



Millcroft Leadership Conference

June 8 – 10, 2001

Theme: Human Resources

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This second Millcroft Leadership Conference focused on Pharmacy Leadership and Manpower Challenges and included approximately 40 leaders from the hospital pharmacy community as well as representatives from the Canadian Society of Hospital Pharmacists (CSHP), the Canadian Pharmaceutical Association (CPhA), the Association of Faculties of Pharmacy in Canada (AFPC) and L'Association des pharmaciens des établissements de santé du Québec (APES). The conference was organized by the Editorial Advisory Board of the Canadian Hospital Pharmacy Report and was supported financially and administratively by Eli Lilly Canada Inc.

Dr. W. J. Sibbald, Physician-in-Chief of Sunnybrook and Women's College Health Science Centre in Toronto, delivered a presentation titled "A new paradigm in the management of severe sepsis: role of activated protein C". This review of sepsis and its treatment also suggested we need to look for unexpected systemic causes of problems. For example, in one study Dr. Sibbald unexpectedly found that the shelf life of blood correlates to adverse medical events in sepsis. He also focused on medical care as a team effort and acknowledged the challenge of balancing the cost and benefits of new technology. This presents an opportunity for pharmacists to work with clinicians to use evidence-based approaches to address patient care needs.

Gaetano Crupi, President and General Manager of Eli Lilly Canada Inc., presented "The human resource challenge, an industry perspective". His message was that employees are critical to the mission and success of their business. It is imperative to treat each of them as important. Managers need to spend time with staff and keep the lines of communication open. A significant amount of effort is required in the hiring process and the manner in which people are brought into the organization. Once people are employed, a strong performance management system with clear goals, developmental plans and succession planning is needed. All activities should align with strategic intent and corporate objectives. Recognition of good work has to occur as it happens and feedback should be constant. This can be supplemented with career ladders and employee recognition programs.

To remain competitive, even when successful with your human resource strategies, you need to seek out ways to improve. Lilly participates in the Report on Business employee opinion survey every 3 years. The company follows up any concerns identified with a focus group to clarify the issues and then a task force with a mandate to effect change is formed. To emphasize the importance of change, senior leadership participates in the task forces to ensure any promises made can and will be delivered. One of the most significant issues Lilly is trying to address is the balance between employees' work and personal lives. Lifestyle issues are increasingly important to staff and it is no longer acceptable to work long hours without regards to personal priorities.

Pharmacy Leadership Challenges

Philip J. Schneider

Philip J. Schneider is Clinical Professor and Director of the Latiolais Leadership Program at the Ohio State University, an inter-professional program to optimize the medication use process and reduce adverse drug events. As the conference's facilitator, Philip gave an overview of Pharmacy Leadership Challenges.

Workforce Issues

Based on surveys in Canada and the U.S., there is a shortage of pharmacists in terms of available positions and the number of pharmacists. These workforce issues are repeated across the world and in many different professions, e.g. nursing and medicine. In hospital pharmacy, we need to improve our ability to compete in the market and to look hard at what we really do require. The major determinant in a pharmacist's decision to accept a position is an exciting vision in terms of what the department wants to accomplish and a commitment to achieve that vision. This doesn't mean there are no mundane aspects to the work, but overall the job is exciting and going somewhere.

Marketing our departments and our vision and working with students is essential for future success. When we are short-staffed, we tend to reduce time spent with students but this may be short-sighted. We need to re-engineer our work with automation and expand the use of technicians. There needs to be an emphasis on retraining staff and on retention through education and training programs. We need to improve performance appraisals and staff

satisfaction by surveying for employee opinions and acting on them. We also need to thank our staff for a job well done as much as possible.

Leadership challenges

Leadership challenges in Pharmacy include:

- Expanded use of technicians
- Expanded use of technology and automation
- Physician order entry
- Leadership succession planning
- Medication error reduction strategies
- Seamless care

The premises underlying this discussion include the limited number of pharmacists, and the fact that pharmacists are expensive. There are problems with the medication use process in terms of efficacy and optimal use of medications, safety and the related public concerns, and limited resources particularly for new therapies. Most funding organizations consider health care a major drain on their resources and drug costs are a major portion of both the costs and the potential solution in avoiding hospitalization. Finally, we cannot expect to do everything – we need to decide what we will give up in order to accomplish our goals.

We need to listen more carefully to everything around us in order to understand what the market is telling us. For example, hospitals are no longer preferred employers so we need to determine how to make our hospital a great place to work. The public is concerned about safety, so we need to provide a service that people will trust. We need to understand what people want/need and where they want to receive the service. Today, the art of Leadership is becoming the art of listening and following what you hear. It revolves around the question of what are we trying to do versus what are others telling us they need.

From an American perspective, the quality issue is being spearheaded by the Institute of Medicine (IOM). The first report, “To Err is Human”, focused on incidents and safety. The second IOM report is called “Crossing the Quality Chasm” and is a much broader look at healthcare. It examines the issues around redesigning health care in the U.S. It was produced because of significant evidence that there are serious quality shortcomings in care. There are many uninsured people, highly fragmented delivery systems, poor clinical information infrastructure that makes efficient communication difficult, overuse of many services such as lab tests, and an “era of Brownian motion” in health care.

The IOM report recommends a commitment to six aims for 21st century healthcare (the order in which they appear is important):

- Safety – avoiding injury first and foremost.
- Efficacy – evidence based care, appropriate use of interventions.
- Patient-centred care – take into account the patient’s preferences, needs, values.
- Timely delivery of service – reducing waiting times and delays.
- Efficiency – avoid waste, some statistics say 50% of care is wasted.
- Equitable – quality of health care does not vary by location, patient population.

The report also recommends ten rules for redesigning healthcare. Care must be based on a continuous healing relationship with an emphasis on prevention and a proactive approach. Customization of care is based on patient needs and values. Patients are involved in their own care and act as the source of control. Shared knowledge and the free flow of information between care providers must happen, for example access to lab values and allergy information when entering medication orders would reduce adverse events. Evidence-based decision making and safety should be seen as system properties. We need to think about a hospital the way we think about airlines and build systems with concern for preventing unlikely events. There is a need for transparency with review of sentinel events and openness in discussing why they occur and what will be done about them. We need to anticipate needs. There has to be a continuous decrease in waste in the system. And finally, there must be cooperation among clinicians.

Challenges in achieving this vision include an institutional commitment to the redesign of care processes based on best practices. We need to increase the use of information technologies (IT). Most hospitals have invested 1-2% of operating funds in IT, whereas most information based industries invest 10% and have done so for years. In the current climate of funding constraints this is hard to do. There also has to be knowledge and skill management, development of effective interdisciplinary teams, coordination of care with respect to timing and care settings and effective performance and outcome measurements.

Priority medical conditions were identified by the Medical Expenditure Panel. As pharmacists, we need to examine this list and determine where we can make a difference, e.g. cancer care, diabetes, anticoagulation, lipid management, hypertension, asthma. The list in order of priority is:

- Cancer
- Diabetes
- Emphysema
- High cholesterol
- HIV/AIDS
- Hypertension
- Ischemic heart disease
- Stroke
- Arthritis
- Asthma
- Gall bladder disease
- Stomach ulcers
- Back problems
- Alzheimer's disease
- Depression
- Anxiety disorders

To prepare the workforce for the future of health care, we need to restructure the clinical education of health professionals and assess the implications for credentialing and educational programs. For pharmacists, the ability to be reimbursed for cognitive services will be crucial.

The Improvement Model

This model was developed by Langley, Nolan and Nolan in order to improve the delivery of health care. The model has 3 aspects:

- Aim – What are we trying to accomplish? What is the unmet need? Require evidence there is a problem that needs to be fixed, e.g. ensure patients do not receive agents to which they have a known allergy.
- Current knowledge – How will we know a change is an improvement? What specific measurement system will we use?
- Cycle for learning and improvement: What changes can we make that will result in an improvement? Improvement always involves change but not every change will result in improvement. A plan is developed based on hunches and a small scale test is performed to verify the plan. Data is collected over time and finally we act to spread change or try something else. It is not realistic to expect improvements while remaining with the status quo.

The medication use process is complicated and not easy to change. There are many steps in the process – prescribing, dispensing, administration and monitoring. As pharmacists, we have seldom focused on the prescribing and monitoring steps and have traditionally looked mainly at the dispensing and administration aspects. We need to consider all aspects of the process in developing our aims.

Ohio State University's Clinic Pharmacy has developed eight goals to explain "Why Are We Here?"

- Patients should understand the benefits and risks before receiving an investigational drug. This was a priority for their organization since only half of the patients had signed an informed consent. After implementation of the pharmacy service, this reached 100% compliance.
- Patients should not experience an adverse reaction to a drug that is predictable and preventable. For example, red man syndrome for vancomycin.

- Patients should receive the correct dose and drug as prescribed.
- Patients should not develop a nosocomial infection from drugs that should be sterile.
- Patients should not receive drugs to which they have a known allergy.
- Outpatients should receive their prescriptions in a timely fashion, e.g. 20 minutes.
- Patients should have doses of drugs individualized when necessary.
- Patients should receive the most effective drug therapy at the least cost.

For each of these goals, there are performance measures including criteria based audits, e.g. review 50 charts for adverse drug reactions.

There are challenges and barriers to implementation of the improvement model such as cost containment pressures, the pharmacist shortage, and weak public expectations of pharmacists. In addition pharmacists may be reactive rather than strategic in their actions, have inadequate skills to manage change, and be selectively hearing what we want to hear, not what needs to be done. However, opportunities also exist because pharmacists can make a difference and can help address public concerns regarding the cost of, access to, and quality of health care.

In December 2000, there was a Human Resources study of the supply and demand for pharmacists. It determined the supply of pharmacists has increased, but demand has grown faster than supply. A shortage of pharmacists with vacancy rates of 6-7% in chain drug stores and 22% in hospitals was recognized. The average time to fill a position was 6 months.

The increase in demand for pharmacists is multi-factorial. More prescription drugs are being used worldwide. There are more practice sites with the growth in the number of chain drug stores and the increase in store hours, eg. 24 hours, 365 days a year. Managed claims require more time to process since there are criteria to adhere to and authorizations to obtain. There is an expansion of pharmacist practice roles and at the same time part time employment is increasing. Finally, in the transition to entry level Pharm D degrees, there were some faculties that had no graduates for some years.

Solutions to the pharmacist shortage include the increased use of technicians, automation and technology to relieve some of the pressures on pharmacist time. Enrollment in Colleges of Pharmacy can be increased. Uniform prescription benefit plans that simplify the adjudication process would ease workload. Workforce mobility would be enhanced with greater licensure reciprocity among jurisdictions including recruiting foreign graduates. Other strategies are found in the AJHP 2001; 58:548, and include, specifically related to the hospital pharmacist shortage, increased salaries especially with comparison to community practice. Some larger centres are hiring pharmacist recruiters that can talk to applicants in a more meaningful way. We also need to create the capacity to improve staff skills and improve orientation and training for new staff. We need to establish relationships with schools of pharmacy, e.g. mentoring and training programs starting early in the students' program. This may include sponsoring some of the costs of students' pharmacy education.

Other solutions involve improving the work environment including spending more time with patients. This may require retraining pharmacists and restructuring positions towards cognitive pharmacy practice. By reassigning technical work e.g. purchasing, inventory, scheduling, and computers, to technicians and by outsourcing medication preparation e.g. IV admixture preparation, pharmacist time will be freed up. One of the difficulties with expanding the technicians' role is that their scope of education and practice is not consistent. There are other models for supportive practices, e.g. dentistry, anaesthesia, labs, where there is control over the profession with significantly higher ratios of technicians to professionals. We need training programs for pharmacists on how to delegate tasks to technicians and how to supervise them e.g. pharmaceutical dispensing labs in conjunction with technicians. Ideally this should be incorporated early in the curriculum.

Technology and the Pharmacist

Technology can be applied to drug preparation, drug distribution (centralized and decentralized), IV drug delivery, computer order entry and bar coding for MARs. Some of the barriers include cost, system compatibility, regulatory limitations, and resistance to the implementation of technology from pharmacists, nurses, and physicians. Drug preparation can be automated using TPN compounding machines, syringe fill devices, robotic admixture systems and outsourcing. Technologies for drug distribution include centralized robots such as the APM® or IDS® and

decentralized systems such as Pyxis®, SureMed® or DocuMed® which have application in different areas of patient care. IV Drug delivery technologies such as syringe pumps, PCA devices, implantable devices and infusion control devices can be used.

Physician computer order entry is receiving a lot of attention from groups such as Leapfrog. Models are based on studies at two hospitals that have decision support logic in conjunction with the order entry system. Results showed a positive impact on transcribing errors and transfer of information. Initial steps include development of standardized order protocols that facilitate the automation process. To get the best value from these systems, more complex clinical decision support logic that will provide feedback to physicians is needed.

Bar code application to bedside care has been a long time coming even though it improves documentation accuracy. It can also include clinical decision support such as a wrong patient alert, wrong time alert, and drug allergy/interaction alert. This technology will also allow assessment of drug administration system performance. There still needs to be an evaluation of bar code standards and how they apply to the individual dose the patient receives.

Outpatient technologies include automated dispensing machines, automated telephone refill systems, point of care patient testing systems for monitoring drug therapy, clinical information systems that provide more information to pharmacists, and electronic prescription systems.

In summary, the use of technology and automation is increasing, and can be an enabler of advanced practice roles.

Leadership Succession Planning

There are fewer middle management positions where staff can learn the skills of the trade. Management is not as appealing to pharmacists as it used to be because the job is not fun any more. Leaders also need new skills they do not learn in pharmacy school such as change management, operations improvement, personnel management, and communications. Most leaders have completed a residency program where they have had the opportunity to be mentored.

Patient Safety

The IOM recommended specific strategies to improve Medication Safety in their “To Err is Human” report. These included:

- Systems oriented approach to medication error reduction.
- Standardize processes in patient care areas – doses, dose timing, dose scales. Reductions in variation will reduce errors.
- Standardize prescription writing/rules.
- Limit the number of different types of common equipment.
- Implement physician order entry.
- Use pharmaceutical software.
- Implement unit dosing.
- Pharmacy supplies high-risk IV medications, eg. antibiotics.
- Written procedures for high-risk drugs, such as those used in the ER, OR, NICU and PICU, e.g. neuromuscular blockers.
- No concentrated medications in patient care areas, e.g. KCl.
- Pharmaceutical decision support with pharmacist review of orders before they are dispensed and administered.
- Pharmacists go on rounds in patient care areas.
- Patient care information available at the point of care.
- Improve patient knowledge about their treatment to provide an additional check on the system.

Pharmacy can respond to the IOM report by:

- Establishing an administrative structure for improving the medication use system that would bring together pharmacists, nurses, prescribers, and risk management staff in an interdisciplinary group under the umbrella of the Pharmacy and Therapeutics committee to address these issues.

- Help create an environment for improvement where there is no fear of discipline and caregivers can discuss changes that will improve patient safety. Medication incident reporting needs to be separate from the performance appraisal system.
- Implement best practices as outlined in many reports. These include voluntary reporting of adverse drug events and near misses, implementing computerized prescriber order entry systems, unit dosing, and not stocking concentrated medications in patient care areas.
- Create performance measurements for the medication use system using surrogate measures such as lab values, the use of antidotes and other drugs used to treat ADRs, and direct measures such as pharmacist interventions, and medication use evaluation studies.
- Test change concepts that have the potential to improve medication use such as standardization/protocols e.g. treatment of hyper/hypokalemia, educational programs, and collaborative practice models e.g. anticoagulant support service.

Seamless Care

The current system is very fragmented with few incentives to create seamless care. It will take a long time to solve the existing problems. There are confidentiality issues as well as freedom of choice/ restraint of trade questions. As technologies such as the Internet, and smart cards evolve, there may be more progress.

Pharmacy Human Resource Challenges
Is there a Pharmacist Shortage?
Bonnie Salsman and Steve Long

Canada has 24,500 licensed pharmacists; 80% work in retail pharmacies, 15% in hospitals, and 5% in other fields. Faculties of Pharmacy graduate 800 students per year. The survey results from the 1999/2000 Hospital Pharmacy in Canada Annual Report were presented including data from the special interest section on Human Resources. The survey results indicated a 10% vacancy rate for pharmacists but no significant vacancies in support positions such as pharmacy technicians and clerical staff. Pharmacist vacancies took an average of 4 months to fill. Some respondents experienced an impact on service due to staff shortages. A further consideration is that many pharmacists are eligible to retire in the next five years.

Despite pharmacist shortages, very few departments have retention and recruitment strategies. These strategies could include staff satisfaction surveys, education and training opportunities, career ladders, top of scale bonuses, flexible work hours, signing bonuses, and recruitment fees. With the July 1, 2001 enactment of the Mutual Recognition clause, licensees from nine provinces will be able to practice pharmacy in other provinces. This will provide additional recruitment opportunities for hospitals.

In general, there was a trend towards an increase in pharmacist positions, but the proportion of time spent in distribution, direct patient care, and teaching/research remained unchanged. In addition, the ratio of pharmacists to technicians remained at approximately 1:1. There is an opportunity to improve on the use of technicians both to ensure that they consistently perform their traditional roles in all practice settings and to move forward with other responsibilities such as technician checking of technician work. This delegation of work needs to be accompanied with appropriate technician training and certification programs to ensure quality and manage risk.

Pharmacists and technicians perform the majority of order entry and there has been no significant progress to clinician order entry in Canada or the USA (less than 10% of sites). Strong physician involvement in the process is required for success as well as large numbers of input devices in patient care areas.

Finally, there needs to be an increase in the number of automated dispensing systems. Only a third of hospitals had automation support and the majority of these were centralized systems.

Association Updates on the Human Resource Issues
CPhA, APES, AFPC, CSHP

Canadian Pharmaceutical Association, Janet Cooper

The Pharmacy Human Resources HRDC study “A Situational Analysis of Human Resource Issues in the Pharmacy Profession in Canada” is on the CPhA web site www.cdnpharm.ca. The study reviewed published articles and reports, public data and internet sites. They also had 23 key informant interviews asking questions about labour markets for pharmacists and technicians, evolving roles, training and practice patterns. This is a limitation of the report since it was based on available information only and no new information.

The report indicated the pharmacist occupation is in transition and where we are going is not precisely clear. Despite the increasing demand for pharmacist services in both community and hospital, patients don't seem to be suffering although some pharmacies have reduced their hours or closed. In terms of the pharmacist shortage, there is approximately a 10% vacancy rate, both in community and hospital settings. This is both a Canadian and a global issue. The root causes of this shortage may include expanded grocery and department store pharmacies, increased hours of service, rising prescription volumes due to the aging population, greater demand for information from consumers and increased availability and complexity of drug therapies.

On the flip side, it has been suggested there is not a shortage, but that pharmacists are performing tasks they don't need to. If technicians assume these functions, pharmacists could focus on what they are trained to do and there would not be a shortage. However, if pharmacists get involved in primary care reform, there may be a very significant rise in demand for their services.

The report concluded there are gaps in information. A comprehensive objective analysis of current and future human resource issues in pharmacy practice is not available. The next step would be an Occupational sector study with HRDC looking at both pharmacists and technicians. The Millcroft group also suggested that the scope of technicians and the use of “assistants” when it is more appropriate be considered in this study. The purpose of the study would be to answer questions about the extent and nature of the shortage, the causes of it, and what can and should be done to address the problem. The steering committee for the sector study is being established. A proposal for HRDC will be developed with a 50:50 funding model (HRDC:Pharmacy) for an 18-24 month study that will cost \$400,000-500,000. Pharmacy contributions can be both cash and in-kind contributions.

Other CPhA initiatives include working with a Health Sector Studies Communications Secretariat committee looking at several sector studies on nursing, medicine, pharmacy, oral health, social work and home care. There is also a rural and remote practices survey to look at recruitment and retention factors, and pharmacy will be part of this study.

L'Association des pharmaciens des établissements de santé du Québec – Manon Lambert

In Quebec in 1999 the health minister created a task force on the pharmacist shortage. Many organizations were involved including APES, the employers' association, and the Faculties of Pharmacy. The health minister was already convinced there was a shortage and the study was to look at the impact of this shortage on the profession. The study found a 10% vacancy rate in hospitals, and a 3-6% vacancy in retail pharmacy (although the data was less clear). If the current trend continues, there is a forecasted 25% vacancy rate in 15 years time.

The problem affects all categories of hospitals in all geographic locations. About half of the vacant positions are permanent full-time positions with the average time to fill a position being 8 months. The report should be published in July and will have an action plan with two measures related to recruitment and retention. The capacity to attract new pharmacists to the Masters program, a requirement for hospital pharmacy practice, is one measure. The report indicated a need to increase pharmacist salaries, and to provide more tuition scholarships. Retail pharmacists are very aggressive in marketing themselves to pharmacy students early in their school career. The retention measures are more difficult since they rest with the health minister and he was not prepared to discuss salaries in the context of this report.

Association of Faculties of Pharmacy in Canada, Jim Blackburn

From the Faculty perspective, there are three issues to examine related to pharmacist manpower:

- How many graduates does Canada need in the future?
- How can faculties work with hospitals to get students interested in hospital practice early on in their education?
- Education is a collaboration between universities and practitioners which also means it requires collaboration between the Education and Health Ministries in each province.

How Many Graduates are Needed?

From a planning point of view, immediate action by Faculties still has a 4-5 year time line. For example, any admission changes made for the September 2001 entry of students will not affect graduating numbers until May 2005. Medium and long term perspectives have 10 year plus time lines. The total numbers of Canadian graduates has varied over the last 2 decades and is outlined in the following chart. Universities have recently put pressure on faculties to increase enrollments since Pharmacy is a significant program for revenue generation for the university. As a result, there will likely be 1100 students 7 years from now.

Year	#Graduates
1980	695
1985	632
1990	826
1995	785
2000	780
1999 admissions for 2003 graduation	888

David Hill undertook a study of the admissions to schools of pharmacy, by province, in the last 10 years. The indicator he used was the number of placements per 100,000 population. The average was 2.9 however, as illustrated in the table below there was significant variation with Ontario at 1.21 at the low end and Saskatchewan at 7.78.

Geographic Area	Admissions/ 100,000 pop'n	Faculty	Plans for future numbers of graduates
British Columbia	3.48	University of B.C.	Stable with 140 graduates
Alberta	3.71	University of Alberta	Have 110 graduates, considering the future
Saskatchewan	7.78	University of Saskatchewan	Stable with 80 graduates
Manitoba	4.54	University of Manitoba	Have 52 graduates, but will begin constructing a new building
Ontario	1.21	University of Toronto	Going from 140 to 240 when new building is finished
Quebec	3.54	Universite de Laval	Going from 110 to 130 graduates
Quebec	3.54	Universite de Montreal	Going from 130 to 165 this year and to 200 next year
Nova Scotia/ NB/ PEI	3.60	Dalhousie University	Going from 66 to 90 this fall
Newfoundland	7.40	Memorial University	Reducing from 42 to 36 graduates

With these increasing enrollments in Faculties of Pharmacy, there is a need to consider the human resource issues for teaching staff, particularly with upcoming retirements and insufficient graduates pursuing academia as a career.

Over the last few years across Canada, there has been a gradual decrease in the number of applicants to pharmacy faculties. Because faculties were over-subscribed previously, there were never any real recruitment campaigns and faculties are now faced with student recruitment as a priority issue. Dalhousie had a fairly aggressive recruitment program last year including TV ads. They were able to double the number of applicants to their program.

How do we get Students Interested in Hospital Pharmacy?

The faculty suggestion is that all first year students should do a one month placement in hospital practice. However with the shortages in the system, this will result in additional stress. As part of the BSc program there needs to be greater exposure to direct patient care. Hospitals also need to get graduates interested in residency programs where they will get patient exposure and clinical experience. The impact of student placements can be reduced with job shadowing, ratios of 1:2 for preceptor:students, and by reducing the paperwork and administrative burden for preceptors.

Collective agreements need to consider the education component and the extra efforts of preceptorship, but progress is slow. In Alberta, they are considering financial recognition for preceptor time, e.g. \$1 per preceptor hour for nursing preceptors. In B.C. there is currently a disagreement between the Ministries of Education and Health as to who is responsible for paying for preceptorship.

Education also needs to be responsive to the needs of the market. Pharmacy students should learn about technology and medication safety, however it is difficult to move away from the scientific foundation of pharmacy. These topics are covered in residency programs that have a more practical focus.

Education as Collaboration between Faculties and Practitioners:

We need to determine what it costs hospitals to provide student placements and develop a process to negotiate with Ministries of Health. Somehow, education has to return to hospital funding as a priority for all health care professions. For the future, there is a specific need to consider that 1100 pharmacy students will mean an additional 300 placements in hospitals.

Canadian Society of Hospital Pharmacists, Linda Polloway

CSHP has not put out a position statement on the pharmacist shortage. However, CSHP does support the increased use of technicians and automation and an increased clinical role for pharmacists. There is a task force that will be publishing a statement on the use of technicians. At the CPhA conference in May, there was a forum for discussion of issues across organizations including the scope of practice of the technician. The Canadian Council on Accreditation of Pharmacy Programs, is looking at certifying pharmacy technician programs. Alberta and Ontario are certifying their Pharmacy Technicians. CSHP has looked at the relationship between automation and safety, but this is dormant at the moment.

In terms of improving the hospital environment as a work site, CSHP will be surveying members and may look at a job satisfaction survey for hospital pharmacists as part of this. In terms of enhancing job satisfaction for the practitioner, CSHP is looking at the pharmacist as a prescriber. At the joint officers meeting with the Association of Faculties of Pharmacy in Canada there was discussion on how to get students interested in hospital practice early in their career. CSHP could possibly look at the IOM report and provide summary points to members, as well as the six action steps in the second report.

Small Group Discussions
All Participants

Five groups broke out to consider five questions related to Pharmacy Leadership Challenges. The summaries from these groups is presented below.

1. What are the aims (aspects of care) for Canadian hospital pharmacists?

We need aims and objectives for pharmacists and their professional organizations. These may include advancing professional practice, spending more time with patients, enhancing competence, and improving practice through automation and the use of technicians. Patients expect to be healthy, that the health care system is safe, and that treatment is effective, timely, and cost-effective. This is a double edged sword since if you don't move forward, staff will not feel challenged, but you cannot keep asking more of people in a tight fiscal environment. There has to be a balance between both of these and we need to determine what we don't need to do any more or what can be re-engineered. Staff have to contribute to the strategic direction of the department and hospital rather than just doing what they want to do.

Big picture aims for the profession to focus on (measurement indicators available in the Canadian Hospital Pharmacy Report):

- Increased proportion of pharmacist time spent on direct patient care activities.
- Decreased pharmacist vacancy rate; Decreased time to fill vacancies.
- Increased delegation of technical tasks to pharmacy technicians and other support staff.
- Increased utilization of automation – all aspects of the care delivery system; improve the safety and efficiency of hospital pharmacy operations.

Patient specific aims:

- All patients discharged on thrombolytic therapy should be given appropriate counseling by a pharmacist.
- All patients to receive appropriate medication discharge instructions by a pharmacist (hospital or community).
- All patients to receive a medication history by a pharmacist within 48 hours of admission.
- Patients receiving aminoglycoside antibiotics to have doses adjusted according to body weight and renal function.
- Pharmacy dispenses the correct drug, dose and administration instructions.
- All patients receive pharmacy services shown to improve quality and cost effectiveness of therapy.

2. What can technicians do that pharmacists currently do?

The Canadian Hospital Pharmacy Report reported fewer vacancies for technicians than pharmacists and that our ratio of pharmacists to technicians is not particularly high. Most advanced practices have ratios of 3-4:1 for technical to professional staff. We need to realize we are all at different places in this journey, but it is a destination we all need to head towards. Technicians can be used for management functions, coordinating the work of other technicians, and training of other technicians. Information systems and maintenance of automation can easily be delegated to technicians (despite a natural tendency of pharmacists to gravitate to technology). This is in addition to the more traditional roles for technicians in dispensing and distribution and purchasing and inventory control. We also need to determine how to proceed with legislation, training and certification. We need the support of pharmacists, information systems, adequate technician staffing and stability. Successful models need to be published in order to help others.

Activity	Delegate to	Delegate what
Pharmaceutical care	Technicians, IT	Data collection, maintain profiles
DUR and DUE	Technicians or students	Data gathering
Discharge counseling	Technicians or clerks	Material preparation, calendars, insurance coverage information
TPN monitoring	Nutritionists	Data gathering, recommendations
Patient teaching	Nurses	Teaching using prepared materials
Investigational studies	Technicians	Dispensing, logs, statistics, inventory, returns, billing, inservices to other technicians
Special access drugs	Technicians	Purchasing, documentation, inventory

Drug information	Clerks	Literature searches, ordering journals, data base coding, copying, gathering references
Information technology	Technicians	Data base work, reports
Drug distribution	Technicians	See separate list; pharmacists still need to design the systems and the quality assurance mechanisms, certification, training
Materials Management	Technicians, clerks, porters	Purchasing, inventory control, contract processing
Other	Technicians or clerks	Workload measurement, scheduling, financial month end, telephones

Drug distribution activity	Pharmacist Check	Tech to Do	Tech to Check
Order entry (Or Clinician Order entry also)		X	X (practicality?)
Traditional inpatient prescriptions		X	X
First dose dispensing		X	X
Unit Dose cart fills		X	X
Centralized unit dose automation fill		X	X
Decentralized dispensing automation fill		X	X
Night cupboard fill		X	Not needed
Prepackaging		X	X
CIVA program		X	X
Chemotherapy		X	X (Yes but?)
TPN		X	X
Leave of absence Rx	X	X	
Retail prescriptions	X	X	
Emergency drug boxes		X	X
Wardstock		X (or assistants)	Not needed
Narcotics		X	RN check
Master Worksheets	X (do and check)		

3. What can be done to address workforce issues in Canadian hospital pharmacy?

We need to do less work so fewer pharmacists are required. There has to be visioning and enthusiasm because we need to know where we are going over the next few years. Some work like medication histories and discharge planning are labour intensive and unpredictable work. Pharmacists can target certain patients and at the same time help nurses develop teaching materials for most patients. We also need to make work more attractive and give positive reinforcement to staff. Student liaison needs to be a priority. In addition to focusing on recruitment, and retention, we need to re-engineer.

- Market the hospital pharmacy profession: newspaper articles and media coverage; Mentorship at the beginning of the BScPhm program; talk to public and patient groups; increased awareness and expectations from patients; promote pharmacy within your organization. Pharmacy organizations need to be involved at a high level, but we can also do this locally in our own workplace.
- Work on recruitment and retention: student loans; increase the salary of pharmacy residents; look at family and spouse issues for staff; examine the organization of services in the department e.g. scheduling and vacation time, balancing part-time positions; have pharmacy students exposed to hospital practice and hired earlier; offer a good orientation; career plan for pharmacists e.g. where they want to go clinically; CAPSI book lists the questions that students should ask when they go for interviews; signing bonuses.
- Rethink teaching: The money for teaching is less than that available for medicine; can we do things differently; start teaching earlier; mentorship; technician teaching to ensure they have the skills we need.

- Communicate: to preserve the team spirit both as a department and as an interdisciplinary team; next Canadian Hospital Pharmacy Report could have a section on job satisfaction that would go to all pharmacists (or CSHP could do this).
- Have control over the demand for services: need to understand the demand for services and control expectations; need to focus on the most relevant outcomes.
- Create a more mature role profile for pharmacists: the profession has evolved and we need a model for pharmacists to follow which will improve job satisfaction; mentorship and education for the continuum of clinical skills up to complete pharmaceutical care.
- Improve organizational and management skills.

4. What is a good strategic plan for introducing automation and technology?

Technology is the enabler, not the solution. Implementation is difficult and time consuming and IT can create new kinds of problems. Before implementing we need to map our processes and define best practices, for example computer order entry allows us to check dose ranges more easily, but that process should already be in place. Staff resistance to technology should not be underestimated. Automation may allow for reduction of FTEs which may help solve workforce issues.

Strategic Plans for Automation and Technology

- Many different types of technology improvement can be investigated. Your current situation will determine which areas to focus on first. The Pharmacy strategic plans need to tie into the hospital's strategic and operational plans.
- Strategic focus areas for a hospital could be patient outcomes, quality and safety, recruitment and retention, technology, adoption of standards, appropriate use of interventions, streamlining of activities and efficiency, or competition in the marketplace.
- This is not a "one size fits all" process and it includes long term plans with annual presentations and ongoing communication.

Stakeholders

- Stakeholders need to be identified and can include pharmacy staff, nurses, doctors, Pharmacy and Therapeutics committee, administration, patients, IT services, risk management, provincial and other regulatory bodies, and insurers and employers.
- The stakeholders should be involved early in order to feel part of the process. They need to have input into developing solutions. We need to listen to what they are telling us.
- Ask stakeholders what they want to get out of the process of change, e.g. quality, patient safety, efficiency. Some expectations may not be realistic so you need to ensure they understand what you are measuring, e.g. medication errors may go up with a new system, since voluntary reporting is inaccurate.
- May need different strategies depending on the group, current system issues, and sentinel events that may drive change. Some members of the group may be uncomfortable with the technology you are recommending which can be a barrier.
- Need to be careful in discussions of #FTE saved with a technology. It is better to frame the project in terms of freeing pharmacists, nurses, etc. from technical tasks to allow for a more clinical focus. The number of lives saved, using information from the Institute for Safe Medication Practices can also be used.

Stakeholder	Interests and Expectations
Nurses	<ul style="list-style-type: none"> - increased efficiency, accessibility and turn-around times - focus on actual problems and use a patient-centred approach - interested in quality and reduction of potential errors - want increased input and education - need to address staffing shortages and be sensitive to their history of staff layoffs - may be hard to involve nursing due to shortages and changing structures in organizations - don't want to be guinea pigs so be sure to share success stories from other hospitals
Physicians	<ul style="list-style-type: none"> - in the past, were often not aware of medication errors and the issues around them - they may have competing priorities, e.g. patient waiting times and may be more interested in saving time than saving money - need specific examples of what patient safety means and use studies to support an "evidence based" approach to improving care; look at potential impact on liability

	<p>insurance and costs</p> <ul style="list-style-type: none"> - need to determine the impact of change on physicians - one tactic is to have strong physician advocates that can use peer to peer communication to reach physicians; in some hospitals this is a paid position - other forums to access physicians include Pharmacy and Therapeutics, Medical Advisory and Quality committees
Pharmacy Staff and their Unions	<ul style="list-style-type: none"> - need to have a vision and build on it - particularly important to have their early involvement including the union if applicable - need to address the fear of job loss - stress job changes and new roles that increase job satisfaction and responsibilities - need management support for re-engineering including training and continuing education as part of the implementation process - look at future volumes and workload in planning - quality patient care and enhanced clinical roles are important
Administration	<ul style="list-style-type: none"> - need to create a capital business plan including the impact on operating costs - relate solution to problems that are relevant to them, e.g. recruitment/retention, effective use of current skilled staff, increases in quality, increased profile for the hospital - need to think about increasing awareness of technology and its' appeal through sharing publications, national or association statements - look at potential Foundation funding
Patients	<ul style="list-style-type: none"> - advance their awareness re: the impact of technology on the quality of their care - from an ASHP survey, patients' #1 fear is that they will experience a medication error while in hospital - take the opportunity to link the project to addressing their concerns - patients can be strong drivers for change as their awareness increases

5. What can be done to improve medication use safety?

This is the hottest topic in pharmacy today and shifts the emphasis from the drug budget. Medication use safety resonates with consumers, public policy makers, caregivers and administrators. It validates traditional pharmacist roles e.g. unit dose, CIVA, clinical services. It also justifies technology and automation.

- Automation – unit dose; IT; help ease strain of shortages.
- Need to promote unit dosing as the system of choice.
- IT can be key strategic partners since pharmacy staff are good with computers and have successful implementations.
- More involvement in research and design of protocols and reporting of significant events, post-marketing surveillance.
- Role of P&T committee.
- Reporting, analyzing, identifying trends in medication errors will encourage physician involvement.
- Disclosure policy re: medication errors to patients.
- Evidence-based decision making, standardization of protocols and guidelines; standardized dose times - use a collaborative multi-disciplinary approach.
- Need an organization-wide initiative regarding medication use safety with pharmacy taking a leadership role.
- Pharmacists need to be in patient care areas.
- Drug information services to professionals and patients one-to-one.
- Pharmacy in-services and communications to professionals and patients regarding new drugs, protocols; use of web sites and intranet.
- Delegation to technicians and support staff allowing more time in direct patient care.
- Multi-disciplinary program approach with pharmacist prescribing as per protocol; ability to order lab tests.
- Physician order entry.
- Bar coding.
- Environment – reduce interruptions – both for pharmacy department and on patient care areas.
- Communicate and share across various institutions re: sentinel events and errors, e.g. vincristine intra-theal.
- Seamless care – transfer of care to community pharmacy; use of auto-sub policies; profile information to the patient.
- Pharmacists more involved in discharge planning.

- Involve patients in expected outcomes of therapy.
- Pharmacists involved in medication histories, MARs and counselling.

Conference Closing

Phil Schneider emphasized that pharmacists need to get competitive in health care and be more assertive and optimistic. We have to listen and understand in order to follow a path based on customer needs rather than our wants. We need to continually measure and test to improve our systems. Finally, specifically for this conference, there should be a structure to ensure continuity for the Millcroft Leadership meetings every two years. We need to report back on what we heard and where it took us.

In closing Phil Schneider left the group with four Worthy Aims for Canadian Pharmacy:

1. Reduce adverse drug events: prescribing errors, dispensing errors and administration errors
2. Improve health: be involved in wellness and immunization for example
3. Improve treatment outcomes e.g. for anticoagulation, lipid management, diabetes and asthma
4. Appropriately manage resources devoted to drug therapy: advocate a balanced scorecard

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Canadian Hospital Pharmacy Report Review and Feedback
Ron McKerrow and Jean-François Bussieres

Web site: www.lillyhospitalsurvey.ca

This year both the survey and the report were available via the internet. The group agreed it was easier to use the web site to submit data, but would like to build in an acknowledgement that the survey was really sent to the market research firm. It was suggested the web site needs to be indexed in search engines since it is hard to find, even from the Lilly site. Lilly has added the web site to the jackets of folders used for the Lilly seminars in order to promote the web site. CSHP agreed to establish a link from their site to the survey site.

The survey response rate is fairly good but the Board would still like it to improve. In the past two surveys, the Quebec response rate rose dramatically to 65% as part of an agreement with APES. Ontario's response rate will be the next focus since it has been declining. Most people felt they needed more time to complete the survey and it would help to get it out earlier, e.g. in April. The deadline could also be extended to the end of June. The group agreed that as leaders we need to follow up re: response rate if there are pharmacists in our area that don't respond.

One of the biggest problems for the survey is regionalization. There is a lot of inconsistency since hospitals may report in a consolidated fashion or for a few sites either individually or combined. It was suggested that respondents look at their previous survey results as a quality check when completing the survey.

ASHP, using a different approach, does one third of their survey every year. The group preferred to keep our current approach with a full survey of hospital pharmacy every two years. In terms of specific feedback on questions, participants were each asked to review the whole survey to indicate which questions were important and which are not as important. The results of this work will be collated and used by the Board in preparing the next survey. The topic of interest for the next survey will be Medication Errors and it was suggested we ask what the pharmacy's aims are e.g. what initiatives are being undertaken to reduce medication errors. Suggestions for future topics included drug use management, psychiatric/specialty hospitals, and the impact of regionalization. Suggestions can be forwarded to the Board at any time.

There was discussion surrounding a standard tool for a pharmacy staff survey. The value would be enhanced if you could submit your data to benchmark against other pharmacy departments. We need to know if there is something about hospital pharmacy that can be fixed to increase job satisfaction. CSHP and the Board could work together on this since CSHP has already started down this road and will be developing the tool.

Participants were also interested in obtaining information about the scope of practice of pharmacists from province to province. The expanded section on Ambulatory clinical services was good and we need to keep this.

In terms of increasing the credibility of the survey results, the Board will publish a summary in CJHP for the next set of results. We will also look at obtaining certification from an accounting firm since some consultants are reticent to use the data. The firm would validate the process and the data analysis.

For these Leadership conferences, the group agreed on this date in June two years from now. As a follow up the group was challenged to answer the question: What are you going to do differently as a result of this conference? Three months from now, participants will receive an email asking them to provide information as to what actions they took as a result of the conference. The results will be collated and circulated to participants.

Benchmarking Section and its Use
Kevin Hall

The benchmarking section was created to facilitate comparisons between hospitals with diverse patient care and pharmacy programs. It is also a useful tool when planning for new and/or expanded pharmacy programs. In previous reports there were profiles by bed size and by drug distribution system, but it wasn't enough to explain variations. Therefore, the benchmarking section was created.

This section is sent to hospitals over 300 beds since smaller hospitals are more homogeneous and find it harder to provide detailed data on specific programs. The method involves extraction of specialty programs from respondents' overall data. Specialty programs include those with higher than normal or lower than normal resources both in terms of human resources and drug costs. Some programs are very unique to some facilities and may be regional services.

Survey results, especially for large facilities, show a very large spread from minimum to maximum paid hours per patient day. However, when you remove the outlier services, the remaining inpatient medical/surgical beds show a marked reduction in variability. As a by-product of this calculation, the data for staffing and drug costs for these specialty programs is also available.

Kevin worked through examples of how the benchmarking data can be used for planning. For example, a hospital has 650 beds, 75 of which are long term care (LTC). Your region decides to consolidate LTC beds to another facility and gives you 75 acute care beds of medicine/surgery. With benchmarking data you can provide information on staffing and drug budget implications. Another example involves an expanding oncology program. There will not be an increase in the inpatient days, but the average number of outpatient admixtures will be increasing by 20 per day. The data can be used to determine staffing and drug costs (use with caution for oncology drugs). Then you need to determine the mix for pharmacists and technicians and test the data to ensure it makes sense in the context of your facility. By using the benchmarking data to answer these questions, your approach is consistent and has an objective aspect to it.

There was a question about ambulatory clinical services and how these can be identified and analyzed separately. The unit of measure for ambulatory care needs to be defined as visits or patients. You can only create an indicator if there are enough respondents for each specific service. For the time being, a directory may be more helpful for directors wanting more information on new ambulatory clinical services. There was also a suggestion that paid hours per admission may be a better indicator than paid hours per patient day and Kevin will see if this is possible. The logic to date has been that the ratio of admissions to patient days is consistent within your group since hospitals tend to operate in a similar fashion and patient day information by service is often easier to obtain.

The group agreed the benchmarking section is worthwhile in spite of the amount of time it takes to complete. This information is often used more than the regular section of the survey. The credibility of the Canadian Hospital Pharmacy Report is crucial to our success. Other sources of data often have inconsistent assumptions and interpretations.