks are largely addressed within the strategies undertaken by the VA and HealthPartners to improve depression care. Differences in the complexity and emphases of the approaches taken are shaped by the natures of these healthcare systems.

**Implications for Policy, Delivery, or Practice in the United States and the United Kingdom:** Both of these cases illustrate ongoing concerted “special” efforts to bring about large scale change in the organization and delivery of care. Therefore, although relatively atypical, the high degree of activity across and between different levels by both healthcare systems to galvanize action are instructive for those elsewhere planning changes of a similar magnitude. Once further developed and validated, the “multi-level matrix” may form a useful template against which to assess the comprehensiveness of other quality improvement strategies.

**BRUCE GUTHRIE, M.B., B.Chir., M.R.C.P., M.R.C.G.P., Ph.D.** (United Kingdom)  
Professor of Primary Care Medicine

University of Dundee

**Project Title:** Financial Incentives and the Implementation of Systematic Chronic Disease and Preventive Care in California Medicaid.

**Placement:** Division of General Internal Medicine, University of California, San Francisco

**Mentors:** Andrew Bindman, M.D.

### **Project Abstract**

**Research Objectives:** Pay-for-performance in healthcare is being increasingly adopted internationally and is widely expected to incrementally improve quality of care for incentivized measures. Its more enthusiastic proponents suggest that it also has the power to transform healthcare more widely. However, the evidence for incremental change is relatively weak and contradictory, and, for transformational change, non-existent. Although existing commercial and planned Medicare pay-for-performance has attracted the most attention, explicit financial incentives for quality are surprisingly common in Medicaid. 26 states have some form of pay-for-performance program, frequently directed at managed care plans rather than (or in addition to) providers, and 17 more plan to implement such a program in the next two years. However, few of these initiatives have been subject to formal evaluation.

This project examines the impact of the 2005 implementation of performance-based auto-assignment in counties where California Medicaid (Medi-Cal) managed care enrollees have a choice of health plan. Auto-assignment refers to the process by which the approximately 25 percent of new enrollees who do choose a managed care plan are allocated to a plan by the state. Auto-assignment becomes pay-for-performance when it is determined by measured plan performance rather than a purely administrative rule. Performance-based auto-assignment is attractive to states because it is relatively simple to implement, is cost-neutral, and has face value importance to plans since a significant proportion of their membership is auto-assigned. To date, five states have used auto-assignment as a quasi-financial incentive for quality. In Medi-Cal, relative performance of plans is determined by a composite quality score based on five HEDIS measures (focused on child and women's health), and two measures of "safety-net support." Relative performance then determines share of auto-assigned enrollees in a competitive incentive design, where plans win new members only at the expense of other plans losing an equal number.

**Study design:** The study design consisted of a qualitative analysis of data from 20 individual and group interviews (29 participants, including one or more people from 12 of the 15 plans in the program), and a quantitative difference-in-differences analysis of changes in incentivized and non-incentivized HEDIS measures. The comparison group was counties where enrollees have no choice of a Medi-Cal managed care plan. These County Operated Health Systems are subject to the same historical quality regulatory requirements as plans additionally incentivized by auto-assignment.

### **Principal findings:**

A. *Qualitative Findings:* Qualitative analysis is ongoing, but three key preliminary themes are described here.

1. *Was auto-assignment an incentive?* All plans agreed that auto-assignment was an incentive, although primarily reinforcing rather than replacing existing non-financial incentives. Examples of the latter include required reporting of HEDIS measures to the state linked to non-financial sanctions and rewards, and required participation in state quality improvement collaboratives.
2. *How did plans respond?* In most plans, there was evidence of increased focus on incentivized measures, although for some, auto-assignment reinforced the importance of all HEDIS measures they were required to report to the state, not just those incentivized. Participants described auto-assignment as changing the focus of quality improvement work rather than driving new activity.

3. *Perceived consequences.* Positive consequences identified included an expected increase in measured quality of care for incentivized indicators (although several participants commented that some or all of any change reflected better data collection rather than better care). Negative consequences identified included the crowding out of other quality improvement activity, and a perverse incentive not to collaborate with competitors on working with providers on quality improvement and system redesign.

B. *Quantitative Findings:* As of May 2007, only access to “before” and “during” quality data is available (the “during” data is based on care that straddles the implementation of auto-assignment). The analysis shown is therefore preliminary/premature, and is presented to show the form that the data will take when true ‘after’ data is available later this year. The table shows the comparative impact of performance-based auto-assignment on four incentivized and four non-incentivized measures (weighted difference-in-differences analysis comparing managed care plans in counties with and without pay-for-performance). A positive value indicates that plans affected by auto assignment had greater improvement compared to comparison plans. A negative value means that comparison plans had greater improvement. Based on the preliminary analysis, there is no evidence that auto-assignment has improved quality for any measures, and there is evidence of worse quality than the comparison group for one incentivized and one non-incentivized measure.

		Impact of performance based auto-assignment % (95% CI)	p-value
<b>Incentivized<sup>1</sup></b>	Childhood immunizations	0.2 (-4.5 to 4.8)	0.94
	Adolescent well checks	-8.8 (-14.9 to -2.7)	0.006
	Timeliness of prenatal care	-2.8 (-8.7 to 3.1)	0.34
	Appropriate medication for people with asthma	-0.2 (-3.5 to 3.1)	0.91
<b>Non-incentivized</b>	Well child checks first 15 months	-6.1 (-12.6 to 0.5)	0.067
	Appropriate post-natal care	0.5 (-3.9 to 4.9)	0.82
	Cervical cancer screening	-8.1 (-11.4 to -4.7)	<0.001
	Chlamydia screening in women	-3.0 (-8.5 to 2.5)	0.27

<sup>1</sup>One incentivized measure (well child checks aged 3-6 years) was not collected in the comparison counties

**Conclusions:** Participants described incremental rather than transformational change, reflecting that pay-for-performance was layered on top of existing state regulatory incentives for quality improvement. The main effect on plans was therefore a change of focus onto incentivized measures, rather than new investment in quality improvement activity. Several plans identified this as risking worse quality for non-incentivized conditions. Additionally, the competitive nature of the incentive created the perverse incentive of collaboration between plans, which maintained (and potentially exacerbated) the fragmentation of quality improvement incentives and collaboration experienced by providers. The final quantitative analysis will examine whether quality did improve for incentivized measures, and whether concerns about “crowding out” will be reflected in worse quality for non-incentivized measures.

**Implications for Policy, Delivery or Practice in the United States and the United Kingdom:** Pay-for-performance may deliver incremental change in quality, but it is unlikely to be transformational by itself. Any implementation should therefore seek to align new financial incentives for quality with other existing and new financial and non-financial incentives. Competitive pay-for-performance programs directed at U.S. health plans (or U.K. purchasers) risk maintaining fragmentation of plan directed quality improvement work with providers. Pay-for-performance has potential to drive incremental change in quality, but it also has significant potential for negative effects, and evaluation of its impact should therefore always seek to identify unintended consequences – for example, by examining change in non-incentivized as well as incentivized care.

**PUBLICATIONS:**

Guthrie, B. “Trust and Asymmetry in General Practitioner-Patient Relationships in U.K. General Practice.” Book chapter, 2007 (forthcoming).

Guthrie, B. “Performing for Pay in U.K. Primary Care,” *Health Affairs* (under peer review).

Guthrie, B., Saultz, J., Haggerty, J., Freeman, G. “Why Clinicians Should Care about Continuity,” *British Medical Journal* (under peer review).

### **PLANNED PUBLICATIONS:**

“Continuity and the Medical Home: Five Key Research Questions,” (B. Guthrie, J. Saultz, J. Haggerty, G. Freeman).

“Narrative Matters: Perspectives on Choice in U.S. Health Care” (working title). To be submitted to *Health Affairs* (V. Alakeson, M. Booth, R. Foy, B. Guthrie, R. Lopert).

“Understanding Non-Financial Incentives in Pay-for-Performance: The Case of Performance-Based Auto-Assignment.” To be submitted to *Health Services Research* (B. Guthrie, A. Bindman, G. Auerback).

“What Changed When Incentives Changed in California Medicaid?” To be submitted to *Health Affairs* (B Guthrie, A. Bindman, G. Auerback).

### **PRESENTATIONS:**

“Did Pay-for-Performance Change Anything in Primary Medical Care in the United Kingdom?” Plenary Presentation, Society for General Internal Medicine Annual Meeting, Toronto, April 2007.

“It’s Not Rocket Science: Responding to Pay-for-Performance in a U.K. Primary Care Practice.” Improving Practice Management Poster Presentation, Society for General Internal Medicine Annual Meeting, Toronto, April 2007.

“Implementing Pay-for Performance: What Changed When Incentives Changed in Primary Medical Care in the United Kingdom?” Academy Health Annual Research Meeting, Orlando, June 2007.

**RICHARD HAMBLIN** (United Kingdom)

Head of Analytic Support

Healthcare Commission, London

**Project Title:** Informing for Improvement: the Who, How and What of Using Information to Improve the Provision of Healthcare

**Placement:** Center for Health Studies, Group Health Cooperative of Puget Sound, Seattle

**Mentor:** Eric Larson, M.D.

### **Project Abstract**

**Research Objectives:** Provision of information concerning performance and quality of health services for patients and the public is a growing industry in both the United States and the United Kingdom. Yet there is little evidence that patients have made widespread use of this information themselves to either directly choose between providers or to evaluate the quality of the care they receive and use it as a support for adopting more of a partnership with healthcare professionals. The objectives of this research project are to:

- Determine whether the provision of performance information aimed at supporting judgments at a specific (i.e. point in the patient pathway) or general level is of greater value;
- Define more closely what use patients could make of existing performance information;
- Use the results of this to guide an analysis of the characteristics of the potentially available measures and data;
- Tentatively suggest the characteristics of useful information for different types of judgment.

**Study Design:** In combination with a review of existing evidence, interviews with clinical and patient experts, and a review of pre-existing performance data, this study included a written postal survey of 600 Group Health enrollees equally divided between users and non-users of My Group Health (Group Health's shared electronic medical record portal system) and between diabetics and those with no long-term condition. The survey asked 22 questions to test the following hypotheses that:

- Patients with long-term conditions are more interested in and likely to use information about health service quality;
- My Group Health users are more interested in and likely to use information about health service quality;
- Less satisfied patients are more interested in this information;
- All patients are more likely to use such information to boost their confidence and be more assertive in their relationship with their existing providers than seek to change their provider;
- My Group Health would be an appropriate dissemination medium for such information.

**Principal Findings:** Policies that have underpinned measurement and publication of quality data have assumed that expressions of enthusiasm for such information would translate into very active uses – particularly to choose and change health care provider. Yet despite a burgeoning market in health quality information provision, including television advertising of various schemes and widespread professed interest in such information, knowledge of existing reporting schemes is strikingly low and use is even lower. This has provoked much speculation, and some useful research, into ways of better presenting information about quality and performance.

However, this apparent contradiction between much interest and little use may mean that it is unrealistic to expect that interest in the information translates into a desire to use it, especially as a guide to selecting high performing health care providers. Several published studies show that only a minority of patients are motivated to use quality and performance information in this way. Given a range of potential uses for quality information, a significant plurality were most concerned with simply **better understanding** the

quality of services they receive. These respondents were just as interested in having information about quality of services as those who wished to make more active use of it.

Two further findings from the survey support this hypothesis:

- Those patients who were less satisfied with their doctor were no more interested in quality and performance information than those who were satisfied;
- There was a clear and consistent preference for information that presents quality against an expected benchmark rather than some type of ranking or “league table” designed to make comparison (and thus choice) between individual providers easier.

Among the 20 to 25 percent of patients who might use information in a very active way, a majority expressed a preference for using the information to strengthen their capacity to be more assertive in their relationships with their health care providers, rather than using it as the basis of seeking a better provider.

There is remarkably little difference in the level of enthusiasm for quality information, which is uniformly high among patients with and without long-term conditions, and among those who use shared medical records (and therefore have experience of rapid flow of pertinent information) and those who do not. This result was not as expected and argues against the hypothesis that patients with long-term conditions and those used to a regular flow of information respond differently to this type of information. There are, however, some differences in the desired presentation and priorities for use of the information between the different types of respondent. For example, patients with a long-term condition appear more likely to prioritize using information to support their assertiveness in their relationship with the care providers.

**Conclusions:** While there is widespread patient interest in performance and quality information, knowledge and use of available information is low across different groups of patients. Contrary to expectations, there appears to be little difference in expectations, interest or potential use between different groups. Contrary to the widespread policy assumption, a significant plurality of surveyed patients saw the principal use of such information as allowing “better understanding” of performance. This may be interpreted in a number of ways, for example as an instance of the concept of “information as a resource,” or as a precursor to the expected active response. There are a range of views concerning the desired level and focus of information, and there is no overwhelming desire to “personalize” results by linking them to an individual doctor or other professional.

**Implications for Policy, Delivery or Practice in the United States and the United Kingdom:** There is little evidence that most patients want information primarily to choose provider, which challenges the common stated policy assumption in the United States and the United Kingdom that information publication will stimulate consumerism through choice and thereby lead to improvement in quality. Nonetheless, the high level of interest in performance data suggests that public reporting is important for reasons of accountability and reassurance.

A different goal of supporting trust in and understanding of the quality of services through increased transparency remains a worthwhile policy objective. Such a goal has serious implications for presentation of data – for example, comparisons with an “expected” range of performance becomes more important than allowing easy comparison between providers. Doing this effectively creates several technical challenges. These include balancing three different types of measures: adherence to appropriate clinical process; outcomes of care; and patient experience. Comparison against an expected range of performance implies either using external benchmarks or an intelligent approach to relative performance. Both have technical challenges. The process of setting external benchmarks is complex, and the United Kingdom may have something to learn from the National Quality Forums approach to endorsement. In contrast, relative measurement has some complex technical challenges around measuring outliers and developing composite indicators. Here the United States may be able to learn from work undertaken at the Healthcare Commission.

## **PUBLICATIONS:**

Coleman K, Hamblin R. "Perspective: Can Pay-for-Performance Improve Quality and Reduce Health Disparities?" *PLoS Medicine* (forthcoming).

Hamblin, R. "Publishing 'Quality' Measures: How It Works and When It Doesn't," *International Journal for Quality in Health Care* (forthcoming).

## **PLANNED PUBLICATIONS:**

"For and Against Pay for Performance" (R. Hamblin, A. Kafetz).

"How Will Patients Use Information? Results of an Opinion Survey."

"Measurements, Incentives and Improvement: What Are the Advantages, What Are the Pitfalls and What Might Work? A Review of Incentivized Measurement Schemes in the United States and the United Kingdom Since 1990."

"Narrative Matters: Perspectives on Choice in U.S. Health Care" (working title). To be submitted to *Health Affairs* (V. Alakeson, M. Booth, R. Foy, B. Guthrie, R. Lopert).

## **PRESENTATIONS:**

"A Brief History of Performance Measurement in England." Works in Progress Seminar, University of Washington Medical School, October 23, 2006.

"Review of First Four Months' Work." Team Meeting, Center for Health Studies, Seattle, January 4, 2007.

"Measuring Performance in the United Kingdom." Joint Commission Performance Measurement Strategic Issues Working Group, Joint Commission Headquarters, Chicago, March 5, 2007.

"Measurement, Incentives and Quality." Joint Commission Division of Research, Joint Commission Headquarters, Chicago, March 8, 2007.

"Pay for Performance and Incentivized Measurement Schemes." Vancouver Coastal Health Authority, Senior Executive Team, March 13, 2007.

"Pay for Performance Opportunities and Pitfalls." Board Meeting, Vancouver Coastal Health Authority, April 17, 2007.

**KATHARINA JANUS, Ph.D.** (Germany)  
Senior Lecturer in health services and health system research  
Hannover Medical School

**Project Title:** Decision-Making Across Medical Specialties – Shedding Light On the Real Effects of Incentives At the Point-of-Care

**Placement:** Department of Health Policy and Management, Mailman School of Public Health, Columbia University, New York

**Mentors:** Lawrence D. Brown, Ph.D., Sherry Glied, Ph.D., and David Blumenthal, M.D.

### **Project Abstract**

**Research Objective:** Current performance measurement initiatives experiment with incentive systems for physicians, aiming at increasing the reporting rate of certain predefined quality measures and unexpected events that occur. While there is literature on monetary and non-monetary incentives and their likely effects on physicians' performance, the actual decision-making process of physicians (that is/could be affected by incentives) has only been addressed in a limited way in the literature. This decision-making process varies across different specialties (according to different degrees of routine and non-routine procedures/interventions), involves the use of technologies/systems and depends on the structures of the organization (the hospital).

The purpose of this project is to shed light on the decision-making process of physicians for unexpected and atypical events in order to gain insight as to how incentives are perceived by physicians and what their actual impact on decision-making is.

**Study Design:** To elucidate the determinants of physician decision-making, physicians of four specialties (surgery, general internal medicine, anesthesiology and psychiatry) were recruited for qualitative interviews at New York Presbyterian Hospital and Weill/Cornell Medical Center. These four specialties represent a useful continuum and were chosen because they involve a different degree of routine and non-routine treatment processes. Tape-recorded interviews were conducted face-to-face. The tapes were transcribed and evaluated using content management software. 40 interviews are currently in the database. Further interviews will follow (60 in total).

**Preliminary Findings:** Physicians of different specialties show different but distinguishable decision-making patterns. While the frequency of unexpected and atypical events decreases along the continuum from anesthesia to psychiatry, the uncertainty in decision-making increases. Anesthesiologists have rehearsed their (mostly individual) response to the unexpected extensively, while psychiatrists make their decisions as the situation unfolds and use a team-approach. When designing incentive systems, the impact of physician cultures that vary considerably across specialties and the system factor must be taken into account. The system factor supports physicians in different ways, depending on the stage of decision-making. While reporting systems can serve as a data collection tool to document decision-making retrospectively, more nuanced decision-support systems are required to support actual decision-making in situations of uncertainty. Finally, prospective decision-making (managing uncertainty ahead) benefits from learning systems.

**Implications for Policy, Delivery or Practice in the United States and Germany:** As private and public purchasers of health care services have turned to pay-for-performance, the design of incentive systems that achieve long-term and sustainable change of physicians' behavior and improve outcomes for patients is an urgent matter. This project sheds light on how incentives or, rather, incentive systems trigger physicians' behavior. In particular, physician decision-making patterns that underlie uncommon and more nuanced interventions will help to find approaches and set incentives to improve care in critical

events in the future.

Principal lessons gained from this research include the following:

- Before designing incentive systems we have to understand physician decision-making.
- Managed care (Standard Operating Procedures) does not apply to decision-making under uncertainty.
- But: unexpected events derive from intrinsic uncertainty.
- Errors in medicine are not only a system problem, the human factor is crucial. Managing uncertainty has its own challenges.
- But: systems can support physician decision-making in different ways to enhance quality of care.

### **PUBLICATIONS:**

Janus, K., Amelung, V.E., Gaitanides, M., Schwartz, F.W. “German Physicians ‘On Strike’ – Shedding Light on the Roots of Physician Dissatisfaction,” *Health Policy*, November 28, 2006.

Janus, K., Brown, L.D. “Medicare as Incubator for Innovation in Payment Policy,” *Journal of Health Politics, Policy and Law*, 32(2): 293-306, 2007.

Glied, S.A., Janus, K. “Managed Care and Public Health,” In: Heggenhougen, K., *Encyclopedia of Public Health* (in press).

Janus, K., Amelung, V.E., Baker, L.C., Gaitanides, M., Schwartz, F.W., Rundall, T.G. “Monetary and Non-Monetary Drivers of Physician Job Satisfaction – Insights From a Cross-National Comparative Study,” *Journal of Health Politics, Policy and Law* (under peer review).

### **PLANNED PUBLICATIONS:**

“Cross-National Study on Physician Job Satisfaction.” To be submitted to *Das Gesundheitswesen*.

“Medical Decision-Making Under Uncertainty.” To be submitted to the *New England Journal of Medicine* or the *British Medical Journal* (D. Blumenthal, R. Bohmer, L. Brown, K. Janus).

“Results of Current Study.” To be submitted to *Health Affairs* and *Administrative Science Quarterly*.

### **PRESENTATIONS:**

“Managed Care Approaches in Developing Countries – Pay-for-Performance to Ensure Quality of Care Delivery.” United Nations and Academy of Management Global Forum, Cleveland, October 2006.

“Getting Beyond Money: What Else Drives Physician Performance?” Second National Pay-for-Performance Summit, Los Angeles, February 2007.

Monetary and Non-Monetary Drivers of Physician Job Satisfaction: Insights From a Cross-National Comparative Study.” Health Workforce Conference, Geneva, March 2007.

“Decision-Making Across Medical Specialties – In Search for Evidence for Future Performance-Enhancing Incentive Systems.” Fifth Annual Bay Area Health Care Quality and Outcomes Conference, Oakland, May 2007.

**RUTH LOPERT, B.Sc., B.Med., M.Med.Sci.** (Australia)

Principal Adviser

Pharmaceutical Policy Taskforce

Department of Health and Ageing, Canberra

**Project Title:** Comparing Cost, Coverage, and Access to Pharmaceuticals Under Australian and United States Policy Frameworks

**Placement:** Department of Health Policy, School of Public Health & Health Services, George Washington University, Washington, D.C.

**Mentors:** Sara Rosenbaum, J.D., Marilyn Moon, Ph.D., and Bruce Stuart, Ph.D.

### **Project Abstract**

**Research Objectives:** In establishing the Pharmaceutical Benefits Scheme (PBS) more than 50 years ago, Australia signaled affordable access to medicines as a national health policy priority. The PBS utilizes a single national formulary and cost effectiveness as a key criterion for formulary listing, to ensure that listed medicines represent value for money for the Australian taxpayer. The result is that for many, medicines prices are significantly lower than in the United States.

By contrast it was not until the introduction of Medicare Part D in 2006 that millions of elderly and disabled Americans gained access to subsidized prescription drug coverage, and the design of Medicare Part D reflects a distributed market-based structure with premiums and formularies set by individual insurers, and a reliance on competition between providers to limit costs.

The use of an economic “fourth hurdle” in Australia has led to a view that the PBS is a significant non-tariff barrier to the Australian market. In addition, it is often argued that countries like Australia that use regulated pricing systems are “free-riding” on the research and development investment of U.S.-based companies, gaining access to innovative medicines without contributing substantively to the costs of their discovery and development. Thus in setting its trade negotiation agenda in 2002, Congress directed the United States Trade Representative (USTR) to seek “*the elimination of government measures such as price controls and reference pricing which deny full market access for United States products*” in markets abroad, and it was in the negotiation of the Australia-United States Free Trade Agreement (AUSFTA) that this was first tested.

Since the conclusion of the AUSFTA, considerable public debate in Australia has focused on the potential impact of the pharmaceutical provisions of the agreement on the future operation of the PBS. Issues of concern have included whether Agreed Principles by which both Parties commit to “... *promote timely and affordable access to innovative pharmaceuticals through transparent, expeditious, and accountable procedures ... (and to)... recognize the value of innovative pharmaceuticals*” would become a mechanism by which the United States would continue to pressure Australia with respect to PBS pharmaceutical prices.

As Medicare Part D is the largest government-funded pharmaceutical reimbursement program in the United States, it is thus useful to examine the way in which it operates and, by comparing the features of the program with those of the PBS, examine how the reciprocal commitments of the AUSFTA are reflected in the way in which they operate.

The objectives of this research project are to:

- Provide an understanding of the formulary selection, coverage and cost of selected Medicare Part D drugs and drug plans;
- Compare access, cost and coverage under Part D with that provided by the Australian

Pharmaceutical Benefits Scheme (PBS);

- Inform an assessment of the extent to which Medicare Part D is meeting its broader policy objectives;
- Enable a consideration of whether (and at what cost) it is possible to construct frameworks that deliver comparable access, while at the same time supporting fundamentally different policy frameworks; and
- Inform discussions in both countries of how the two frameworks identify and reward pharmaceutical innovation and the extent to which they reflect adherence to Agreed Principles contained in the AUSFTA Annex 2-C on Pharmaceuticals.

**Study Design:** The study design included semi-structured key informant interviews with representatives of the top ten Part D providers (representing 72% of enrolments in 2006) as well as contextual interviews with representatives of the pharmaceutical and health insurance industries, the Centers for Medicare and Medicaid Services (CMS), and the United States Pharmacopeia Inc. (USP). Data on Part D standalone plan drug prices and plan characteristics were sourced from CMS. Data on PBS formulary and prices are available online.

**Principal Findings:** The two programs reflect largely antithetical policy frameworks, and differences in key objectives and design features give rise to fundamental differences in costs, both to payers and consumers. Differences in coverage and access were more difficult to establish due to the plethora of Part D options and the multiple dimensions of variation in plan design.

Part D Participating Drug Plan (PDP) providers interviewed were generally reluctant to discuss formulary design; for most providers, formulary design is a highly confidential process. Most showed a degree of homogeneity in structural aspects of formulary design and management, with near universal adherence to USP Model Guidelines, although strategies around the number and spread of drugs available and the extent to which price signals are used to drive utilization showed greater variation. When considering the addition of new drugs to formularies, Pharmacy and Therapeutic Committees generally had difficulty comparing treatments due to poor availability of comparative efficacy and safety and only one respondent reported an explicit consideration of comparative cost effectiveness, where relevant data were available. Most stated that decisions to add new drugs to Part D formularies were made without consideration of cost but that this subsequently drove tier placement and the application of utilization management tools.

No providers reported the explicit identification, measurement and valuation of “innovation” when evaluating new drugs, but most tried to identify qualitatively those drugs considered to reflect substantive advances in therapy. The CMS regulations requiring plan formularies to include at least two drugs in each pharmacologic class, all (or nearly all) drugs in six protected classes, and in particular, one drug in each formulary key drug type (FKDT), constrain plans’ ability to discriminate between major and minor advances in therapy and limit the capacity to negotiate effectively on price, leaving formulary tier placement or utilization management (e.g. prior authorization) the only avenues for leverage in the price negotiation.

Previous inter-country price comparisons have not taken into account issues of access, nor have the costs of typical treatment regimens been compared. Comparisons across a number of sample regimens developed by CMS showed significantly higher prices and out-of-pocket costs for Part D enrollees, when compared with the PBS. Moreover, for the sample regimens, out-of-pocket costs with Part D coverage exceeded total costs of the retail purchase of the same regimens (i.e. in the absence of subsidy) in Australia. However, comparisons of innovative drug prices showed that for many drugs, prices for subsidy purposes were higher under the PBS.

**Conclusions:** Various features of the design of Medicare Part D give rise to a complex, inefficient and unstable benefit, with high out-of-pocket costs for consumers, limited market power for providers, and

non-transparent formulary decision-making. Despite the many plans offered in each region, the Part D market is highly consolidated and likely to become more so with the lessening of federal risk protections over time. As further consolidation occurs, there will likely be less competition in the market and beneficiary costs may increase over and above the increases already projected by CMS. Moreover, various features of the implementation of the program limit the extent to which competition can drive efficiencies; however, increasing scope for competition would necessitate the lessening of safeguards on coverage of certain classes of drugs and would therefore represent a trade-off with accessibility. Left unchanged, continued growth in the prices of medicines, lessening of competition over time, and increasing demands for mandatory coverage of certain drugs will mean the program becomes less and less affordable to both individuals and the taxpayer over time.

By contrast, the PBS provides a more transparent, stable, equitable benefit, with both lower overall expenditure and substantially lower patient contributions. However, while prices for many commonly used medicines are lower, prices for many innovative medicines are higher, giving support to the conclusion that prices in regulated markets are not always lower than in “non-regulated” systems and that, when determined on the basis of therapeutic value, may provide a more explicit mechanism for the recognition of innovation

***Implications for Policy, Delivery or Practice in the United States and Australia:*** Although only recently established, Medicare Part D may not reflect a sustainable or affordable model for an outpatient drug benefit. To the extent that Medicare Part D is the largest single federally funded pharmaceutical program, it may be considered a reflection of the manner in which the United States demonstrates its adherence to the AUSFTA Agreed Principles. However, the design of Part D does not generally provide for the recognition of the value of innovative pharmaceuticals through the operation of competitive markets, nor is there evidence that providers utilize procedures that value the objectively demonstrated therapeutic significance of these products. Moreover, the commitment to promote timely and affordable access to innovative pharmaceuticals through transparent, expeditious, and accountable procedures is not well reflected in the operation of the program, as formulary selection processes are generally highly confidential and therefore non-transparent. By contrast the Australian PBS utilizes an evidence-based assessment of therapeutic value to determine prices for subsidy purposes, suggesting closer adherence to the intent of the AUSFTA text and supporting higher prices for innovative products that offer demonstrable advances in therapy.

#### **PUBLICATIONS:**

Roughead, E.E., Lopert, R., Sansom, L.N. “Does Australia pay more than the United States for Innovative Pharmaceutical Products?” *Value in Health* (forthcoming).

Lopert, R., Moon, M. “Towards a Rational, Value-Based Drug Benefit for Medicare.” *Health Affairs*, (under peer review).

#### **PLANNED PUBLICATIONS:**

“Narrative Matters: Perspectives on Choice in U.S. Health Care” (working title). To be submitted to *Health Affairs* (V. Alakeson, M. Booth, R. Foy, B. Guthrie, R. Lopert).

“What is Fair? Prescription Drug Resource Allocation for the Elderly in the United States and Australia.” To be submitted to the *Journal of Law, Medicine and Ethics* (R. Lopert, S. Rosenbaum).

#### **PRESENTATIONS:**

“Drug Policy Downunder – Paying for Performance.” Presentation to MPH/MPP class, Columbia University, New York, November 13, 2006.

“Pharmacoeconomics & Drug Subsidy in Australia.” Evidence, Economics, and Politics - Australia’s Experiment in Evidence-Based Medicine, San Francisco, December 12, 2006.

“An Overview of the PBS.” Presentation to Kaiser Permanente Northern California Pharmacy & Therapeutics Committee, Oakland, January 10, 2007.

“Comparative Effectiveness Analysis – Prospects for the US.” Panel presentation, Department of Health Policy Public Seminar, George Washington University, Washington, D.C., January 31, 2007.

“Access & Affordability for Consumers in Australia.” AARP: Congressional Briefing on International Pharmaceutical Pricing, Washington, D.C., February 8, 2007.

“Pills & Prices, Patents & Profits: Free Markets vs Free Riders?” Presentation to Student Academy Health seminar, George Washington University, Washington, D.C., April 2, 2007.

“Drugs Downunder: An Overview of Pharmaceutical Policy, Antipodean Style.” Policy Round Presentation to Ministry of Health, British Columbia, Victoria, April 27, 2007.

“A View From Abroad: An Overview of Drug Reimbursement and Formulary Decision-Making in Australia.” Drug Effectiveness Review Project Governance Conference, Portland, May 10, 2007.

**ANATOLE S. MENON-JOHANSSON,**  
**M.B., B.Chir., Ph.D., M.R.C.P., DFFP, DipGUM** (United Kingdom)  
Senior Registrar Genitourinary Medicine  
Chelsea & Westminster Hospital, London

**Project Title:** The Development of Models for the Evaluation of Barriers to Effective HIV / AIDS Prevention in the United States

**Placement:** Harvard Medical School, Boston

**Mentors:** Harvey Makadon, M.D., and Jean Flatley McGuire, Ph.D.

### **Project Abstract**

**Research objectives:** AIDS, like syphilis, is a potentially lethal sexually transmitted infection. Since the first description of AIDS in 1980 there have been rapid scientific developments that have converted an almost universally lethal disease into a chronic treatable viral illness. Yet despite advances in scientific knowledge, testing, and treatment, this biomedical success story has not produced uniform results. The interaction of science with ideology, economics and sociology appears to have compromised public health. This project aimed to investigate the barriers to effective HIV/AIDS prevention across distinct borders using an ecological analysis within the United States. This project addresses the following questions:

- How does AIDS prevention vary by each state?
- What epidemiological, economic, demographic, social, legal and structural variables correlate with the variations in state-to-state AIDS prevention results?
- If clear correlations exist, which combinations are most important and can they be used to predict AIDS prevention success?

**Study design:** AIDS cases reported in each state and the District of Columbia (D.C.) between 1995 and 2004 were obtained from the Center for Disease Control and Prevention (CDC). An average annual change in AIDS cases was determined by Poisson regression, adjusting for population change over the decade. This model was tested against data that mimicked the magnitude and percent change of AIDS cases across the United States. The linear correlation between AIDS prevention performance for each state was then tested against variables known to be important in HIV / AIDS prevention. Data sources include: Kaiser Family Foundation, U.S. Census Bureau, CDC, U.S. Supreme Court and the Beasley School of Law. Finally a logistic regression model was developed to predict successful AIDS prevention.

**Principle findings:** The Poisson regression model proved accurate at describing the average annual percentage AIDS prevention for each state, despite the wide range of adult AIDS cases in 1995 (e.g. 11,064 in California, 5 in North Dakota). When the model was tested against standardized data, the median error was 0.36 percent for states with ten AIDS cases in 1995. AIDS prevention performance varied significantly between states and between the sexes. Across the 51 regions, in men the average annual AIDS prevention was 8.4 percent; this was significantly greater than the 3.1 percent recorded for women. In 20 states and DC, the number of AIDS cases actually rose in women over the decade. To test if the size of the epidemic has influenced this result in women, a sub-analysis was performed only in those 19 states where more than 100 cases of AIDS occurred in 1995. In these states, the average annual AIDS prevention was minimally changed at 3.2 percent.

AIDS prevention was less effective in those states with increased poverty, elevated gonorrhoea and teenage birth rates. When poverty was broken down by race, only black poverty correlated with less effective AIDS prevention. No correlation was found between the number of reported cases of AIDS linked to “at risk” groups [men who have sex with men (MSM) & intravenous drug users (IVDU)] and AIDS prevention performance. Some states have laws that discriminate or support these “at risk” groups. The

effect of these laws on AIDS prevention was investigated. Prior to the U.S. Supreme Court declaring sodomy laws unconstitutional in 2003, 13 states had such laws and these states were 1.5 percent less effective at preventing AIDS than in those states without sodomy laws. The provision of clean syringes is a well-established method to prevent HIV transmission between IVDU. Those states with laws authorizing syringe exchange programs (SEP) prevented AIDS on average 3.1 percent per year more effectively than those states without SEP authorization laws.

A second model was developed using logistic regression to test the relationship between correlating variables and AIDS prevention “success” for both men and women (i.e. AIDS prevention greater than an average of 6.5% per year). Using a forward stepwise selection criteria, three variables were identified that predicted AIDS prevention success; these variables were poverty, gonorrhea rate and lack of SEP authorization laws. The median percentage living in poverty in the United States in 2004 was 15.6 percent [IQR 13.7 , 19.0], and for each one percent rise in poverty, the odds of effectively preventing AIDS fell 20.82 percent. In 2004, the median number of gonorrhea cases was 98.4 per 100,000 population [IQR 49.2 , 144.7], and for each rise of 20 cases per 100,000 the odds of effectively preventing AIDS fell 29.4 percent. Finally, the lack of a law authorizing SEP was associated with a 90 percent reduction in the odds of a state effectively preventing AIDS. The sensitivity and specificity of this prediction model was 83 percent and 79 percent, respectively.

**Conclusions:** The barriers for effective AIDS prevention in the United States are associated with poverty, poor control of sexually transmitted disease and the lack of SEP authorization laws. AIDS prevention has been significantly less effective in women, and this was associated with decreased reproductive health.

**Policy, Delivery and Practice Implications for the United States and Beyond:** AIDS prevention could be improved in the United States by:

- Broadening the AIDS prevention focus away from traditional “at risk” groups;
- Standardization of SEP authorization laws and the care of IVDU;
- Improving sexual and reproductive health;
- Poverty alleviation.

### **PLANNED PUBLICATIONS:**

“Project Results: Policy Implications for the United States and the Funding of International HIV / AIDS Programs Abroad.” To be presented to the *Kaiser Family Foundation*.

“Project Results: Summary Paper.” To be submitted to the *Journal of American Medicine* or *The Lancet*.

“The AIDS Prevention Model and Public Health.” To be submitted to the *American Journal of Public Health*.

### **PRESENTATIONS:**

“The Barriers to Effective HIV / AIDS Prevention in the United States.” Poster Presentation for MPH practicum, Harvard School of Public Health, Boston, March 19, 2007.

“Developing and Testing a Model for the Investigation of Barriers to Effective HIV / AIDS Prevention in the United States.” Presented to Spring class on Public Health Surveillance, Harvard School of Public Health, Boston, May 18, 2007.

“AIDS Prevention and Gender Inequity in the United States.” International Society for the Study of Sexually Transmitted Diseases, Seattle, July 2007.

“AIDS Prevention in Men and the Impact of Race, Insurance Status, Poverty and Rural Population.”  
International Society for the Study of Sexually Transmitted Diseases, Seattle, July 2007.

“AIDS Prevention in Women in the United States and the Impact of Sexually Transmitted Diseases and Intravenous Drug Use.” International Society for the Study of Sexually Transmitted Diseases, Seattle, July 2007.

**CARLY MULLER** (Australia)  
 Senior Policy Adviser  
 Primary Health Branch  
 Victorian Department of Human Services, Melbourne

**Project Title:** Chronic Disease Self-Management – A Systematic Review of Proactive Telephone Applications

**Placement:** Division of General Internal Medicine, University of California, San Francisco

**Mentors:** Dean Schillinger, M.D., and Andrew Bindman, M.D.

**Project Abstract**

**Research Objective:** International health care systems must reorient provision of care to adequately meet the needs of chronic disease sufferers. Long-term, evidence-based practices are required to maximize patient function and prevent disability. Telephonic technologies may be part of a solution. However, prior to implementing these programs on a broad scale, health system planners need a comprehensive understanding about the structures, reach and effectiveness of such programs.

The objective of this project is to undertake a systematic literature review to:

1. develop a conceptual schema of telephone-based proactive models of care;
2. examine intervention effectiveness based on quantitative data reported in included articles; and
3. examine population-level reach – in particular the representativeness of the sample and their engagement

in proactive telephone-based self-management (TSM) programs used to support chronic disease self-management.

**Study Design:** First, a detailed search strategy and inclusion/exclusion criteria were developed as the basis for the search and selection of relevant articles.

**Inclusion/exclusion criteria**

<b>Inclusions</b>	<b>Exclusions</b>
<ul style="list-style-type: none"> <li>• Targets all ages and individuals with one or more chronic diseases</li> <li>• Uses PROACTIVE telephone applications</li> <li>• Works WITH the patient to improve self-management</li> </ul>	<ul style="list-style-type: none"> <li>• Diagnosis-focused and/or treatment-focused services</li> <li>• Reactive information and advice lines, healthlines, help lines and hotlines</li> <li>• Fully integrated models inextricable for the purpose of study and evaluation</li> <li>• Use of telephone solely for data collection interviews</li> <li>• Intervention groups comprising ten or fewer participants</li> <li>• Articles in languages other than English</li> <li>• Published prior to 1980</li> </ul>

Next, the search query was applied to the Medline, PsychInfo, CINHALL, Cochrane Library and Journals@OVID databases. Additional articles were also identified through snowballing and referral. The search strategy was deliberately set to cast a broad net in order to capture all key articles in the area of TSM. All citations were scanned using the inclusion/exclusion criteria and articles not clearly meeting these criteria were excluded. Articles not excluded by the search strategy were reviewed in full and subjected to a strict application of the inclusion/exclusion criteria, thus distilling the collection to a final data pool. If the inclusion/exclusion status of any article was unclear, it was tabled for discussion and agreement amongst all authors. Finally, all identified articles were examined for information pertaining

to the intervention description and the reach and engagement of participants, but only articles that included a comparison group and measured effectiveness were examined for their effects. Relevant data were transcribed into a central database for subsequent analysis.

**Principal Findings:** 115 articles were identified, covering 92 different studies. 82 percent of studies were conducted in the United States. The experimental design, intervention duration, sample sizes and condition focus varied among studies. Overall, just over half (56%) of all identified literature articles did not involve any randomization and a quarter did not have a comparison group. The median sample size of intervention groups was 72. The median intervention duration was four months (range 1 day to 2 years). The interventions focused on a range of chronic diseases including diabetes (26%), cardiovascular diseases (24%), mental health/ addiction (19%) and mixed conditions (11%).

**Conceptual schema:** Overall, the intervention design, type (i.e. clinical, social and/or service linkage focus) and amount (e.g. intensity and duration) of telephone involvement reported in identified studies varied. Interventions included a number of operational functions such as participant recruitment and assessment practices, data collection, system integration, human resources, clinical and corporate governance and quality assurance. In addition, interventions provided a range of patient-centered functions (such as surveillance, patient education, clinical treatment, counseling, case management and navigation) that aimed to result in patient or health care system effects. Studies may deliver these functions through one or more modalities. Overall, the most common delivery modality for these functions was “live” calls (95%, N=87), with 26 percent (N=24) of studies using automated technologies.

**Effectiveness:** Among studies with a comparison group (N=75), almost two-thirds involved a randomized control trial design (64%, N=48). 51 percent of comparison groups involved a true control (passive) arm, 12 percent involved an alternate (active) strategy and 37 percent used multiple intervention groups. In no study did the intervention replace current activity; it was always an adjunct. For all effectiveness studies, the median intervention duration was three months (range: 1 day to 2 years) and the median duration of monitoring following intervention completion was five months (range: 1 week to 2 years).

To measure the patient and health system effects, 351 different health outcome measures were recorded, clustering in 12 categories: access, self-efficacy, knowledge, behavior, functional outcomes, physiologic outcomes, clinical guideline compliance, hospital utilization, ED utilization, outpatient visits, costs and other health care utilization. The most commonly reported categories were: functional outcomes (N=48), behavior (N=30), hospital utilization (N=24), self-efficacy (N=20) and physiologic outcomes (N=19). The least common effectiveness measures were: clinical guideline use (N=1), access (N=4), knowledge (N=9), cost (N=9) and outpatient visits (N=10).

Overall, effectiveness results were mixed. Telephone-based interventions most often achieved either similar or better outcomes compared to the study comparison group. Improvements were most likely to be observed in the domains of self-efficacy, self-management behavior and functional status, and were less common in the domains of physiologic outcomes or reduction in utilization of health care services. These patterns did not appear to vary with type of comparison group (passive vs. active), use of automated technology, or condition focus, except for studies focusing on mental health/addiction, which tended to report more non-significance. Only two articles reported worse outcomes for participants: one for self-efficacy and one for behavior.

**Reach:** No conclusions could be drawn regarding the representativeness of the samples due to the limited data reported in the articles. Furthermore, the generalizability of the results may be limited as participants were predominantly opportunistically sampled (60%) and very few studies (2%) targeted more vulnerable populations. Participant engagement data was also poorly reported but was available in 57 percent of articles (N=66) (using 35 different measures) and suggested positive results, with a high proportion of enrolled subjects engaging at least once.

**Conclusions:** Published literature regarding proactive TSM interventions that target individuals with chronic conditions is not sufficiently robust to accurately assess representativeness of studied populations, intervention reach, intervention effectiveness or potential long-term maintenance of effects. This is particularly pronounced regarding intervention reach and effectiveness for vulnerable populations. In addition, study designs and analytic approaches do not address whether the TSM model is being employed as a replacement for or as an adjunct to care. Nonetheless, available evidence suggests TSM models have the potential for superior - or at the very least equivalent - reach, engagement and health outcomes for individuals with a range of chronic diseases, when compared with "usual care." This appears to be most apparent for patient-centered measures such as self-efficacy, behavior and functional status. More rigorous research is needed on the reach and effectiveness of TSM in the short and long-term, and the cost effectiveness of this model of care.

**Implications for Policy, Delivery or Practice in the United States and Australia:** The global increase in chronic disease poses a challenge for health systems oriented towards diagnosis and treatment of acute conditions. The health care system must reorient provision of care for chronic disease sufferers to provide evidence-based interventions that maximize patient function and prevent disability. Current evidence suggests telephonic technologies are a potential solution, but governments need to support large-scale, robust trials that can provide comprehensive evidence regarding population reach, clinical impact and cost-effectiveness as a basis for policy development.

**PLANNED PUBLICATIONS:**

“Results from Meta Analysis.”

“Results from the Systematic Review.”

**PRESENTATIONS:**

“A Systematic Review of Telephone-Based Applications to Support Chronic Disease Self-Management.”  
American Society of Internal Medicine 30<sup>th</sup> Annual Meeting, Toronto, April 25-28, 2007.

“Use of Systematic Telephone-Based Interventions to Support Chronic Disease Self-Management.”  
Poster Session, Academy Health Annual Research Meeting, Orlando, June 2007.

**MIHI RATIMA, Ph.D.** (New Zealand)  
Associate Professor and Director  
Taupua Waiora Centre for Maori Health Research  
Auckland University of Technology

**Project Title:** Obesity Prevention Among Indigenous Peoples and Ethnic Minorities

**Placement:** Brigham and Women's Hospital, Boston  
**Mentor:** Paula A. Johnson, M.D.

### **Project Abstract**

**Research Objectives:** There are wide and longstanding ethnic inequalities across major chronic diseases, including cardiovascular disease, type 2 diabetes, and cancer in both the United States and New Zealand in terms of disease prevalence and outcomes. Obesity is one of the most important avoidable risk factors for these diseases, and has a high prevalence in both countries compared to other OECD countries. The prevalence of overweight (BMI  $\geq 25$ ) and obesity (BMI  $\geq 30$ ) is particularly high in both countries among indigenous peoples and some ethnic minorities. In the United States the problem is most apparent among indigenous peoples (American Indians, Alaska Natives, and Native Hawaiians), Black Americans and Hispanic Americans relative to White Americans.

As the first level of contact with the wider health system and the natural meeting point between health care and public health, primary health care services have the potential to contribute to obesity prevention action. However, there is currently limited evidence to support effective obesity prevention action at the primary health care level, particularly for indigenous peoples and ethnic minorities. This research explores distinctive issues in obesity prevention for indigenous peoples and ethnic minorities which relate, for example, to culture, lifestyle, environmental factors and primary health care.

There are two primary objectives of this research. First, to identify distinctive factors that influence overweight and obesity prevalence among indigenous peoples and ethnic minorities, and implications for intervention. Second, to identify innovative approaches, strategies and delivery systems for obesity prevention among these groups, particularly in primary care systems.

**Study Design:** This research project is qualitative and incorporates literature review, key informant interviews, and case studies of innovative obesity prevention interventions that are designed to meet the needs of indigenous peoples and/or ethnic minorities (Black Americans and Hispanic Americans).

Literature of evidence relating to the distinctive factors driving overweight and obesity prevalence among indigenous peoples and ethnic minorities as well as evidence for obesity prevention among these population groups was reviewed.

Key informant interviews were carried out with ten recognized experts who have expertise specific to obesity prevention among indigenous peoples and ethnic minorities. Collectively, the interviewees' expertise covers all stages of the life cycle and varied intervention levels (e.g. primary health care and health policy). Further, interviewees have diverse experience, including as health care practitioners, policy makers, and academics.

The research utilizes a multiple case study design. Three obesity prevention interventions that target indigenous peoples and/or ethnic minorities were identified as case studies. These case studies met the following inclusion criteria: obesity prevention interventions; a focus on indigenous peoples and/or ethnic minorities; evidence of intervention effectiveness and/or innovative approaches; located across states to provide a geographical spread; together the case studies include a variety of obesity prevention strategies;

and, providers agree to participate in the research. Case study methods will include document review and individual interviews with key stakeholders at each case study site who have knowledge in the following areas – program conception, design, establishment, delivery and outcomes. Case studies will explore the rationale for interventions, intervention approaches and strategies, characteristics of interventions, complementarity of the intervention relative to other local initiatives, stakeholder relationships, data issues, and challenges and success factors.

***Principal Findings:*** Literature review and key informant interviews indicate that there are a range of distinctive cultural, lifestyle, environmental and primary health care factors that influence overweight and obesity for indigenous peoples and ethnic minorities and that have implications for intervention. These factors relate, for example, to overweight as a community norm and preference, cultural pride as a vehicle for obesity prevention, more limited opportunities for recreational activity, and a lack of socioeconomic gradients in overweight and obesity prevalence. Within the primary health care context, despite a fragmented system which favors treatment over prevention, a number of measures have been identified that may strengthen the role of primary health care in obesity prevention. Key measures include systematic identification of patient risk through monitoring BMI, piloting interventions among high risk indigenous and ethnic minority populations, utilization of the chronic care model, and strengthening referral systems between primary health care and public health interventions. Further, there are a number of obesity prevention interventions among indigenous peoples and ethnic minorities from which key learnings can be drawn to inform future approaches. Those interventions include, for example, Pima Pride for American Indians, which is based on a community participatory model, and Hip Hop to Health for Black Americans, which has used culture as a vehicle for promoting obesity prevention.

***Conclusions:*** There are a range of proximal and distal drivers of obesity prevention among indigenous peoples and ethnic minorities that impact disproportionately on these population groups. Therefore, a multilevel model that specifically targets indigenous peoples and ethnic minorities through tailored interventions is necessary in order to address high prevalence rates and ethnic inequalities. Within this context, there is a role for primary health care and individual level interventions in contributing to a comprehensive approach; however, they should be supported by broader policy and environmental level initiatives in order to maximize impacts. Practical measures have been identified for implementation within primary care settings, the most immediate of which are regular monitoring of patient BMI and the development of referral systems to tailored public health interventions.

***Implications for Policy, Delivery or Practice in the United States and New Zealand:*** Obesity prevention among indigenous peoples and ethnic minorities may be facilitated through action in the following areas:

- In the U.S. context, universal incentives across insurers for preventive services;
- Primary health care/public health partnerships with streamlined referral systems;
- Support for deep structure tailoring of interventions to address the distinctive factors that influence obesity prevalence among indigenous peoples and ethnic minorities;
- Implement policy and environmental level interventions in concert with individual behavior change level interventions;
- Strengthening public policy that makes healthy choices the easy choices through use of tools such as equity-focused health impact assessment and the development of “best practice policy packages;”
- Build on areas where good progress has already been made and that are more likely to gain political traction, such as obesity prevention among children; and
- Coalition-building, with a particular emphasis on leadership by indigenous peoples and ethnic minorities.

**JONAS SCHREYÖGG, Ph.D.** (Germany)  
Stanford University

**Project Title:** Exploring Costs and Mortality for Treatment After AMI Among Hospitals of the United States' Veteran Health Administration and Germany

**Placement:** Center for Health Policy, Stanford University, Stanford

**Mentor:** Alan Garber, M.D., Ph.D.

### **Project Abstract**

**Research Objective:** Cross-country comparisons of costs between health care systems are usually made at the macro level and are based on data available from a variety of databases, such as OECD Health Data. The macro perspective makes it possible to identify general differences between health care systems, including expenditures by sector or overall performance. Yet the macro perspective is not always suited for an in-depth analysis of differences in efficiency and quality between health care systems. The objectives of this project are to explain variation in costs as a measure of efficiency and to explain variation in hospital mortality as a measure of clinical quality between hospitals of the Veteran Health Administration and Germany by using micro level data.

**Study Design:** The analytic framework developed in this study explores variation in costs and hospital mortality occurring at hospital and patient level, after controlling for differences in individual patients. A multilevel regression approach allows us to draw insights regarding the relative efficiency and quality of hospitals of both VHA as well as German hospitals in providing care for patients after Acute Myocardial Infarction (AMI). Furthermore, standardization of data and variables allows a direct comparison of the cost and mortality functions of hospitals in both settings, revealing causes for differences in cost and mortality levels between these settings. Data from 130 VHA hospitals and 18 German hospitals were used for the study.

**Principal Findings:** The findings suggest that the German hospitals included in the sample are more (cost-) efficient and hospital mortality is lower than for VHA hospitals. After adjusting for Purchasing Power parities, as well as controlling for a large number of co-morbidities, VHA hospitals had about 140 percent higher costs and 180 percent higher mortality than German hospitals. The results also hold after matching the patient profiles of the VHA and German samples. These results further suggest that total mean costs would be lower if German hospitals treated VHA patients instead of German patients, while total mean costs of VHA hospitals would be higher if German patients were treated instead. However, mortality would be higher if German hospitals treated VHA patients.

A large part of the cost differences is due to higher nursing costs and higher overhead costs of VHA hospitals. About 40 percent of the difference in nursing costs can be attributed to wage differences, while 60 percent of the difference is due to the higher nursing ratio of VHA hospitals. Differences in overhead costs are at least partly due the higher ratio of administrative staff in VHA hospitals of 2.0 full time equivalents per bed compared to 0.12 full time equivalents per bed in Germany. Hospitals in both systems perform a similar amount of Percutaneous Coronary Interventions, but the VHA hospitals perform more stents and particularly use more drug-eluting stents. The financial incentives of both systems would suggest the opposite, as the VHA networks are reimbursed by capitation and German hospitals receive DRGs. This cannot be explained by financial incentives within both systems, as there is no financial incentive for German hospitals to avoid stenting. The marginal costs of technology are lower for VHA than for German hospitals and the length of stay is lower for VHA hospitals, too. Taking the results of other studies into account, the costs of Medicare hospitals are even higher while mortality is lower compared to VHA hospitals. Costs for Medicare seem to be especially higher for more complex technologies.

**Conclusions:** The analysis demonstrates the potential of health system comparison with micro-level data. German hospitals are more efficient and hospital mortality is lower. The inefficiency is mainly due to the higher nursing ratio, higher wages, use of more complex technologies, and higher overheads, but the inefficiency is not due to length of stay and the cost of technology. Therefore it is neither the prices or the utilization which contribute to high costs of the VHA and the U.S. health care system in general; rather, it is a combination of both.

**Implications for Policy, Delivery or Practice in the United States and Germany:** Generally it can be assumed that the standardization and broader availability of micro-costing data would largely facilitate performance measurement among hospitals as well as health care systems. The quality and availability of data on efficiency and quality in health care should be improved. Each country should maintain an accessible representative micro data panel to improve cross-country learning possibilities.

For the fragmented German health care system integration of health care delivery and insurance function, as practiced by the VHA, would be likely to improve public health planning. In addition, central purchasing practiced by hospitals and health insurance funds could lower prices for technology and drugs substantially. One implication for the VHA or U.S. health care system in general is that the use of less complex technology does not necessarily lead to higher mortality. According to this study, reduction of mortality and bureaucracy should be high on the agenda for the near future.

#### **PUBLICATIONS:**

“A Micro-Costing Approach to Estimate Hospital Costs for Appendectomy” (under peer review).

“Exploring Costs and Mortality for Treatment After AMI Among Hospitals of the U.S. Veteran Health Administration and Germany” (under peer review).

#### **PLANNED PUBLICATIONS:**

“Cost-Effectiveness of Appendectomy in Two Health Care Systems.”

“On the Relation of Quality and Costs: The Case of AMI.”

“Why Do Costs Differ Between Health Care Systems? A Decomposition Approach.”

#### **PRESENTATIONS:**

“Technology Utilization and Costs for Treatment After Acute Myocardial Infarction: A Multilevel Modelling Approach.” Research Seminar, Bocconi University, Milan, May 2, 2007.

“Explaining Cost Inefficiency of AMI Treatment Among VA and German Hospitals,” Academy Health, Orlando, June 3, 2007.

“Exploring Costs and Mortality Treatment after AMI Among Hospitals of the U.S. Veteran Health Administration and Germany,” Research in Progress Seminar, Stanford University, Stanford, July 11, 2007.

**LAUREL K. TAYLOR, Ph.D.** (Canada)

Assistant Professor

Departments of Medicine & Neurology

McGill University, Montreal

**Project Title:** Enhancing Health Management: Predicting Physician Utilization of Integrated Electronic Prescribing

### **Project Abstract**

**Research Objective:** Introduction of new technologies in health care offers promise of enhanced outcomes for patients and improved professional satisfaction for providers. While resulting individual clinical benefits of optimal treatment have sometimes been substantial, all the anticipated gains have not consistently been realized, or even measured. In particular, the assessment of the societal impact of technologic innovations in health care has not often been studied. This appears to be due to a general insensitivity for the importance of human impact in the design and implementation of new systems, as well as non-consideration to the presence and interrelationships of organizational and system level factors. In Canada, general practitioners generate the majority of prescriptions. Technology support to these principal prescribers provides an opportunity to reduce the frequency and clinical consequences of their prescribing, transcription and dispensing errors, and to improve knowledge translation to them on their improved prescribing performance. However, changing the prescribing behavior of physicians, particularly for complex aspects of care, can be a formidable challenge. A richer understanding of characteristics which predict adoption and utilization of electronic prescribing systems will assist in developing successful policies for wide implementation. The objective of this research is to define and analyze predictors of physician utilization of electronic prescribing through an integrated drug and disease management system.

**Study Design:** 61 general practitioners, in 26 clinic sites within a large Canadian urban setting, participated in this study. Data were collected from multiple sources to create the independent predictor variables for the utilization model. Physician and practice indices were developed using electronic audit trail data and survey data collected from study participants. Provincial medical services claims data and medication claims data were also used to calculate practice indices. A multiple regression model was used to determine physician characteristics that significantly influenced electronic prescribing utilization rates.

**Principal Findings:** A total of 18,604 patients (20% of all patients in the physician practices) participated in the study. 60 percent of these patients were female and 46 percent were over 60 years of age. Consenting patients had an average of 4.4 visits to the study physicians in the 18 months prior to the study period. The study physicians were 46 percent female, with 90 percent graduating prior to 1989. In terms of response style to new information, physicians' typology was classified as pragmatist (34%), seeker (16%), receptive (15%) and traditionalist (5%). The computer utilization rate of the study physicians was 30 percent, with a range of 0 to 75 percent. 58 percent had less than five hours per week of computer use prior to participating in the project. The full model explained 49 percent of the variation in utilization rate, with physician response typology, prior computer experience and average number of medications per patient being the most important predictors of electronic prescribing utilization. These results confirm a variation in utilization of electronic prescribing and provide an initial glimpse into the causal factors. Further development of the utilization model is required to define the remaining factors, including care episode, patient, and system level predictors of utilization.

**Conclusions:** Developing a more complete understanding of the factors driving physicians' decision-making in use of electronic prescribing can influence clinical policies and individual practices and improve the benefits that can be realized from health information technologies.

***Implications for Policy, Delivery or Practice in Canada:*** The safety and quality of health care provided to the patient population can be improved through the integration of technology by:

- Understanding that availability of information technology, alone, is insufficient for its widespread adoption and utilization;
- Realizing financial incentives are insufficient to create broad adoption and high levels of utilization of electronic prescribing in community practices;
- Further testing of user-responsive, needs-based training and implementation programs, based on a range of physician and practice typology and characteristics.

### **PUBLICATIONS:**

Kawasumi, Y., Tamblyn, R., Platt, R., Ernst, P., and Taylor, L. "Evaluation of the Use of an Integrated Drug Information System by Primary Care Physicians for Vulnerable Populations," *International Journal of Medical Informatics*, (forthcoming).

Winslade, N., Tamblyn, R., Taylor, L., Schuwirth, L., Van der Vleuten, C. "Integrating Performance Assessment, Maintenance of Competence and Continuing Professional Development of Community Pharmacists," *American Journal of Pharmaceutical Education*, 2007 71 (1): article 15.

### **PLANNED PUBLICATIONS:**

"Enhancing Health Management: Predictors of Physician Utilization of Electronic Prescribing." To be submitted to *Health Affairs*.

### **PRESENTATIONS:**

"Understanding Predictors of Electronic Decision Support Utilization by Physicians." MedNET 2006 World Congress on Internet in Medicine, Toronto, October 2006.

"Early Adoption of IT in Health: Predictors of Physician Utilization of Electronic Prescribing," Academy of Management Annual Meeting, Philadelphia, August 2007.

"Using an Electronic Prescribing Tool as a System for Chronic Disease Management," MedInfo 2007, Brisbane, August 2007.

**DIANE E. WATSON, Ph.D. (Canada)**

Director of Research and Analysis  
Health Council of Canada, Vancouver

**Project Title:** Primary Health and Chronic Illness Care: Canadians Report on Quality and Outcomes

### **Project Abstract**

**Research Objectives:** There is growing concern among Canadians about access to, and the quality of, their publicly-funded health care system. The Prime Minister and Premiers established the Health Council of Canada (HCC) in 2003, in part to monitor and account to citizens about progress. In 2004, HCC was asked to report to Canadians on health and health outcomes. The purpose of this project is to report on experiences that Canadians, particularly those with chronic health conditions, have with primary health care and chronic illness care and to identify factors associated with immediate outcomes.

**Study Design:** HCC developed a population-based bilingual telephone survey in partnership with Statistics Canada to measure information in priority areas of public policy. The survey was based on analytic frameworks designed to support performance measurement and accountability of the primary health care sector and chronic illness care. These frameworks followed an approach established by the Treasury Board of Canada. Construct and face validity was assured by relying on work to identify features of care that have been identified as important to policymakers, managers and providers, as well as Canadians. Publicly available items and scales were selected from validated instruments to measure access, quality and outcomes of primary health care and/or chronic illness care. Cognitive and pilot testing commenced in October 2006.

This survey was implemented nationwide in early 2007 by Statistics Canada. The sample frame included those who had completed the Canadian Community Health Survey (CCHS) in 2005, and participants were asked for permission to link their results to previous responses. Linkage rates are expected to be high, based on historic precedence, and are intended to support: (a) cross-sectional analyses in 2007 involving the effect of immutable characteristics measured in 2005 (e.g. ethnicity, immigration status); and (b) repeated measures designs (e.g. has regular medical doctor/not in 2005 and 2007). The sample was drawn to be representative of the age, gender and co-morbidity structure of the Canadian population over 12 years of age ( $n \approx 2,600$ ).

All participants were asked to report on health status (self-rated, select chronic conditions), access (routine/ongoing care, specialists), utilization (type of primary health care services), organization of primary health care (affiliation with provider/place, level of collaboration within and between sectors), prescription use (volume, wrong medication/dose) and immediate outcomes (adverse side effects, necessary use of ER, knowledge of health care, activation). All participants were asked about their overall confidence in the health care system.

Participants who had at least one visit with a “family physician, pediatrician or general practitioner” were asked more specifically about their experiences with primary health care (responsiveness; communication; continuity; overall quality). Participants with chronic health conditions completed the Patient Assessment of Chronic Illness Care and parts of the Patient Activation Measure. Longitudinal experiences were assessed through self-report of reflections of the preceding six month or one year period.

**Principle Findings:** Descriptive and multivariate analyses are currently being conducted.

**Conclusions:** This work was funded by HCC and will be used to monitor and report to Canadians on the progress of primary health care renewal. Despite its short existence, 40 percent of Canadians now report

being aware of the work of HCC and 66 percent are very interested in receiving its reports. HCC will also be creating analytic supplements targeted toward health care policymakers, administrators and practitioners, since these audiences desire and act on information about citizens' experiences with health care.