

Review of a Canadian forum on international surgery: the Bethune Round Table

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The Bethune Round Table is an annual conference on international surgery that is unique in North America. Hosted by the Office of International Surgery at the University of Toronto, the conference provides a forum for profiling the global realities of surgical need, particularly as they relate to vulnerable and disadvantaged people of low-income countries. The 2004 Bethune Round Table, drawing on input from 4 continents, highlighted "emerging directions." Presentations and discussions focused on the themes of current surgical realities, the implications for surgical education, the role of specialized surgical services and the function of surgical partnerships.

La Table ronde Bethune est une conférence annuelle sur la chirurgie dans le monde qui est sans pareille en Amérique du Nord. Organisée par le Bureau de la chirurgie internationale de l'Université de Toronto, la conférence offre une tribune qui permet de présenter les réalités mondiales du besoin chirurgical, et en particulier chez les populations vulnérables et désavantagées des pays à faible revenu. Fondée sur la contribution de quatre continents, la Table ronde Bethune de 2004 a mis en vedette les «nouvelles orientations». Les communications présentées et les discussions ont porté avant tout sur les réalités chirurgicales de l'heure et leurs répercussions sur la formation en chirurgie, sur le rôle des services chirurgicaux spécialisés et sur le fonctionnement des partenariats chirurgicaux.

The Bethune Round Table (BRT) is Canada's only annual conference devoted entirely to international surgery. From May 14 to 16, 2004, the third such conference was hosted by the Office of International Surgery at the University of Toronto. The term "international" in this setting implies not only participants from a number of countries but also a focus on those surgical maladies and impediments to surgical care that disproportionately afflict many of the regions of our world and are tied to economic, political, social, cultural and environmental determinants of health.¹ An increasingly used term in international cir-

cles is the "10/90 gap."² Although this was originally applied to the perceived discrepancy in pharmaceutical spending on research and development in favour of diseases that affect the industrialized countries, one hears it applied more broadly today. When stated for surgeons, we imply that 10% of the world's population receives 90% of its surgical resources. Conversely, 90% of the population is limited to only 10% of these resources. The BRT recognizes that the greatest proportion of the global burden of surgical disease is borne by those who are least able to do so, who are disadvantaged by poverty and conflict, and it is committed to

providing a Canadian surgical forum in which to address the parameters of this global surgical reality.³

The BRT is the brainchild of Dr. Massey Beveridge, a surgeon in the Burn Unit of Sunnybrook & Women's College Health Sciences Centre in Toronto. Stimulated by his own international experience and by the rising interest and activity of Canadian surgeons in this arena, Dr. Beveridge initiated the Office for International Surgery at the University of Toronto.

In this review, we attempt to interweave current thinking in international health with reports and views presented at this conference.

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Gallie Day invitation

One of the plenary sessions of the BRT was jointly shared with the University of Toronto, Department of Surgery's annual Gallie Day. The department devoted both its Gordon V. Murray Lecture and its symposium to international surgery. This high profiling of international surgery underscores how it is becoming recognized as a valid discipline in its own right.

The lecture, "Congenital clubfoot deformity in Uganda," by Dr. Shafique Pirani, an orthopedic surgeon from the Royal Columbian Hospital, Vancouver, demonstrated how partnership, appropriate technology, cultural humility, meticulous training and modest funding can combine to effect a significant contribution to the well-being of a country. The project involves application of the Ponsetti method⁴ of sequential casting for the treatment of club foot, and Pirani's presentation convincingly showed the effectiveness of the method. In recognition of the marked manpower shortage of orthopedic surgeons in Uganda, Dr. Pirani has built the program around the training of orthopedic assistants in this method. By focusing on a nonoperative, effective and low-cost methodology, this program is poised to increase access to care and to be sustainable.

The symposium covered an array of topics. Dr. Lawrence Museru from Muhimbili University College of Health Sciences in Dar es Salaam outlined how a public-private mix of funding at a centre in Tanzania provided a great advantage over dependency on meagre public funds and emphasized that this had to be done with accountability, assuring that the added income was channelled back into the institution and its services. He stressed the importance of this last point and suggested that this was a key for the sustainability of similar institutions in much of the developing world. Dr. Chris Giannou, of the

International Committee of the Red Cross, Geneva, pointed out how war is associated with the disintegration of a country's health system and explained that the most important principles to teach in these adverse circumstances in order to establish a surgical service include basic first aid, management of septic wounds and understanding the difference between civilian trauma and war trauma. Dr. Jimmy James introduced the new College of Surgeons of East, Central and Southern Africa. As the Secretary-General of the College, headquartered in Arusha, Tanzania, he outlined its mandate of training, setting standards, credentialling and recruiting for its member countries, which include Ethiopia, Kenya, Malawi, Mozambique, Tanzania, Uganda, Zambia and Zimbabwe. Two levels of surgical certification (a Membership of the Surgical College after 2 years and a Fellowship after 4-5 years) are offered, meaning that trainees are now able to be credentialled within the region.

Major themes

The overall focus of the BRT in 2004 was "emerging directions." Presenters were from a variety of surgical backgrounds, came from 4 continents and represented a wealth of surgical experience. After highlighting some of the present realities of the global burden of surgical disease, emerging directions were grouped around 3 themes: the implications for surgical education, the role of specialized surgical services and the function of partnerships.

Surgical realities in low-income countries

More than 30 years ago the concept of epidemiologic transition in disease patterns for developing countries was introduced.⁵ In brief, developing communities move from a pattern of primarily communicable diseases to a pattern of primarily noncommunica-

ble diseases. The latter pattern includes maladies relating to industrialization, with growing numbers of death and morbidity from chronic diseases, cancer and injury. Many low-income countries are entering this transition period and are facing a double, or even triple, burden; that is, a persistently high communicable disease rate, a rising noncommunicable disease rate and a high rate of injury.

Frequent reference at the BRT was made to the issue of injury. Casualties from armed conflict, road accidents, work injury or domestic violence are all an increasing reality in developing countries.^{6,7} By its very nature, much of the management of trauma falls to the surgeon. Referring again to the 10/90 concept, it is estimated that 90% of the global burden of injury is borne by those countries that have only 10% of global surgical resources. Dr. Beveridge outlined the injury statistics, showing that there are about 5 million injury-related deaths annually and another 30 million people who are rendered disabled.⁸ From a total morbidity perspective, this means that it ranks equal to that of AIDS, malaria and tuberculosis combined. In addition, injury often goes underreported in poor countries, either because it is not processed or because death occurs outside of reporting agencies. Ms. Beth Stuebing, a student from Case Western Reserve School of Medicine in Cleveland, presented data gathered from the literature illustrating the value of injury prevention programs in places like Uganda and Ghana. She noted that surgeons have taken the leadership in these programs. Gradually, injury is being recognized as a major public health issue by governments and the World Health Organization (WHO).⁶

The increasing need for surgically trained personnel has to be placed into the current picture of unmet surgical need that already exists. Dr. Miliard Derbew, of the Faculty of Medicine, Addis Ababa, Ethiopia,

identified that as much as 75% of surgical need in that country is not met. He sounded an alarming note that recruitment of surgical trainees in Ethiopia is actually decreasing, and available trainee positions are not being filled. During the discussion period following his presentation, it was noted that high profile and highly funded international projects, although of good intent, have tended to siphon off clinicians, further depleting an already inadequate personnel resource. It may well be that the current trend in many regions away from comprehensive health policies in favour of more selective projects has paradoxically led to a loss of surgical manpower.

Physicians working in low-income countries face greater risks than their colleagues working in high-income countries. There is obvious personal risk when, for example, physicians are working in areas of war, given the present reality that civilians are becoming the primary casualties of war, not soldiers.⁹ Personal risk from blood-borne disease is another particular concern facing surgeons. Ms. Mercy Nkhalamba, from the Institute for Clinical Officers, Lilongwe, Malawi, discussed the attitudes of operating room staff to occupational hazards of blood-borne viruses where seroprevalence of HIV positivity in the population is over 20% and where antiretroviral prophylaxis in the government hospitals is not available. Anxiety was high among the staff, and this led to advocating for more protective clothing, face visors and double gloving. Malawi is by no means unique among low-income countries in this regard.

A worrisome suggestion frequently surfaced during this conference, namely a sense that the situation of unmet surgical need is not improving. Echoing this apprehension, Dr. Ron Lett of the Canadian Network for International Surgery (CNIS) (office Vancouver) presented 2 opposing projections, 1 pessimistic and 1 optimistic, and concluded that there exist

uneasy signs that we are drifting toward the former. Some of these signs include a widening economic gap between rich and poor countries, deterioration of public funding for health, minimal public-private integration, exclusion of disadvantaged people, rising conflict and lack of comprehensive health policies.

Implications for surgical education

Surgical management is based on decision-making and procedural skills that have developed over the millennia with input from diverse places and circumstances. In modern times, it has been moving toward increasing technology and subspecialization, most vividly seen in high-income countries (or regions). This trend, however, is widening the gap between the type of surgery practised in a high-income country with compartmentalization and complicated technologic support and the type of surgery practiced in a low-income country with emphasis on meeting basic surgical needs. Personnel and material resources of many countries are such that a compartmentalized, technologic structure of surgical care (and thus surgical education) is not feasible or even desirable.^{10,11} Outside high-income countries, therefore, a growing concept of "essential surgical care" training is evolving. Dr. Judith Atabo, from Queen's Medical Centre, Nottingham, UK, using examples from Cuba and India, gave voice to this concept and set out some of the components. She proposed that priorities should include trauma management, the surgical component of essential obstetric care and an awareness of a necessary materials infrastructure to support this essential surgical care. Supporting this view was a presentation from the Gondar College of Medical Sciences, Ethiopia, by Dr. Taye Hailu showing that the majority of abdominal emergencies faced by the general surgeon are obstetric and gynecologic conditions, a fact to which any surgical

clinician working in underserved areas can attest. Where personnel resources are few, surgical clinicians are required to respond to a wide variety of cases, and this has significant implications for any training program.¹²

If it is true that 90% of the world's population has little or no access to formally trained surgeons, it is also true that it will be decades before this situation improves significantly. On the other hand, it is possible to effectively put essential surgical skills into the hands of competent clinicians who are nonsurgeons (i.e., general practitioners, paramedic clinical officers).¹³⁻¹⁵ Intensive, highly structured, short, modular courses employing simulated models in the areas of essential skills in life-saving, hernia repair and trauma-team management were reported on by Drs. Sissay Befikadu, Gwen Hollaar and Ron Lett, respectively, all on endeavours conducted in East Africa and all done in conjunction with the CNIS. Dr. Befikadu, of Gondar College of Medical Sciences, Ethiopia, presented data on the Essential Surgical Skills (ESS) Course,¹⁵ evaluating the College's graduating interns' confidence level in caring for basic surgical emergencies when posted to a rural area. The majority of graduates were satisfied that the ESS Course, which was added to their curriculum, increased their confidence in carrying out life-saving procedures. Dr. Hollaar, from the University of Calgary, presented the results of a 5-day structured inguinal hernia training course¹⁶ conducted in Uganda for nonspecialist interns. She reported that this course was found to be safe for patients and a satisfactory means of training interns to do inguinal hernia repairs. She noted, however, that the competency and confidence from this structured course compared with the training that interns traditionally receive during their surgical rotation requires further evaluation. Dr. Lett addressed the third structured course: trauma team training.¹⁷ He pointed out that this 3-day

course is unique in that it registers teams, and not individuals, for the course. Practising the skills is a team effort, and solutions for practice exercises have to be worked out as a team. Because all 3 of these structured courses also involve the training of local instructors to run the courses, they have the added value of building local capacity within the teaching institutions.

The BRT included a research workshop with presenters from the University of Toronto who have international experience. The inclusion of this workshop emphasized that in addition to promoting surgical skill education, there is also a need to encourage scholarship within low-income countries so that clinicians there can critically appraise new health initiatives and conduct credible research themselves. Dr. Andrew Howard, of the Hospital for Sick Children, Toronto, stressed the importance of statistical significance in one's research and provided some practical advice on how to design and carry out better clinical studies. He stressed the need to be familiar with useful Internet resources that not only provide literature background but also help with study design and data analysis. Dr. Manuel Gomez, a research assistant at the Burn Centre of Sunnybrook & Women's College Health Sciences Centre, outlined the main characteristics of a health care database and showed how to design and customize it according to individual needs for data entry, analysis and reporting. Dr. Merrick Zwarenstein, of the Institute for Clinical and Evaluative Sciences and Knowledge Translation Program in the Faculty of Medicine, defended the use of randomized controlled trials for evaluating health care interventions and stressed that it is feasible to integrate them into daily practice, even in low-income countries. Finally, Dr. Alex Mihailovic, a surgical resident in the Department of Surgery, presented an overview on the current debates aris-

ing out of efforts to model such concepts as access to health services when studying utilization patterns, and she set out a conceptual framework for future study.

Role of specialized surgical services

From the foregoing sections, it is clear that, for areas where even basic surgery for common problems is severely limited, highly specialized and highly technical surgery will be rare indeed. The place given to specialized services needs careful planning and appropriate application to make it a meaningful contribution in this context. It is also clear from some of the presentations that the appropriate role of specialized surgical service depends on the level of economic development of each community.

Neurosurgery is one such example, and a session was devoted to a symposium on international neurosurgery. Dr. Richard Perrin, from the University of Toronto, outlined extensive international initiatives by neurosurgical organizations. Given the highly specialized nature of this discipline and the relatively few organizations involved, he pointed out the importance of integrating work among them to create synergy globally and avoid regional duplication. Dr. David Fairholm, from the University of British Columbia, with experience in Taiwan and Indonesia, stressed the need for all surgeons to become increasingly involved in undergraduate medical education as well as in resident training. He also endorsed appropriate contextual application of the specialty within the framework of medical training in the region, being aware of how it will impact the community. In an interesting account of "giving back to the country of one's roots," Dr. Abhijit Guha, of the Toronto Western and Sick Children's hospitals, related how one neurosurgical endeavour is beginning to break what he termed "the attitude of no-hope" regarding

neurosurgical problems in the densely populated area in and around Kolkata, east India. Rounding out the symposium, Dr. Mark Bernstein, also of the University of Toronto, related some impressions from his first experience as a volunteer on an international project in Indonesia under the auspices of the Foundation for International Education in Neurological Surgery. He outlined these impressions under advantages and disadvantages. Among the advantages, the creating of bridges with host staff most impressed him. Among the disadvantages, it was the ethical dilemmas that his being there raised for him that were most difficult.

A second featured area of specialized surgical care focused on burn and reconstructive surgery. Dr. Jimmy James presented a brief look at the situation in a number of East African countries where the majority of burns occur in those under 16 years of age. That the death rate is 90% for burns covering more than 40% of the body is one constraint in management. Other constraints include HIV/AIDS, poor nutrition, overcrowding on the wards and the lack of blood for transfusion. One of the most heart-wrenching presentations of the BRT was that of Dr. Shah Alam from the National Institute of Traumatology and Orthopedic Rehabilitation, Dhaka, Bangladesh, on intentional acid burns and their devastating consequences. He showed that in dealing with these unfortunate patients, not only competent surgical skill is required but also a commitment to rehabilitative assistance and humanitarian sponsorship. Dr. Beveridge, in relating the work of Rose Rehabilitative Centre in Cambodia, underscored another challenge, that of delayed presentation or failure to present because of the cultural notion of hopelessness. Dr. Hongbing Ma, of Hunan University, China, emphasizing that there will always be a need for specialized services throughout the world, reported on a series of cases of cicatricial esophageal strictures in infants as a re-

sult of chemical burns. All infants were treated by reconstruction with a retrosternal interposition of isoperistaltic transverse colon. There were no deaths, and results were encouraging with respect to swallowing and normal growth. Finally, Dr. Ron Zuker, from the Hospital for Sick Children, Toronto, focused on the educational perspectives of one reconstructive surgery program. In describing Operation Smile, he explained its bilateral training strategy, which includes on-site mentoring in low-income countries, travel scholarships for local surgeons and funding for ongoing refresher courses.

A third featured area was orthopedics. Presentations focused on the management challenges of common orthopedic conditions in low-income countries. Dr. Lawrence Museru described the challenge of chronic osteomyelitis where the high incidence relates both to misdiagnosed or undertreated hematogenous osteomyelitis and to the increase of complicated open fractures from road traffic incidents. He stressed the need for accurate diagnosis and adequate early treatment of both these conditions if the rate of chronic disease is to be reduced. This is no small challenge, given the constraining conditions in many countries. Dr. Steve Mannion, of Malawi Against Physical Disability (MAP), Lilongwe, Malawi, described the growing rate of musculoskeletal tuberculosis consequent to HIV/AIDS. Because of severe resource constraints, MAP has adopted a policy of syndromic diagnosis of musculoskeletal tuberculosis, and careful follow-up has shown that this is a successful means of management. As a result, MAP intends to continue this approach, reserving biopsy for atypical cases. Dr. Charles Sorbie, of the Société Internationale de Chirurgie Orthopédique et de Traumatologie, based in Belgium, described how the Society has channelled its role in global service to improving the education and skills of surgeons who deal with road accident

casualties. This is done through the establishment of local education centres, international conferences and Internet resources.

Other presentations focusing on specialized services included a presentation by Dr. John Wachira from Nairobi, Kenya, who works with the African Medical and Research Foundation. This foundation has set up mobile medical services that airlift medical teams into remote communities to provide consultation and treatment where services would otherwise not be available. Some 85 rural hospitals in 7 countries of eastern Africa are thus served. This program is seen as a medium-term solution because the high cost of air travel makes it unsustainable over the long term. Dr. Fikre Abate, of Yekatit 12 Hospital, Addis Ababa, Ethiopia, addressed the issue of patients' understanding of laboratory investigations. From a cross-sectional study involving patient interviews, he found that a substantial number of patients misinterpreted the purpose of routine laboratory examinations. In this era of HIV and with seropositive prevalence being high in much of sub-Saharan Africa, such misunderstanding can cause unnecessary worry or false assurance. He stressed the need for better communication between physician and patient regarding the purpose and results of laboratory tests.

Function of partnerships

If the world is a global village then partnerships for surgical care make a great deal of sense. The greatest difference in treating surgical diseases around the globe is the disparity of available human and material resources and the cultural context in which they occur. Partnerships that promote a sharing of resources and capture an environment of cross-cultural humility have 2 essential ingredients for making a significant difference in care and being mutually beneficial to all partners.

Many of the presentations cited in

this review are based on work in which partnerships are an integral part of the infrastructure. Partners may be service providers, academic institutions, professional associations or international donors. They may be government affiliated or nongovernment organizations. They may be local, national or international. To be effective, the objective of each partner must be the improvement of surgical care that is appropriate, sustainable, accessible and available to all.

Both interest and experience of Canadian surgeons in international endeavours are on the rise.^{18,19} Dr. Brian Ostrow of Guelph, Ont., related his insights gleaned from a 6-week project in Uganda and outlined the challenges for any would-be international surgeon. Being prepared for the type of service and teaching required is of prime importance. Dr. Peter Chu, of Sunnybrook & Women's Health Sciences Centre, Toronto, described how he periodically takes Canadian surgical residents with him on an international project in Niger, and he outlined its educational value. He suggested helpful guidelines for surgeons who might like to explore this type of mentorship: have personal experience with the project yourself before attempting to take along residents; ensure that your colleagues in Canada support the absence of both you and the resident(s); make certain that you sufficiently know the resident(s) who will accompany you; be prepared for considerable on-site coaching; and build in specific post-project debriefing.

Summary

The BRT, an annual conference on international surgery, is worthy of interest and support by surgeons, residents and students who are concerned about international health. The focus of the 2004 conference was "emerging directions," and the major themes and views expressed at the conference are summarized as follows:

- International surgery is gaining increasing recognition as a valid discipline among surgeons. Like any discipline, it has its own unique characteristics, including the provision of surgical care in the face of markedly limited human and material resources and sociopolitical impediments.
- There is a disconcerting sense that the 10/90 gap, as applied to the global surgical burden and surgical resources, is worsening. Canadian surgeons, as a professional and privileged collective, must give more leadership to help reverse this trend.
- Casualties of trauma, arising from open warfare, internal armed conflict, road traffic incidents and domestic violence, are disproportionately increasing in those countries least able to provide the surgical care required. The morbidity suffered by such casualties is on a scale comparable to that of HIV/AIDS, malaria and tuberculosis combined and yet receives only a fraction of the international profile and funding. This requires advocacy.
- Some developing countries, in dealing with clinical surgery manpower needs, are facing the double problem of decreasing recruitment and loss of clinicians to more lucrative “selective” health care, donor-supported projects. Surgical leadership is needed to assure a more comprehensive and integrated planning strategy.
- The concept of broad-based “essential surgical care” needs to be incorporated into surgical training programs if populations outside major urban centres are going to be served.
- With the marked shortage of certified surgeons throughout the developing world being a reality that will persist for decades to come, training programs that put essential surgical skills into the armamentarium of nonsurgical clinicians

such as general practitioners or paramedic clinical officers are valuable. Such programs often utilize intensive, highly structured, short, hands-on courses.

- Subspecialized surgical services such as neurosurgery, burn and reconstructive surgery and mobile specialist teams will only be available in some regions with the aid of collaborative partnerships. Such approaches are valid medium-term solutions and need to be combined with strategies evolving toward regional sustainability.
- It is important to put practical research skills and tools into the hands of surgical colleagues who live and work in the developing world. Articles need to be published from countries where the burden of surgical disease and often surgical experience is greatest.
- Involvement of Canadian surgeons in international health care is a personally rewarding and meaningful experience. Being well oriented before involvement is a requisite. Extending this involvement to Canadian surgical residents in well-planned, supervised and purposeful projects that benefit the population is a potential worth pursuing.

In conclusion, brief review of a valuable conference puts surgical reality in a global perspective. Further details on the BRT and on contact coordinates of presenters can be obtained from the Office of International Surgery (www.utoronto.ca/ois).

Competing interests: None declared.

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