

IHE Summary Report

The State of the Art in Costing Methods

April 2015

INSTITUTE OF HEALTH ECONOMICS

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IHE Summary Report

The State of the Art in Costing Methods

(This report is based on information presented at the “On the State of the Art in Costing Methods Workshop”: January 21-22, 2015 - Matrix Hotel, Edmonton, Alberta.)

This report was supported by a financial contribution from Alberta Health through the Health Funding and Economics Capacity Grant. The views expressed herein do not necessarily represent the official policy of Alberta Health.

**If you have any questions related to this report, please contact Jasmine Brown, Senior Policy Associate, Institute of Health Economics, at JBrown@ihe.ca.*

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Please note that the views expressed herein do not necessarily represent the official policy of Alberta Health.

Web Address

This publication is available for free download from the IHE website at <http://www.ihe.ca>.

Please note: This document represents a summary reflection of key points raised by participants, and does not necessarily represent the consensus views of the participants or of the organizations involved.

Executive Summary

Cost is a critical element in almost all public or private decisions regarding health care and human services. While cost as “opportunity cost” is straightforward on a conceptual level, making the concept operational, quantifying costs and integrating such information into decision analysis is a continuing challenge. An IHE conference, “On the State of the Art in Costing Methods: Workshop” was held January 21-22, 2015.

The workshop sought to:

- Inform/educate public policy healthcare leaders by surveying the current state of the art in various components of healthcare costing, including hospital inpatient and outpatient, long term care, physician services, pharmaceuticals, vaccines, public health, mental health, social services, and household services.
- Providing an overview of the uses of healthcare costing information, including economic surveillance, economic evaluations, and reimbursement.
- Showcasing several international speakers from countries where costing has been developed to obtain perspectives from their countries.

At this meeting, fourteen invited speakers from across Canada as well as several other countries, and approximately 60 workshop attendees, exchanged information and views on these matters. This paper represents a summary of the state of the art as it emerged from those discussions.

Conference presentations were grouped into three sections. First, an expert from each of the major health care sectors in Canada discussed how costs were estimated for those activities. Sectors included acute care, nursing home care, physicians’ services, pharmaceuticals, vaccines, social services and mental health. Second, the use of cost information in three Canadian applications was described. These included estimating the burden of illness, quality based procedures and economic evaluations. Third, speakers from Finland, the Netherlands, United Kingdom and the United States described costing applications in those jurisdictions. Finally, there was extended discussion by workshop participants about priorities for a research agenda and future development of the discipline of health care costing. For more information on the Workshop and/or the speakers, please see the “On the State of the Art in Costing Methods Workshop” Program located in *Appendix A*.

In what follows we first summarize briefly, and at a high level, the content of each presentation. (For readers seeking greater detail, the presentations in full are available at www.ihe.ca).

The paper then considers a number of common themes or issues which were touched on in many of the presentations and workshop discussion of them.

Some key themes/issues raised were the following:

1. The who, why, and for whom of costing:

- Some cost analysis is done by organizations which produce estimates on a national level to be used by many different users (CIHI, PSSRU, etc.).
 - Costing can be done in support of a specific research project or economic evaluation (early intervention programs, international rankings, etc.).
 - Government funding or regulatory programs often undertake, or contract for, costing in support of their work (clinical decision making, development of best practices, etc.).
 - Costing is undertaken by industry in support of business decision making or compliance with government regulation (analysis or vaccine costs).
2. The use of the terms, such as “cost,” “spending,” and “price,” can be a source of confusion and should be used with discretion.
 3. Different methodologies for costing grow out of different analytical traditions, and in some cases can lead to a lack of consensus among practitioners in their use. The top-down (financial data) versus bottom-up approach (clinical data, patient data, etc.), or the human capital approach versus the friction cost approach were cited as examples. It was discussed that top-down/bottom-up approaches can either serve as alternatives or complement each other in their use.

The final section is a summary of workshop participants’ suggestions for a research agenda to advance the state of the art on health care costing.

Key recommendations included:

- The need for standardization in costing unit data.
- The broadening of the focus of costing on a more system wide approach, to break down silos in costing.
- Focus needs to be placed on user needs and overall “user friendliness” to ensure costing data and research is both useful and applicable.
- We must seek consensus on specific methodological issues and derive best practice guidelines.
- An assessment of the costs and benefits of various costing methods should be conducted.

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Summary of Presentations

Canadian Health Care Sectors

1. Glussich, Anyk. “Acute Care-- Canadian Institute for Health Information,” Canadian Institute for Health Information (CIHI):

The key to the method for generating costs for inpatient acute care is the creation of 529 case mix groups (CMGs) which are groups of patients with similar clinical and resource utilization characteristics. The Resource Intensity Weight (RIW) shows the relative costs of a case mix group to the overall average and adjusts this for five factors accounting for variation in resource use within a case mix group. Methodology used by CIHI to develop cost estimates for hospital stays was presented. Using data from multiple sources, including patient level data from a select group of hospitals in Ontario, Alberta and British Columbia as well as aggregate financial and statistical for health service organizations Canada wide (except Nunavut), CIHI produces a variety of cost estimates. One key measure is the “Cost of a Standard Hospital Stay” which measures the relative cost-efficiency of a hospital’s ability to provide acute inpatient care. Users can find cost by functional center within a hospital, by type of cost, by subgroup of patient, by consecutive day of stay.

CIHI cost estimates are used for a wide variety of purposes including informing policy making and management decisions. CIHI also generates national and regional costs for hospital outpatient care, using case mix groups called the Canadian Ambulatory Classification System (CACS).

2. Risling, Eleanor. “Long Term Care Costing and Funding—Resident Assessment Instrument (RAI) Methodology,” Alberta Health Services (AHS):

The RAI measures the clinical characteristics of residents in long term care facilities. The organization responsible for the instrument (interRAI) is a collaborative network of researchers in 32 countries and thus the RAI represents a uniform language across countries. There are twelve related assessment instruments including one for facility based long term care of frail elderly residents but also a variety of other care settings or types of client. For costing purposes, residents are assigned based on their RAI score to one of several alternative Resource Use Groups (RUGs), which are residents with similar care needs and resource requirements. Case weights are then associated with Resource use Groups based on time-motion study of the actual process of care. A case mix index can then be developed for a facility which indicates the estimated cost of care of its population relative to the overall average. The case mix index plays a major role in allocation of funding under the Alberta funding system for long term care.

3. Friesen, Dan. “Physician Services – Allocation of Alberta Physician Expenditures,” Alberta Medical Association (AMA):

In Alberta about 90% of physician expenditure is Fee-for-Service payments with the balance under Alternative Relationship Plans (ARPs). Primary care capitation is under development and AHS contract physicians are paid in a variety of ways. Total payment to physicians is

negotiated and the allocation of the negotiated fee increase is determined jointly by Alberta Health and the Alberta Medical Association (AMA). Macro-allocation refers to the division of the amount among the 31 sections of the AMA, while micro-allocation refers to the division of a sections portion among fees for specific physician services. The major priorities for macro allocation are to fund targeted areas based on health system needs and to reflect changes in overhead costs, which represent about 38% of physician billings. The micro allocation of fees typically relies on an algorithm intended to reflect the complexity, intensity and time associated with specific types of physician work.

4. Evans, Michele. “Pharmaceuticals -- Alberta’s Drug Programs,” Alberta Health (AH):

Alberta has over 18 programs providing community based drug and supplementary health benefits. They incorporate different approaches to cost sharing, ranging from no cost sharing under some programs, to co-pay only in other cases, to premium plus co-pay in a third set of programs. The federal Patented Medicines Prices Review Board establishes non-excessive prices for patented products. The Pan Canadian Pharmaceutical Alliance engages in joint price negotiation for brand name drugs and has achieved price reductions on selected generics.

There has been significant growth in the number of pharmacists with additional prescribing authority and with the authority to inject. Rules, rates and procedures for product-focused services are set under the Alberta Blue Cross Pharmaceutical Services Agreement, while for patient focused services they are set under a Ministerial Order. Drug product prices are set by manufacturers within federal and provincial rules.

5. Chit, Ayman. “Vaccines—Cost of vaccines to the Canadian government,” Sanofi Pasteur:

Government purchases of vaccines are typically through a tender system and bulk purchase, where the government is the only buyer of the product. In cases where there are vaccines that are interchangeable, the economic model of monopsony (one buyer facing several sellers) characterizes this market. The effect is for there to be a downward pressure on price, which increases over time as more sellers enter the market. It is important that researchers conducting economic evaluations of vaccines be aware of this effect and take it into account in the analysis.

6. Latimer, Eric. “Social Services – Housing First demonstration project for homeless people with mental illness,” McGill University:

As part of an economic analysis associated with Random Controlled Trial of a Housing First strategy vs regular care, it was necessary to determine unit cost for social services such as group homes, emergency shelters, street workers etc. This enabled researchers to determine the extent to which money invested in Housing First might be offset by savings in other resource use. Unit costs were determined in some instances by a top-down approach, i.e. determining the total spending by the service provider and dividing it by the number of units of service. Where this was not possible, the approach was bottom-up, i.e. valuing each of the inputs used in providing the service. Specific challenges included valuation of the opportunity cost of land

and buildings and isolating the portion of costs attributable to a specific activity in a large organization.

7. Dewa, Carolyn. “Mental health – which cost data are important?” the Centre for Additions and Mental Health (CAMH) and University of Toronto:

Societal perspective on costs includes the government, patient and caregiver perspectives. Including only government costs in an analysis gives an incomplete picture, particularly in mental health where much care is not hospital or physician based. This is of particular importance since deinstitutionalization, which occurred in the mid-1990s in Canada. For example, in a case study of early intervention programs, caregiver contributions were particularly large in terms of costs. Available sources often do not contain relevant data such as community service use, “non-health” items (e.g. health care at a shelter) or new programs. Therefore primary collection of cost data should be built into research budgets and advocated for.

Uses of Cost Data in Canada

8. Eng, Ken. “Economic burden of Illness in Canada (EBIC),” Public Health Agency of Canada - Agence de la santé publique du Canada (PHAC):

EBIC provides economic surveillance of the cost of illness of disease groups in Canada. The Cost of illness (COI) methodologies include estimation of direct costs such as hospital care, physician services, and pharmaceuticals, indirect costs which are value of lost production due to morbidity and premature mortality and intangibles which represent the value of diminished health status. Alternative approaches to estimation of indirect costs include the human capital approach and the friction cost method. Approaches to estimation of intangibles include willingness to pay, quality adjusted or disability adjusted life years, and value of a statistical life. The Economic Burden of Illness report published in 2014 included cost estimates for 165 diagnostic sub-categories. The System of Health Accounts from the OECD provides a framework for standard reporting of expenditures on direct costs and EBIC follows this methodology. Cost of illness expansion of the System of Health Accounts framework supports using COI estimates in international comparisons.

9. Stewart, Michael. “Quality based procedures – A major component of Health System Funding Reform in Ontario,” Ontario Ministry of Health and Long Term Care (MOHLTC):

Ontario Health System Funding Reform uses activity based funding for specific groups for hospital care. For these groups, within a hospital, actual costs are “carved out” and replaced with average costs for the same group. Hospital payment is on a per case basis with payment for a case mix group set in advance of the funding period. Payment at average cost provides incentive for high cost hospitals to reduce cost; payment at other than average cost can be used to incent specific hospital behavior. Quality based procedures, one component of health system funding reform, is a program intended to improve outcomes by reducing practice variation and using approaches recognized to constitute high quality care. Specific groupings of health services or diseases are identified and clinical expert advisory groups develop best practices for providing services. Pricing is based on utilization implied by the best practices.

10. Lee, Karen. “Economic Evaluation—CADTH guidance document for the Costing process,” Canadian Agency for Drugs and Technologies in Health (CADTH):

The Canadian Agency for Drugs & Technology in Health (CADTH) guidance document for establishing costs which is used in economic evaluations was originally published in 1996 and is currently under revision with a 2nd edition scheduled for completion in early 2015. A literature search of Canadian economic evaluations published between 2008 and March 2014 showed lack of consistency in costing methods used sources and reporting. Challenges to addressing these issues include lack of a common language/terminology, a lack of public information in some cases and variations among jurisdictions. Major changes or additions in the 2nd edition occur in areas such as pharmaceuticals, hospital services, diagnostic & investigational services, no-physician professional services and community based services.

International Costing Examples

11. Häkkinen, Unto. “Costing in multi-country evaluation studies – EuroHOPE,” THL, Helsinki:

Substantial differences among countries in health care spending cannot be understood using macro data. EuroHOPE measures costs and outcomes for specific diseases during the entire cycle of care for seven European countries. Using AMI as an example, countries were ranked based on cost through three approaches: costing the main components of care from discharge registries and prescription data bases using Swedish cost weights, having each country use its own best cost estimates and using a common Nordic DRG grouper. Risk adjustment was performed using age gender and comorbidities as variables. Ranking of countries depended on the cost indicator used but ranking by crude cost gave pretty much the same ranking as when cost was adjusted for disease severity. Inclusion of hospital or region level variables changed the ranking of countries somewhat.

12. Curtis, Lesley. “Unit costs of health and social services – PSSRU in England,” Personal and Social Service Research Unit, University of Surrey at Kent, England:

PSSRU has been commissioned since 1992 to provide nationally applicable unit costs, with weighting where possible for London. Multiple sources of data are used with primary research where public information is not available. A bottom-up approach is used to generate costs. Costing is done for 130 different services. Included are facility and hospital costs, client level costs and costs for specific care packages. Costs of health care professionals and teams are also provided, including salaries, employer contribution to superannuation and national insurance, overhead and capital. Costs are reported per working hour and where possible per patient-related hour.

13. Tan, Siok Swan. “Dutch Manual on Costing in Economic Evaluations,” Erasmus University, Rotterdam, the Netherlands:

The Dutch Manual on costing facilitates the costing parts of an economic evaluation. The use of the manual is mostly in university hospitals and provides reference prices for a large number of services as well as some specific recommendations on analytical techniques. Use of manual

information for tariffs is not recommended since increasingly prices are negotiated rather than fixed. The DBC case mix system covers over 4000 health care services by specialists and hospitals from initial diagnosis to completion of treatment.

14. Rueger, Jennifer Prah. “Micro-costing – examples, systematic review and checklist development,” University of Pennsylvania:

Micro-costing is the detailed costing of every input in the treatment of a specific patient. Literature review demonstrates increasing use of this technique in published studies over the past 15 years. Two examples of use of micro-costing in RCTs developed cost estimates from both the service provider and societal perspective. A checklist underdevelopment for micro-costing will use multiple approaches to identify items for inclusion and the final list of items will be reviewed by an expert panel.

Discussion Summary

The presentations summarized above cover a whole range of different services. There are a number of other dimensions along which they have similarities and differences however, and a review of them highlights the complexity and range of the costing discipline.

Who is doing the costing? For what purpose? Who is using the results?

The workshop illustrated a number of different settings in which costing is carried out:

- 1) Some cost analysis is done by organizations which produce estimates on a national level to be used by many different users. Examples here include CIHI, PSSRU or the Dutch Manual on Costing. Typically these are government or nonprofit organizations with a variety of stakeholders. In the case of CIHI, it was noted that some stakeholders are both providers of data and users of cost estimates. For example, Alberta hospitals provide patient-level data for CIHI use and Alberta Health uses CIHI methodology and data in their Interactive Health Data Application available to the public on their website. Where an organization is producing cost estimates to be used for many different purposes, some of which may not even be known at the time analysis is done, a concern is to use methodology and presentation which is versatile and adaptable to user needs. For example, one of the stated aims of PSSRU is “to produce bottom-up costs where possible which the user can substitute to suit their own needs.” Organizations conducting this type of costing often rely on available raw data, although sometimes primary data collection is undertaken.
- 2) Costing can be done in support of a specific research project or economic evaluation. The work reported in the workshop on social services (the “Housing First Demonstration Project”), mental health (early intervention programs), micro-costing (based on two RCTs) and euroHOPE (international rankings) are examples of this. Methods can be chosen very specifically to meet the requirements of the project and primary data collection is often part of the research approach. There is, at least initially, only one user—the research team or funder of the project. (Of course, later results of the project may be published in scientific literature and be available to a much wider audience).
- 3) Government funding or regulatory programs often undertake, or contract for, costing in support of their work. In the workshop, the presentations on long term care, Alberta’s drug programs and Ontario’s Quality Based Procedures are examples of this. Costs are typically only a part of the information needed for the administration of these programs and often components of the costing methodology have important applications not specifically related to costing. For example, the Resident Assessment Instrument (RAI) which plays a role in the funding model for long term care also has important application as an aid to clinical decision making. Similarly, in Ontario the development of best practices with expert panels and understanding resource utilization associated with best practice would have important benefits even if were not associated with a funding or costing approach.

4) Finally, costing is undertaken by industry in support of business decision making or compliance with government regulation. In the workshop, the analysis of vaccine costs reported was undertaken by a vaccine manufacturer. The guidance document for costing produced by CADTH is intended in part to be used by industry for cost analysis to meet regulatory requirements.

Cost, spending and price.

These three terms appear frequently in costing discussion and, at times, can be a source of confusion. Occasionally they can be used almost interchangeably with no danger of misunderstanding. For example, if a government funding approach pays a facility an amount equal to the cost of a particular type of patient, whether the amount of that payment is considered the cost incurred by the facility, the spending by the government or the price for that specific service is of little importance. However, in other cases it can make a difference. For example, in the Ontario Quality Based Procedures presentation it was emphasized that “cost is not price” and in the Dutch manual it was clear that use of the information for tariffs was not recommended since increasingly prices were negotiated rather than fixed. The “cost to the government” for vaccines, determined through a tender process, bears no fixed relationship to the cost of producing vaccines since the price is determined through the workings of a monopsony market.

The different methodologies for costing grow out of somewhat different analytical traditions. The bottom-up approach, and particularly micro-costing, track well with the economists’ “cost of production” concept where a production process has various inputs and cost constitutes the sum of each input times the price paid for it. The “long run marginal opportunity cost approach” cited by PSSRU is the workshop presentation perhaps most explicitly consistent with this model. The cost of production approach is supplemented in some analysis with attempts to estimate external costs. The top-down approach on the other hand is more representative of cost accounting or managerial accounting where the focus is on spending budget decisions based on financial data and is therefore particularly well suited to inform funding models.

Analytic perspective.

The analytic perspective of a cost study will determine what specific cost elements should be included and for what purposes the results are valid. Various perspectives are possible and appropriate. Often the perspective is implicit or obvious but it is generally thought desirable that a report of a cost study make explicit the perspective being used. It is surprising that the systematic review of published micro-costing studies found that about one third of them failed to do this. Workshop presentations covered a wide range of possible perspectives. Many, such as those on acute care and the national databases, were primarily from the perspective of provider costs or cost to the government. Others cast the net much wider and included a variety of other costs to capture a societal perspective. Examples include the presentations on micro-costing, social service, mental health and economic burden of illness.

Specific methodological choices.

Top-down and bottom-up methods were both used throughout the workshop presentations. Sometimes they are seen as alternatives, with choice to be made by the analyst. More often, perhaps, factors of data availability such as lack of financial data to support top-down estimation or of expense such as the costliness of collecting the detailed information needed for bottom-up estimation dictate the selection. It was evident in some cases that the two were not alternatives so much as they were complements. For example, CIHI uses clinical data and patient-level cost data from about 60 hospitals to derive Resource Intensity Weights (a bottom-up approach) and then uses this with financial data from about 600 hospitals (a top-down approach) to estimate the average cost of a hospital stay. Another example of where the two methods are complementary is in long term care costing and funding. Time-motion study of caregivers is used to develop cost weights for Resource Utilization Groups (a bottom-up approach), which then are used in a top-down allocation of the provincial budget for long term care among facilities using the case mix index.

Another methodological choice which received some discussion at the workshop was the choice between the human capital approach and the friction cost approach for valuing the costs or premature mortality. Each seems to have a theoretical basis and has been employed in some studies, and it is not clear that there is a consensus among practitioners which is best in any given set of circumstances.

Recommendations: Advancing the State of the Art – A Costing Agenda

The workshop finished with wide-ranging discussion among the costing experts and users in attendance about what should be priorities as the discipline moves forward. The following are the major areas addressed by numerous comments.

A) Standardization. Many participants suggested a need for more standardization. It was thought that this would enable more meaningful comparisons between provinces and facilitate pooled research efforts. Consistency of data collection and definition of data elements is one aspect of this as well as comparability of costing standards among jurisdictions. Linking data sets across ministries and linking data on physicians use and drugs to hospital costs is needed. Sharing of data between government and industry would be helpful. Documentation of methodology to allow reproducible results is needed. Language is important and differences in the way analysts interpret certain terminology can be a barrier. A common language is needed.

B) System wide costing focus. A broadening of the costing efforts beyond specific types of facility, individual government ministries, or individual silos to a system level is needed. Health care in non-facility settings such as home care with informal caregivers must be included. Downstream cost following facility-based care should be estimated. Data linkages to “non-health” data, e.g. justice system, would facilitate this. Often decisions must be made about moving funds from one part of the system to another or about subsystem investments and system wide costing methodology would better inform this as well as address concerns about system wide sustainability.

C) Focus on user needs and “user-friendliness.” Costing research should be useful and applied. Results must be made available to users and adequate guidance in their use for different types of decisions provided. Efforts should be made to identify specific users and determine their needs, e.g. controlling expenditures on highest cost patients or evaluating new or alternative approaches. Quality should be an enhanced focus of costing to aid users in quality monitoring and improvement.

D) Seek consensus on specific methodological issues. Where different views exist among practitioners, e.g. on human capital method vs friction cost method, or on the relative merits and applicability of bottom-up, top-down, and micro-costing approaches, efforts should be made to come to a consensus and derive best practice guidelines.

E) Assess the costs and benefits of costing. Some costing methods are more expensive than others. Primary data collection and micro-costing especially require large amount of resources to conduct. Is the increased granularity and precision of the estimates produced by these methods worth the cost of conducting them? Economic evaluation of costing approaches could provide information to answer this question and provide guidance as to where the extra cost of such methods provides benefits worth the cost. Such analysis must be forward looking, e.g. recognize that advances in technology may reduce the costs of extensive primary data development.

F) Other suggestions made by some participants include:

- Development of a reference cost list for Canada. Publish a Canadian handbook for costing similar to the Dutch or U.K. efforts.
- Incorporate costing into Electronic Medical Records.
- Develop better ways to look at vaccine pricing.
- Address costs of migrant populations.
- Develop costing model identifying impact of built environment/urban design, e.g. “walkability”, on population health.
- Increase cooperation and transparency from the federal government.
- Solicit more Pan-Canadian support for top research priorities.
- Establish industry-public health partnerships for accurate cost forecasting in pharmaceuticals.

Conclusions:

The need to use or construct cost information has grown exponentially. In Alberta, and in other provinces, there is currently no single source where analysts can go to obtain cost data for patients who are managed by more than one administrative unit. Indeed, it is often very time consuming in the current system to even find out who collects this data, and what information the data collectors can provide. As the growth of budgets at all levels of government slows and the aging demographic continues to escalate overall costs, momentum for the development of quality costing data and effective costing data utilization is mounting in all healthcare sectors.

The workshop revealed that although some costing work has been done, we have a considerable way to go before Canada can be assured its resources are being utilized at their most efficient and cost effective rate. Work needs to be done in many areas including with regard to the standardization of data, consensus on definitions, quality assurance mechanisms, best practice guidelines, etc.. This workshop and consequent summary report was created in order to stimulate discourse and impetus around the development of quality costing data. We believe that we have successfully achieved this goal. Our hope is that further initiatives will stem from the conclusions and recommendations of this workshop and report, which will contribute to the use and construction of quality costing information.

On the State of the Art in Costing Methods: Workshop

PROGRAM

January 21-22, 2015

Matrix Hotel

Edmonton, Alberta, Canada

Workshop Program: Wednesday, January 21, 2015

| TIME | TOPIC | PRESENTER |
|----------|---|---|
| 8:30 am | Introduction to the workshop | |
| 8:45 am | Acute care: Case mix, RIW, CPWC | Mr. Anyk Glussich, CIHI |
| 9:15 am | MIS patient costing | Mr. Anyk Glussich, CIHI |
| 9:45 am | Nursing homes and RAI | Ms. Eleanor Risling, AHS |
| 10:15 am | BREAK | |
| 10:30 am | Physician services – FFS/ARP | Mr. Dan Friesen, AMA |
| 11:00 am | Pharmaceuticals | Ms. Michele Evans, Alberta Health |
| 11:30 am | Public Health – vaccines | Dr. Ayman Chit, Sanofi Pasteur |
| 12:00 pm | LUNCH | |
| 1:00 pm | Social Services | Dr. Eric Latimer, McGill University |
| 1:30 pm | Mental health | Dr. Carolyn Dewa, University of Toronto |
| 2:00 pm | BREAK | |
| 2:30 pm | Economic burden of illness in Canada 2005 - 2008 | Mr. Ken Eng, PHAC |
| 3:00 pm | Quality based procedures | Mr. Michael Stewart, MOHLTC |
| 3:30 pm | Costing Guidance for the Canadian Healthcare Setting: 2nd Edition | Ms. Karen Lee, CADTH |
| 4:30 pm | RECEPTION – Amber B Room | |

Thursday, January 22, 2015

| TIME | TOPIC | PRESENTER |
|-------------|---|--|
| 8:30 am | Costing in Multi – country evaluation Studies: EUROHOPE | Dr. Unto Häkkinen, Finland Public Health |
| 9:00 am | Unit Costs of Health and Social Care 2010 | Ms. Lesley Curtis, PSSRU, UK |
| 9:30 am | Dutch Manual for Costing in Economic Evaluations | Dr. Siok Swan Tan, Centre for Health and Social Economics (at THL) |
| 10:00 am | Micro-costing check list | Dr. Jennifer Prah Ruger, University of Pennsylvania |
| 10:30 am | BREAK | |
| 10:45 am | Next steps: Discussion | |
| 11:45 am | CLOSING REMARKS | |

This workshop was supported by a financial contribution from Alberta Health (Province of Alberta). The views expressed at this event do not necessarily represent the policy of Alberta Health

Biographies:

Mr. Anyk Glussich:

Anyk Glussich is the Program Lead for the Canadian Patient Cost Database at the Canadian Institute for Health Information (CIHI), where he is responsible for the collection, use and promotion of Canadian patient cost data. Previously, Anyk was the Program Lead for the operations functions of the Canadian MIS Database (CMDB) at CIHI, working on projects that evaluate the data quality of jurisdictional MIS data submissions. As a Senior Analyst with the CMDB, he participated in projects that use MIS data for external reporting.

Prior to joining CIHI, Anyk spent two years at University Health Network in Toronto, where he was an analyst in the Clinical Informatics department. Anyk holds a Bachelor of Science in Mathematics with Computer Science from the University of Western Ontario and a Master of Business Administration from McMaster University.

Dr. Ayman Chit:

Ayman Chit is the Senior Director of Health Economics, Modeling and Market Access in North America at Sanofi Pasteur. Prior to this role, Ayman was the Canadian Medical and Scientific Affairs Director for the influenza vaccines portfolio at the company. Ayman has also held multiple other roles with in industry, most notably heading up the Health Economics and Outcomes Research group responsible for Oncology and Vaccines at GlaxoSmithKline Canada. He was also previously a medical and scientific affairs advisor and a clinical development manager also focusing on vaccines and oncology products. Additionally, Ayman has an active academic affiliation teaching a course on the pharmaceutical industry at the University of Toronto (UofT) school of Pharmacy.

Ayman holds an Honors Bachelor Degree in Chemistry, a Master in Biotechnology and a PhD in Pharmacy all from UofT. His doctoral thesis was focused on the economics of vaccine and drug development.

Dr. Carolyn Dewa:

Carolyn S. Dewa, MPH, PhD is an Full Professor of Psychiatry at University of Toronto and the Head of the Centre for Addiction and Mental Health's (CAMH) Centre for Research on Employment and Workplace Health. She received her doctoral degree in health economics from Johns Hopkins University School of Hygiene and Public Health and her MPH in health services administration from San Diego State University School of Public Health. She did a fellowship at the Harvard Medical School Department of Health Policy and Management.

Since joining CAMH in 1998, Dr. Dewa has become a national leader in workplace mental health research, particularly in disability related to mental illness among workers, the effects of mental illness

on productivity and interventions to improve disability outcomes. Her awards include a Canadian Institutes of Health Research /Public Health Agency of Canada Applied Public Health Chair for her research in mental illness in the working population. She has also received a Career Scientist Award from the Ontario Ministry of Health and Long-Term Care.

Mr. Dan Friesen:

Dan Friesen is the senior health economist at the Alberta Medical Association. His role focuses on enhancing the payment system to achieve equity amongst physicians and providing general economic advice. Prior to joining the AMA, Dan spent several years with the Government of Alberta analyzing health expenditures and designing and evaluating policy options. He started his career in the private sector, designing and simulating macroeconomic models, providing economic outlooks, and performing business case analysis.

Mr. Don Husereau: (Workshop MC)

Don Husereau is a Senior Associate with the Institute of Health Economics. He is also an Adjunct Professor of Medicine at The University of Ottawa and a Senior Scientist at the University for Health Sciences, Medical Informatics and Technology in Hall in Tirol, Austria. Between 2001 and 2011, he worked for the Canadian Agency for Drugs and Technologies in Health (CADTH), where he was a Director and Senior Advisor. Don's current research focuses on appropriate and innovative approaches to the use of evidence and economics to inform health policy based on sound principles of social justice, epistemology, and judgment and decision-making. This includes work on the pricing and mechanisms to evaluate and manage innovation. He is currently Chair of an International Task Force that has developed consolidated health economic evaluation reporting standards (CHEERS) that is now endorsed by leading biomedical and health policy journals. Don formerly served on the Board of Directors for the International Society of Pharmacoeconomics and Outcomes Research (ISPOR) and is currently an Editorial Advisor for their biomedical journal, Value in Health. Don received both his BSc in Pharmacy (1993) and his MSc (2000) from the University of Alberta's faculty of Pharmacy and Pharmaceutical Sciences.

Ms. Eleanor Risling:

Eleanor Risling is the Director, Integrated RAI Initiatives with the Quality, Information Management, Projects and Evaluations (QIPE) of Community, Seniors, Addiction and Mental Health, Alberta Health Services. In this role, Eleanor has oversight for use of the RAI 2.0 assessment instrument and quality initiatives resulting from the outputs of RAI 2.0 in the facility living sector within Alberta. Eleanor is a

graduate of the University of Alberta's Faculty of Nursing and has been practicing in the area of LTC in a variety of capacities for the past 20 years. Prior to assuming her current role, Eleanor was the Project

Manager for the Continuing Care Systems Project (RAI 2.0 implementation) and the PathWays Automated Waitlist Management System in the Edmonton Zone.

Dr. Eric Latimer:

Dr Latimer is Research Scientist at the Douglas Mental Health University Institute and Professor in the Department of Psychiatry at McGill University. He obtained a PhD in economics from Carnegie Mellon University in 1989 and, before joining the Douglas Institute and McGill University, was Assistant Professor of Health Economics at the Harvard School of Public Health from 1989 to 1996. His research interests focus on community-based supports for people with severe mental illness, including assertive community treatment, supported employment, Housing First and, more recently, the strengths model of case management. He has carried out economic evaluations and reviews of the economic evidence for various interventions for people with mental illness, notably supported employment. Recently, he was lead investigator for the Montreal site, and lead economist nationally, of the \$110 million Chez Soi / At Home research and demonstration study on homelessness and mental illness. This study tested the Housing First approach using nine concurrent trials in five Canadian cities. Currently he is principal investigator of a CIHR-funded, \$1.2 million study evaluating the strengths model of case management in seven sites across Ontario, Québec and Newfoundland. He has served as consultant to the Québec government as well as research teams in Europe and North America. He is an associate editor of the Canadian journal, Healthcare Policy. He teaches economic evaluation in the Department of Epidemiology, Biostatistics and Occupational Health at McGill University.

Dr. Jennifer Prah Ruger:

Jennifer Prah Ruger, PhD is an internationally recognized health economist. Dr. Ruger has conducted all four types of economic evaluations, cost-minimization, cost-effectiveness, cost-utility and cost-benefit analyses. Dr. Ruger has completed the first micro-costing studies of their kind in multiple areas of substance abuse prevention and treatment services and health disparities research. Dr. Ruger has led a research team that has pioneered a micro-costing research paradigm for health and medicine, particularly substance abuse prevention and treatment programs. Dr. Ruger and colleagues have conducted costing research for smoking cessation and relapse prevention among low-income pregnant women, for motivational enhancement therapy coupled with cognitive behavioral therapy for pregnant substance abusers, for HIV prevention and substance abuse treatment for out-of-treatment drug-using women, for heroin addiction in Malaysia, and for emergency department services by frequent users. Dr. Ruger and colleagues have also conducted scholarly reviews of micro-costing. Dr. Ruger is currently leading an international collaboration with leading economic evaluation researchers and the medical journal, the British Medical Journal (BMJ), to develop a checklist for the conduct, reporting and appraisal of micro-costing studies in health care. Dr. Ruger and colleagues have also conducted cost-effectiveness studies of peer-delivered interventions for cocaine and alcohol abuse among women; cost-utility of motivational interviewing for smoking cessation and relapse prevention among low-income pregnant women; cost-effectiveness of buprenorphine and naltrexone treatments for heroin dependence in Malaysia; cost-effectiveness of interventions to prevent HIV and STDs among women; and analysis of optimal allocation of resources in the emergency department. Dr. Ruger and colleagues have also

conducted scholarly reviews of economic evaluations of substance abuse prevention and treatment research.

Ms. Karen Lee:

Karen Lee is the Director of Health Economics at the Canadian Agency for Drugs & Technologies in Health (CADTH) and an adjunct professor at the University of Ottawa's School of Epidemiology, Public Health & Preventative Medicine. She has worked with CADTH for over 10 years. Her work has focused on the evaluation of pharmaceuticals through the development and assessment of epidemiologic models.

Mr. Ken Eng:

Ken Eng is a senior health economist with the Public Health Agency of Canada.

Ken has a MA in economics and worked extensively in the areas of health status valuations, economic evaluations and economic burden studies. He has worked at the Institute of Health Economics as a research associate, concentrating on the valuation of health status. He published articles on health related quality of life measures that compared variations in population health and the determinants of health. He has also worked on health technology assessment to inform health policy. Currently at the Public Health Agency of Canada, he provides methodological and contextual advice on a variety of health economic policy issues and contributes to the development of the Economic Burden of Illness study which estimates the costs of illnesses of major conditions.

Ms. Lesley Curtis:

Lesley Curtis has worked as a research officer in Personal Social Services Research Unit at the University of Kent since 2000. Her role during this time has been as principal author of the Unit Costs of Health and Social Care volumes, an annual publication which brings together information from a variety of sources to estimate the most up-to-date nationally-applicable unit costs for numerous health and social care services in England. She has also managed the databases, the collation and the dissemination of the Unit Costs volumes. Since 2005, she has had five journal articles published relating to the working lives of professionals and how they impact on the cost of training.

During her time at the University of Kent, Lesley has gained a Masters degree in the Methods of Social Research.

Mr. Michael Stewart:

Michael Stewart is the Director of Quality-Based Procedures Branch at the Ministry of Health and Long-Term Care. As part of Ontario's Health System Funding Reform (HSFR) strategy, Michael provides strategic direction on the province's shift towards a case mix reimbursement model that better reflects the types of patients treated, quality of services provided and aligns funding with quality.

Michael is an integral player in accelerating the Ministry's transformation agenda through leading the identification, development and implementation of Quality-Based Procedures from both a clinical and technical lens. His work entails providing oversight over decision support and knowledge translation to strengthen hospital readiness, quality audits and use of information.

A trained nurse by background, renowned case costing expert across the province and a Director of Decision Support at St. Michael's Hospital for many years, Michael utilizes his clinical expertise and knowledge of decision support to ensure a successful and meaningful implementation of the HSRF policies and strategies.

Michael has considerable experience with MIS applications, case costing, the various funding methodologies and related decision support systems in Ontario hospitals. He has presented numerous papers, chaired several conferences and has also written and facilitated workshops on Decision Support/ Resource Utilization Management and health records coding.

Ms. Michele Evans:

Michele is a pharmacist who worked for a number of years in the private sector – both in small community pharmacies and with large international pharmaceutical companies. She started her career with the Alberta government with the Ministry of Health and has also worked with the economic development groups within the Government of Alberta, supporting the Alberta Competitiveness Council and serving as the Director of the Red Tape Reduction Task Force. In 2013, Michele returned to the Ministry of Health where she is now the Executive Director, Pharmaceuticals and Supplementary Health Benefits responsible to provide leadership and direction to the team that oversees approximately \$1 billion in government spending on community-based health benefit programs for Albertans.

Michele is a passionate about the Alberta public service and believes strongly in working collaboratively and making connections. Michele has a Masters in Health Science (Health Administration) degree from the University of Toronto and a Bachelor of Pharmacy degree from the University of Saskatchewan.

Dr. Siok Swan Tan:

Siok Swan Tan graduated from Business Administration and Health, Policy & Management at the Erasmus Universiteit Rotterdam in 2002. She worked on several healthcare-related research projects before joining the institute for Medical Technology Assessment, Erasmus MC University Medical Center, as a health economist in 2006. In 2009, she defended her dissertation entitled 'Microcosting in economic evaluations: issues of accuracy, feasibility, consistency and generalisability'. Current research topics include the Dutch DRG-like DBC casemix system, the development of reliable costing methodologies and the establishment of reference unit prices.

Dr. Unto Häkkinen:

Unto Häkkinen is Research Professor in National Institute for Health and Welfare (THL) in Finland. He is working at the Centre for Health and Social Economics (at THL). He has been a Finnish co-ordinator in

many international comparisons and a project director in EuroHOPE (European Health Care Outcomes, Performance and Efficiency) -project funded by European Commission.

His academic and applied research has mainly focused on health economics and topics related to it covering topics such as: cost, financing and outcome of health services, equity in health and health care, demand and utilisation of health care, payment systems in health care, health care reforms, allocation of health care resources, regional variation of health care, hospital productivity, care of the elderly and register-based analyses of costs and outcomes in health care.

About the Institute:

The Institute of Health Economics (IHE) is a non-profit Alberta-based research organization committed to producing, gathering, and dissemination evidence-based findings from health economics, health policy analyses, health technology assessment and comparative effectiveness research to support health policy and practice. Established in 1995, it is a unique collaborative arrangement among government, academia, and industry.

The IHE has a staff of 25 that includes health economists, health technology assessors, research methodologists and policy analysts, information specialists, and project and administrative personnel. The Institute is a member of the International Network of Agencies for Health Technology Assessment (INAHTA) and the World Health Organization's Health Evidence Network (WHO HEN) and is the secretariat for Health Technology Assessment International (HTAi) www.htai.org.

The IHE regularly designs and conducts consensus development conferences and policy dialogues for provincial and national public and private sector organizations on a wide range of issues. More detailed information on the IHE is available on our website. (www.ihe.ca)