**Surgery in South Asia**

<table>
<thead>
<tr>
<th>Journal:</th>
<th>BMJ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manuscript ID</td>
<td>BMJ.2016.036813.R1</td>
</tr>
<tr>
<td>Article Type:</td>
<td>Analysis</td>
</tr>
<tr>
<td>BMJ Journal:</td>
<td>BMJ</td>
</tr>
<tr>
<td>Date Submitted by the Author:</td>
<td>08-Dec-2016</td>
</tr>
<tr>
<td>Complete List of Authors:</td>
<td>Nagral, Sanjay; jaslok hospital &amp; research centre, GI surgery Hussain, Maharra; Mediclinic Welcare Hospital, General Surgery; Same as Primary, Same as Primary Nayeem, Sarder; Japan Bangladesh Friendship Hospital (JBFH) Dias, Ranjan; Lady Ridgeway Hospital for Children Enam, Ather; The Aga Khan University, Surgery Nundy, Samiran; Sir Ganga Ram Hospital, Humanities Languages and Social Science</td>
</tr>
<tr>
<td>Keywords:</td>
<td></td>
</tr>
</tbody>
</table>
Surgery in South Asia

In spite of increased specialization & technology, surgical care in the world’s most populous region continues to face a serious challenge of access and quality.

Introduction

Although the region has a shared common history, South Asia is remarkable for its diversity. An attempt to identify the common threads in the practice of surgery in the region is challenging because of the wide variations in terrain, culture & development status. Parts of the region are devastated by prolonged conflict. However, an analysis of the forces driving transformation of surgical care in the world’s most populous and poor subcontinent, is important as an indicator of the disturbing fault lines of contemporary global health delivery.

Surgical disorders represent a significant proportion of the burden of diseases associated with poverty. Surgery is considered a cost-effective method of restoring sick and injured people to health and economic productivity.1 The Lancet commission for Global Surgery report ‘Global Surgery 2030’ highlights the fact that surgical diseases constitute 30% of the burden of disease & are a leading cause of impoverishment and catastrophic expenditure.2 It lists South Asia as the region with the highest deficit of estimated annual surgical unmet need in the world. The entire range of cultural, financial and structural barriers that impede access to surgical care in Low & Middle income countries play out in their fullest in this part of the world.3 Reforming surgical care thus needs a multipronged approach and is a priority area if the countries of the region are serious about overall improvement in health care and moving closer to the ambitious sustainable development goals set for 2030 by the United Nations.

Background

In the postcolonial era surgery was practiced in most of South Asia in government hospitals or small nursing homes. It was a personalized encounter between surgeons with huge reputations & patients who had implicit trust in them. The British systems of medical education, training and practice were inherited. However unlike the universal care model of the National Health Service which made surgery accessible to everyone, surgical care in South Asia, with the exception of Sri Lanka, has become inordinately expensive and out of the reach of the majority of the population.4

This reflects changes in the region’s political economy with a retreat of the underfunded and inefficient public sector and increasing dominance of the for profit private sector, which has led to a proliferation of corporate hospitals & high end expensive technology.5

Surgical disease in South Asia is marked by delayed presentation, malnutrition & co existing disease. Health care is delivered especially in rural areas by practitioners of traditional medical systems who are disparagingly known as ‘quacks’ because they lack conventional medical
qualifications but are, nevertheless, low cost, accessible & trainable. Patients seek their remedies even for surgical conditions. Though attempts have been made to study their efficacy, this area merits study for some of them could offer locally available & low cost solutions like the popular Ayurvedic treatment in India for fistula in ano.

Transformation of surgical practice

The last few years have witnessed several distinct trends in the expansion of surgery in South Asia. The complexity and scope of surgical procedures has increased. Except in rural areas, surgery is moving from small nursing homes to big hospitals. Large private sector hospitals with high-tech gadgetry have captured the imagination of surgeons as well as the emerging middle class. Massive investments in surgical equipment have become a major part of health care budgets. Minimally invasive surgery has become popular amongst surgeons as well as patients.

Specialty surgery now dominates & has grown partly at the expense of basic surgery. Young surgeons prefer to specialize in a subspecialty. For example general surgeons often practice as ‘laparoscopic’ or ‘gastrointestinal’ specialists. In addition to traditional specialties new areas like oncosurgery, joint replacement, pediatric cardiac surgery & vitreoretinal surgery have emerged. With a changing culture & lifestyle, areas like cosmetic surgery, bariatric surgery & arthroscopic surgery have witnessed major growth.

In the burgeoning private sector, large for profit private hospital chains have grown which project what they term ‘world class’ healthcare. Some of them have established satellite centres across the region. They attract patients from overseas, especially the Middle East, Africa and occasionally also from the West as the costs of procedures is far lesser than that in the West. Surgery in areas like joint replacement, cardiac surgery & transplantation forms a substantial chunk of the medical tourism industry. Individual surgeons have also turned medical entrepreneurs & have set up enormous health care facilities with private capital.

For a part of the populace, the spread of surgical facilities into smaller cities & towns has meant easier access to care. For those able to afford it, surgery now offers new hope for diseases that till recently had a dismal prognosis. For example advanced cancer surgery, transplantation for organ failure & functional brain surgery now offer hope. This has, however, resulted in high costs & with a majority of the population paying out of pocket, surgery is one of the major contributors to catastrophic health care expenditure.

Regional deficits

Surgical care reflects the inequity that is characteristic of healthcare in the region. The contrast between resource constrained care for the poor in public hospitals especially in rural areas and the sophisticated technology intensive care for the rich in private hospitals continues to widen. Also, advances in technology & specialization have not been matched by a corresponding
increase in the organization of surgical services. A study from India showed that community centres which are supposed to serve as a first-level referral hospital have severe resource shortages: in 2008, 35% did not have an operating room, 63% did not have a surgeon, 76% did not have an anesthetist, and none met the criteria for a well-resourced hospital.

People living in remote areas continue to get delayed care even for routine emergencies like bowel perforation leading to a huge number of preventable deaths. In addition, on site care, organised referral and transport are almost absent and often a matter of individual initiative and contacts. In a region experiencing an epidemic of road traffic accidents, this reflects in tragic consequences with unacceptably high mortality. Expansion of specialisation at the expense of critical areas like trauma surgery is also because it is not lucrative or glamorous for the immediate caregivers.

Public hospitals, while continuing to serve the poor, are faced with large numbers of patients, long waiting lists, poor resources & unhygienic conditions. Thus the private sector though expensive is perceived to be friendly & efficient. Though it has a strong public sector providing 90% of inpatient care, even Sri Lanka now has a growing private sector targeted at providing services to the affluent strata of society.

Countries of the region do not have a comprehensive national database of surgical procedures with a serious deficit of information on outcomes. Thus whilst individual units may do so, there is limited progress towards accrual of large-scale data, audit & analysis. Currently, neither the regulatory system nor the consumer demands outcome data before accessing and funding surgical care. Trends emerging from surgical oncology data indicate that survival rates of patients with cancer in the region are poor compared to developed countries. A large majority of cancer treatment is still offered without multidisciplinary consultation.

The results and cost effectiveness of complex surgical procedures are not available in the public domain for policy analysis. This is especially relevant to advanced resource intensive procedures. The limited data that is available is often subject to reporting bias and is skewed by a heavy domination by studies from surgical missions and non-government charitable facilities that tend to understate costs of on-going services. The emerging global focus on surgical safety, enhanced recovery & quality of life issues is currently low on the agenda. Thanks to uncontrolled use of antibiotics, South Asian countries are a high prevalence area for multi-drug resistant (MDR) bacteria with infection rates with MDR being one of the highest in the world.

All this reflects in high rates of serious postoperative infections.

Academic departments are still largely in public hospitals, although training, especially in sub specialities, is increasingly being offered in private hospitals. The majority of surgeons train in public institutions but finally move to the private sector. The number of surgical departments has increased, partly due to proliferation of private medical colleges. However there is as yet no robust mechanism for uniformity in training or re-training of surgeons. Although it is mandatory for surgical postgraduates to do research for their thesis, very few of these are published & impact surgical practice.
Bridging the gaps

The need for integration of surgical services into a Universal Health Care plan has been espoused by the Lancet Commission which sets an ambitious global target of providing 80% coverage to essential surgical and anesthesia services and 100% protection against catastrophic expenditure from out-of-pocket expenses by 2030. In South Asia, this will necessitate a paradigm shift towards prioritizing universal health care. This is a special challenge in a region where healthcare is relegated to the fringe of the political agenda, health budgets are low and health is not yet considered as a right.

The penetration of individual health insurance, though gradually increasing, is low. It is beginning to regulate costs by promoting surgical packages. In India, in the last few years governments have launched major publicly financed health insurance schemes focused on surgical treatment. The Arogyasri Scheme in Andhra Pradesh and the Jeevandayee Arogya Yojana in Maharashtra provide free surgical cover to population with low incomes. They offer pre decided funding for surgical procedures in both the private & public sector. Though this has improved surgical coverage it has been documented to lead to a spate of unindicated procedures.

With the resource-constrained background, the challenge for the surgical community in South Asia is to practice evidence based modern surgery whilst containing costs & ensuring access. One useful strategy is to create locally appropriate & cost effective treatment algorithms. This could involve innovations like reuse of costly disposables and usage of local cheap alternatives like mosquito net instead of commercially available synthetic meshes for hernia repairs.

The lack of a trained workforce impacts on surgical care more than other areas. Expansion of the surgical workforce by creating cadres of trained support staff, has been shown to improve care in limited resource settings. In any case health care workers without formal medical education provide up to 70% primary care in rural India and Bangladesh. Training these providers to overcome the acute shortage of skilled personnel could be one way forward.

Surgical ‘camps’ wherein large numbers of patients in remote areas, undergo surgeries at minimal or no cost in makeshift set-ups by teams travelling from urban areas have been a feature of surgical practice in South Asia. This model has been extensively used for cataract surgery as well as sterilization procedures for population control. However complications associated with performing operations in this manner have been a problem.

Philanthropic organizations are a unique resource for surgical care in South Asia and partly bridge the gap in surgical care not covered by state agencies or private players. These include large scale provider networks run by national non-government organisations such as Building Resources Across Communities (BRAC) in Bangladesh, individual free-care provider trusts, charitable hospitals run by trusts, for-profit multispecialty hospitals with a percentage of mixed-model subsidized beds, specialty based medical missions comprising surgical teams from higher income countries and faith-based providers including those affiliated to diocesan organisations and Muslim zakat donation-based boards as in Pakistan. Ambulance services in the region...
are also often run by charitable organisations like the Edhi Foundation in Pakistan. Such initiatives though laudable cannot be a substantial replacement for a robust, structured publicly funded system of care.

International & regional collaboration

Historically, surgeons from South Asia have travelled to the developed world for training and surgical teams from the West have helped set up units in the region. The surgical Royal Colleges from the UK have strong academic ties with local bodies in South Asia. In Sri Lanka it is mandatory for surgeons in training to spend at least a year abroad and local surgical exams have an overseas examiner. Expanding and strengthening international collaboration could be one way to improve the quality of surgical training in South Asia.

Global humanitarian organizations like Doctors without Borders have provided surgical facilities in conflict zones like Afghanistan. International organisations have also undertaken surgical relief work during natural disasters. On a different note, private organisations including Hospital chains from the West have recently established operations in the region mainly to expand their market.

Regional cooperation amongst the surgical fraternity is currently largely informal & mainly in the form of participation in meetings or workshops. Surgeons from Bangladesh and Sri Lanka travel to India for training in areas like laparoscopic surgery.

There is also a small number of patients who travel between the subcontinents countries seeking advanced surgical care. However this is restricted to the well to do sections who can manage travel costs & visas. Unfortunately at times this is also for bypassing local laws in order to undergo unrelated transplantation from paid donors.

The National Surgical Associations of the region, which have traditionally looked towards the West, need to work more in tandem with each other to explore areas of mutual cooperation. They could identify common problems and create joint platforms for solidarity and action. For example, the model of the College of Surgeons of Sri Lanka which plays an effective advocacy role at the Ministry of Health can be scaled up to a regional level. A South Asian Association for Regional Cooperation (SAARC) Surgical Care society, was established in the 1996 & has been organising conferences in various countries of the region. Bodies like this need to take a lead in regional cooperation.

The way forward

The progress of surgery in South Asia is thus a mixed bag of increase in complex procedures & technology but limited advance in organized, accessible care. Policy makers have traditionally focused on areas like maternal & child health, infectious disease & recently the emerging threat of non-communicable disease. The surgical community needs to highlight the imbalances in the current surgical delivery as an area for state intervention. This involves the difficult task of
bringing a public health perspective to surgical care, which is currently dominated by technique. It also means shifting attention to the global focus on outcomes & safety, independent of the technology focused narrative of market forces like the equipment & hospital industry.

Needless to say, surgical care cannot evolve independent of the overall direction of health care in the region. However with its high stakes and visibility it has the potential to contribute to course correction in policy. In South Asian culture, surgeons are prominent citizens & their associations have significant influence with the state. They can utilise this clout to impact policy changes towards the promotion of access & quality. A unified voice from regional surgical societies could help this effort. Such a collaborative campaign can also help ease the political tensions that plague the area. We hope that the surgical community of the region recognizes and takes up this challenge so that the benefits of the extraordinary global advances in the science of surgery reach those who need them the most, the ordinary people of South Asia.

Key Messages

The global trend towards increased specialization and technology is reflected in surgical practice in South Asia.

Though surgery has advanced in numbers & specialization it suffers from deficits of access & quality.

Areas like emergency care especially the emerging threat of trauma are not receiving the attention they deserve.

Strategies like using local low cost technology and task sharing may be useful to improve access

The surgical community through its associations & regional collaborations could play a role in influencing policy change

The recognition of surgical disease as a public health problem needing increased funding and policy prioritization is critical to South Asia.
References


25. Devadasan N, Criel B, Van Damme W, Ranson K, Van der Stuif P. Indian community health insurance schemes provide partial protection against catastrophic expenditure. BMC Health Serv Res. 2007; 7:43


30. Pulla P. Why are women dying in India’s sterilization camps? BMJ. 2014 Dec 8; 349:g7509. Available from doi: 10.1136/bmj.g7509


Length
2537 words

Contributors and Sources
Nagral S, Hussain M, Nayeem S.A, Dias R, Enam S.A, Nundy S

Nagral S, Senior Consultant, Department of Surgical Gastroenterology, Jaslok Hospital & Research Centre, Mumbai, India

Hussain M, Department of Surgery, Mediclinic Welcare Hospital, Dubai, U.A.E.

Nayeem SA, Chief Laparoscopic Surgeon and Chairman, Japan Bangladesh Friendship Hospital (JBFH), Dhaka, Bangla Desh

Dias R, Senior Lecturer in Paediatric Surgery, University of Colombo, Consultant Paediatric Surgeon, Lady Ridgeway Hospital for Children, Colombo, Sri Lanka.

Enam SA, Professor of Neurosurgery, Chair, Department of Surgery, The Aga Khan University, Karachi, Pakistan

Nundy S, Department of Surgical Gastroenterology and Liver Transplantation, Sir Ganga Ram Hospital, New Delhi, India

https://mc.manuscriptcentral.com/bmj
Corresponding author; Nagral S

Conflict of Interest

All the authors hereby declare that there are no competing interests nor any conflict of interest.

License

“The Corresponding Author has the right to grant on behalf of all authors and does grant on behalf of all authors, an exclusive licence (or non exclusive for government employees) on a worldwide basis to the BMJ Publishing Group Ltd ("BMJ"), and its Licensees to permit this article (if accepted) to be published in The BMJ's editions and any other BMJ products and to exploit all subsidiary rights, as set out in our licence.”