

START

SELF AND DISTANCE LEARNING IN SURGERY: A COLLABORATIVE VENTURE

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First- a view of my town, in a beautiful country!



Good Health is a prerequisite for Community and Social development, and even Surgery is a part of this.

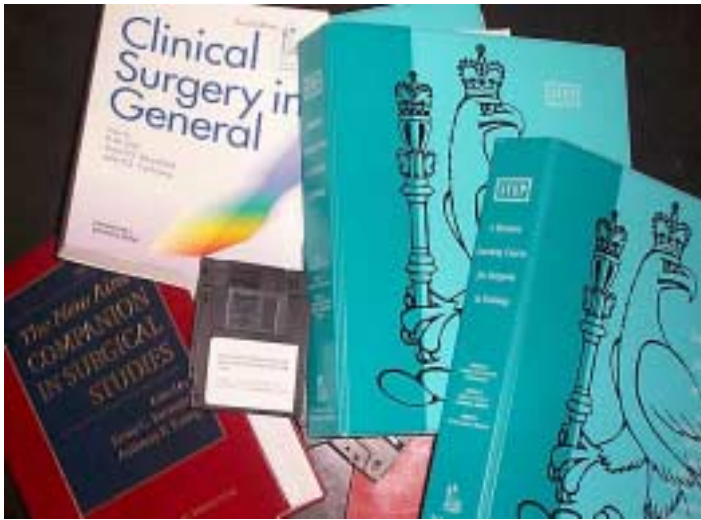
There are huge variations in life styles and resources in the Commonwealth.



The surgical treatment of patients in poorer societies within and outside the Commonwealth is bedeviled by problems of access and quality. The solution to this needs better treatment by available surgical staff, and surgical treatment by trained non-surgeons. For both improved theory and skills training of these groups, the choice lies between the use of face to face or distance/ 'self learning' learning for theory, and apprenticeship or classroom (with simulation) situations. 'Self learning' for theory, and classroom simulation materials which can be sent around and help develop training situations away from major centers are advantageous, as the time involved for centralized training is often not available. The use of these methods also helps even out the adverse effects inadequate library and teacher facilities available in different and particularly less urban hospitals. The Commonwealth of Learning (COL) in collaboration with the Royal College of Surgeons of England (RCS) produced materials to help in both situations.

The English RCS has a Distance Self learning course developed for English postgraduates (Surgeons In Training Education Programme- STEP). This was developed partly to deal with variable facilities

even within England! The COL brought this up to date with references to review and similar authoritative articles, and with page references to the new editions of recommended textbooks.



The picture shows the manuals and tapes, and the floppy disc book prepared for the updates etc.

Examples of reference and material updates

(p.4 C96 c3 p49-51 C99 c2 p49-50, 58. team - no info.), p.7 C96 c2 p7-20; C99 c1 p3-18), (p.10 C96 c2 p15-19 and c3 p40-44, 47-49; C99 c1 p13 -18 and c2 p36-42, 47-49), p.13 C96 c3 p32-37 C99 c2 p31-37) (see King et al Ch 50, 51, 52)

Mere knowledge about the treatment of trauma is not enough. There is an ethical imperative for surgeons to be involved in the prevention of road and industrial accidents - and to help to activate lethargic officialdom in giving time and money to prevention. This is often difficult, as it is the poor that are mainly affected by at least, bad working conditions. An even more difficult dimension is the matter of inter- and intra - national armed conflict and the terrible trauma (physical and mental) it produces. Do surgeons have a political sensitivity and role in their armamentarium?

Neglected trauma and burns are a huge problem. The number of patients who must die in the very acute phase due to a lack of treatment, or adequate treatment is vast. The numbers who die in the sub-acute phase after delay in treatment is probably larger. Good figures do not exist. Most victims are either children or young adults; trauma being killer number one in most countries between the ages of ten and 40 years. The solution to this must be a combination of primary and secondary prevention. Surgeons are usually not so bothered about trauma as it is less glamorous than say surgery for congenital anomalies, open-heart surgery, or transplants.

The late sequelae of delayed treatment include scarring and other deformities, and present a vast social and surgical problem that is not dealt with in any meaningful way. More specifically for bone and joint deformities the use of osteotomy, bone grafting, and joint replacement with good soft tissue correction are available at hospitals beyond the physical or financial reach of many patients. The use of teams of surgeons visiting places where there are collections of patients is the best method currently available to help treat these patients.

Transport of trauma patients is a huge problem. Immediate and adequate payment to private individuals who bring patients in may be the cheapest solution to the transport difficulty in the poorer countries, given the fact that the commonest cause of death of the young (5-35 years) is trauma, and that delay is an important factor. Education to enable these patients to be kept unfed and semi prone without torsion on the neck from the time of the injury at the site, while being placed in a vehicle or carrier, during transport,

while being unloaded into the hospital trolley, on the trolley, while going into the casualty examination centre, and at every stage thereafter, is essential and neglected. Aspiration of force fed fluids, vomit, or blood, is the commonest cause of death between the incident and the operating theatre or ward.

A different facet is that data collection in trauma patients, particularly in those involved in non-accidental injury, must be complete enough to allow assessment of severity (e.g., grievous, non grievous, life-threatening etc.) in a court of law. The location, direction, nature and depth of all external injuries must be recorded in enough detail to estimate their age, and cause. Injuries noted at operation must similarly accurately be described. The exact legal definitions vary from country to country, but in many jurisdictions it is the junior and senior surgical staff who have to give evidence, not a Forensic specialist.

If a trauma team is formed (surgeons, anaesthetists, nursing staff, and other paramedical staff) this helps in the management of mass trauma in particular. Trauma management in any event is a team effort - and the more used the team is to working together swiftly, the better for the patient.

Effective Health Care (1996) 2;5

Health promotion intervention for the prevention of accidents in younger people. The use of child motor cycle and cycle helmets and child car seat restraints can reduce serious injury to children involved in road traffic accidents. Urban road safety measures such as the provision of crossing patrollers, measures to redistribute traffic and improve the safety of individual roads can reduce the rate and severity of childhood accidents. Pavements reduce the risk of pedestrian injury. Targeting of households at higher risk combined with home visits, education and the free distribution of devices is likely to make the most impact. Educational programmes by themselves appear to have little effect. However, a number of community programmes that involve local participation and use a broad range of interventions have been effective in reducing childhood injuries from a wide variety of causes.

(Comment: - The surgeons of each country need to define a high risk household, and also the kind of action required to improve pedestrian safety. TRAUMA IS THE MAJOR KILLER OF CHILDREN AND YOUNG BETWEEN THE AGES OF FIVE AND FORTY IN MANY COUNTRIES.)

Effective health care 1996 volume 2 number 4 Preventing Falls and Subsequent Injury in Older People.

The risk of falls increases with age. Falls in older people often result in fractures. There is some evidence to suggest that exercise, such as balance training, is effective in reducing the risk of falls in older people. Access to such interventions should be offered and ways of promoting uptake should be investigated. New programmes should be part of controlled evaluations. Home visits and surveillance to assess and where appropriate, modify environmental and personal risk factors can be effective in reducing falls. This can be carried out by health workers or trained volunteers. Soft hip protector pads have been shown to dramatically reduce hip fractures in frail older people in residential care. Their effect and acceptability in the community needs further research. High dose Vitamin D supplementation with or without calcium appears to be effective in reducing fractures. Research is needed to identify the most cost-effective strategy.

(Comment - as the populations in the developing world are increasing, this will become an increasingly important topic. The value of HRT in postmenopausal women, as against or with sunlight, calcium, exercise, and a good diet - is also a matter that surgeons need to address as regards fracture prevention. Whether the elderly will be with family, or in care, also has to be pondered.)

Morikawa-M (1998) The changing role of civilian surgeons in conflicts: a meta-analysis of epidemiological data. Med-Confl-Surviv.; 14; 237-242.

The high rates of critical part trauma in studies of recent conflicts show the increasing importance of trauma management skills by civilian surgeons.

Stipancic-I; Zarkovic-N (1997)[The effect of trauma surgery on immune system function]

Severe accidental trauma often causes an immunosuppression accompanied by infection and sepsis which may be fatal. Furthermore, elective surgery could also cause dysfunction of the immune system. While physiopathological mechanisms of such post-traumatic immune system dysfunctions are still not sufficiently understood, the scope of research interest is focused particularly on the cytokine network and, recently, on the "non-specific" mediators of oxidative stress. In this article some novel findings about the dysfunction of the immune system caused by trauma, including surgical injury, are briefly summarized, and the involvement of oxidative stress in these changes is emphasized.

The original course manuals and tapes could thus be used. In addition entirely new sections and supplements were written that are relevant to countries where patients present late or facilities are very basic.

Example

| | |
|--|-------------------------------------|
| MODULE 0 - A DIFFERENT ORIENTATION | Error! Bookmark not defined. |
| 0.1 Introductory remarks | Error! Bookmark not defined. |
| 0.2 Problems of poor facilities, late presentation, poor access etc; these comments are applicable to each section of the course | Error! Bookmark not defined. |
| 0.2.1 Availability of staff competent to diagnose and operate | Error! Bookmark not defined. |
| 0.2.2 Resources of patients and the community | Error! Bookmark not defined. |
| 0.3. Education and Attitudes | Error! Bookmark not defined. |
| 0.3.1. General | Error! Bookmark not defined. |
| 0.3.2. Pre- and Post- operative communication..... | Error! Bookmark not defined. |
| 0.4 Specially vulnerable groups in developing economies | Error! Bookmark not defined. |
| 0.4.1 The old | Error! Bookmark not defined. |
| 0.4.2 Spouses and children | Error! Bookmark not defined. |
| 0.4.3 The very young: general comments and specific problems... | Error! Bookmark not defined. |
| 0.5 Special attitudes from the surgeon | Error! Bookmark not defined. |
| 0.5.1 Pragmatism..... | Error! Bookmark not defined. |
| 0.5.2 Staging | Error! Bookmark not defined. |
| 0.5.3 A comprehensive approach | Error! Bookmark not defined. |
| 0.5.4 Prevention..... | Error! Bookmark not defined. |
| 0.5.5 Continuing Education | Error! Bookmark not defined. |
| 0.6 Specific groups of problems | Error! Bookmark not defined. |
| 0.6.1 Anaesthesia | Error! Bookmark not defined. |
| 0.6.2 Acute conditions..... | Error! Bookmark not defined. |
| 0.6.3 Neoplasms..... | Error! Bookmark not defined. |
| 0.6.4 Non-acute surgical conditions | Error! Bookmark not defined. |
| 0.7 Common lacunae | Error! Bookmark not defined. |
| 0.7.1 Pain..... | Error! Bookmark not defined. |
| 0.7.2 Intercurrent infection..... | Error! Bookmark not defined. |
| 0.7.3 Replacement of fluid..... | Error! Bookmark not defined. |
| 0.7.4 Nutrition..... | Error! Bookmark not defined. |
| 0.7.5 Negative criticism | Error! Bookmark not defined. |
| | |
| Unit 1 | Error! Bookmark not defined. |
| Unusual Colonic and Rectal problems..... | Error! Bookmark not defined. |
| Amoebiasis..... | Error! Bookmark not defined. |
| Lymphogranuloma venereum (Chlamydia trachomatis) | Error! Bookmark not defined. |
| Schistosomiasis..... | Error! Bookmark not defined. |
| Whipworms (Trichiurus) | Error! Bookmark not defined. |
| Threadworms | Error! Bookmark not defined. |

Other new sections deal with the diseases seen in the developing countries, also adding new references with a summary.

Example

3.1.1 *The Colon, rectum and anus***Error! Bookmark not defined.**
3.2 UNIT 2

Gooszen AW, Geelkerken RH, Hermans J, Lagaay MB, Gooszen HG. (1998) Temporary decompression after colorectal surgery: randomized comparison of loop ileostomy and loop colostomy. Br J Surg 85: 76-79.

Transverse loop colostomy was safer in this study including 76 patients; however both methods had complications, both at construction and subsequent closure.

Merad F, Hay J-M, Fingerhut A, Yahchouchi E, Laborde Y, Pelissier E et al. (1999) Is prophylactic pelvic drainage useful after elective rectal or anal anastomosis? : A multicenter controlled randomised trial. Surgery 125: 529-535.

Some 494 patients were randomized; there was no significant difference in anastomotic leak rate (total 6.3 per cent) or death (3.2 per cent drain versus 4 per cent no drain).

Merad F, Yahchouchi E, Hay J-M, Fingerhut A, Laborde Y, Langlois-Zantain O. (1998) Prophylactic abdominal drainage after elective colonic resection and suprapromontary anastomosis: A multicenter study controlled by randomization. Arch Surg 133: 309-315.

In this study of 319 patients, drainage did not reduce the risk of complications such as anastomotic leakage - 9% vs 8% with no drain.

1. prevent neuropathy) at 5 mgm/kg/day; and
2. Pyrazinamide given at 20-30 mgm/kg/day. Ethambutol is a bacteriostatic drug given at a dose of 15-20 mgm/kg/day - optic neuritis being a side effect. The use of combinations of drugs has reduced the time for therapy to 6-8 months from 2 years. The favoured regimes are rifampicin and INH for 6 - 8 months with either streptomycin or PZA for the first 2 months as well or ethambutol and PZA for the first four months and then the other two alone for a further four months.

Hydatid disease

This is an infestation by the parasite - *Echinococcus granulosus* whose usual hosts are dogs and sheep. It is a tapeworm. It is frequent in the Middle East, South and East Asia and South America. Australia has virtually eradicated it. Humans ingest the eggs from the faeces of sheep and the cysts - the larval form develops in the lungs, liver, spleen, and other organs. In the lung the condition may be found incidentally, or the patient may have dyspnoea, haemoptysis, or may cough up the lining of the cysts - a grape-skin like membrane and watery fluid. Secondary infection can occur in a cyst. Diagnosis is by chest X-ray that may show the cyst with or without a crescent of air. Infection or collapse can modify the appearance. The most unusual presentation on X-ray is a 'water lily' appearance produced when the collapsed laminated cyst wall floats on the intrapleural fluid. Confirmation is by the Casoni test or a complement fixation test. Treatment is surgical by removal of the cysts without rupturing them, or even lobectomy.

Actinomycosis

This disease affects the lungs in about 10% of cases and is usually the result of downward spread from the jaws or upward spread from the abdomen. The lower lobe ends up being full of cavities and fibrous tissue. Differentiation from other causes of lower lobe sepsis may be difficult.

All this was published as a floppy disc book (shown in the previous picture with the original manuals), to facilitate distribution and to reduce costs, entitled 'Into the Commonwealth and Millennium with STEP'.

The book is indexed to facilitate its use with the original manuals.

Example

1. **MODULE 1 - SURGICAL DIAGNOSIS**.....Error! Bookmark not defined.
 - 1.1 Unit 1**Error! Bookmark not defined.**
 - Lymph Nodes**Error! Bookmark not defined.**
 - 1.1.1 *Clinical History and Examination***Error! Bookmark not defined.**
 - 1.1.2 *Benign and Malignant skin conditions*.....**Error! Bookmark not defined.**
 - 1.1.3 *Gastric cancer*.....**Error! Bookmark not defined.**
 - 1.2 Unit 2**Error! Bookmark not defined.**
 - 1.2.1 *Gastrointestinal bleeding*.....**Error! Bookmark not defined.**
 - 1.2.2 *Pyloric stenosis***Error! Bookmark not defined.**
 - 1.2.3 *Carcinoma of the Tongue*.....**Error! Bookmark not defined.**
 - 1.2.4 *Carcinoma of the stomach***Error! Bookmark not defined.**
 - 1.3 UNIT 3 **ERROR! BOOKMARK NOT DEFINED.**

Also included are questions designed to stimulate the student to think of his/ her own environment and answer appropriately and mentally at least in an interactive manner.

Examples

QUESTIONS

1. Discuss the differential diagnosis in a patient with fever, abdominal pain, and a mass in the right iliac fossa.
2. Write an essay on hepatomegaly in a/your country/ continent.
3. Is tuberculosis now the great mimic? Discuss this question from the point of view of a surgeon.
4. The surgeon and haematuria. Discuss this subject.
5. Describe the diagnostic measures in 1. a patient with an ulcer of the leg, and 2. skin 'lumps'.
6. "Blood in the stools with abdominal pain". How would you prevent and manage this clinical problem (from both an International and National point of view)?
7. Discuss the pathogenesis and management of strictures.
8. What kinds of 'tropical' diseases may be seen by a surgeon in patients in the developed world subsequent to increases in air travel and also the AIDS epidemic? How are they diagnosed?
9. Write an essay on sinuses and fistulae (this will take 2 hours)
10. As an exercise, take any of the diseases mentioned in this text. Describe the changes in presentation, the problems of diagnosis, and the modification of management needed if you put the disease concerned in to any of the boxes in this matrix (which I am sure you can and must personalize and improve!): -

| For Acute Conditions | 1 | 2 | 3 | 4 | 5 |
|---|-------------------------------|-------------------------------|---------------------------------------|--------------------------------------|-------------------|
| <i>Vary the timing and facilities and illnesses</i> | All imaging and lab available | No CT; No Ultrasound at night | As for 2 but no lab or X-ray at night | Only basic lab and X-ray in day time | No lab or imaging |
| Presented 24 hours after first symptoms (a.f.s) | | | | | |
| Pr. 48 hours a.f.s. | | | | | |
| Pr. 84 hours a.f.s. | | | | | |
| Pr 1 wk. a.f.s. | | | | | |

(Try for appendicitis, intestinal obstructions of various causes, acute abdomen after trauma, cholecystitis, splenic infarction, Very painful goitre, cold limb etc.)

| For Non-Acute Conditions | 1 | 2 | 3 | 4 | 5 |
|---|-------------------------------|-------------------------------|--|--|---------------------------------|
| <i>Vary the timing and facilities and illnesses</i> | All imaging and lab available | No CT; No Ultrasound at night | As for 2 but basic lab only, no X-ray screening, no ultrasound | Only basic lab and X-ray. Histopath off-site | No lab or imaging. No Histopath |
| Presented 1 month after first symptoms (a.f.s) | | | | | |
| Pr. 3/12 a.f.s. | | | | | |
| Pr 6/12 a.f.s. | | | | | |
| Pr 12/12 a.f.s. | | | | | |

(Try for malignancy of hollow organs, solid organs; TB in various sites, inguinal hernia, recent constipation, renal colic, haematuria, subacute obstruction symptoms, epigastric pain, etc.)

The references are few but include several free internet sources.

Examples

Web Sites

All these start as <http://www>. To be followed immediately by:

Example is (<http://www.york.ac.uk/inst/crd>)

bmj.com/ (the British Medical Journal in full)

bjs.co.uk (the British Journal of Surgery home page gives access to an excellent collection of reviews from many sources in summary - used extensively in this document; the summaries are free)

cancerbacup.org.uk/guidelines/ukindex.shtml (information on cancer treatment for health professionals)

centreforhiq.demon.co.uk/tb2.htm (guidelines on valid information of patients - to use as a guide as to what can be done)

dundee.ac.uk/MedEd/help/welcome.html (excellent and easy to access advice for surgeons and other health workers about palliative care problems)

evidence.org (about a publication - Clinical Evidence to give a guide to best practice - this is new and will develop; it is a subscription service)

jr2.ox.ac.uk:80/Bandolier (important summary of evidence based medicine issues)

gwent.nhs.gov.uk/trip (information from reviews on primary clinical care effectiveness)

medscape.com/misc/formdrugs.html (A database of drug information searchable by drug names or diseases - very good; registration needed but it is free)

nlm.nih.gov/ (US National Library of Medicine for searches on PubMed or Internet Grateful Med - both of which are free and have sets of related articles, some full text articles, some abstracts etc. The PubMed search system is very useful)

omni.ac.uk (A group developing lists of useful databases - access is free)

talcuk.org (David Morley's set of low cost teaching aids - simple material for public education with modifications - most of these are non surgical but they show what can be done at little cost)

thelancet.com/newlancet/eprint/ (the Lancet)

update-software.com/cochrane/htm (Cochrane Library)

york.ac.uk/inst/crd or **nhscrd.york.ac.uk/** (Effective Health Care reviews -Data base of Abstracts of Reviews of Effectiveness for the UK government - many of the surgical ones are in the text of this STEP update at suitable places)

The materials were distributed to 12 centres in Africa and Asia. Preliminary information suggests the material is welcome as being an effective way of upgrading the services available to less fortunate communities, but that students are taking time to accept the discipline of teaching themselves.

This STEP material was dispatched gratis to several countries in Asia and sub Saharan Africa. I have had the opportunity to review onsite usage in a non quantitative manner in four centers.

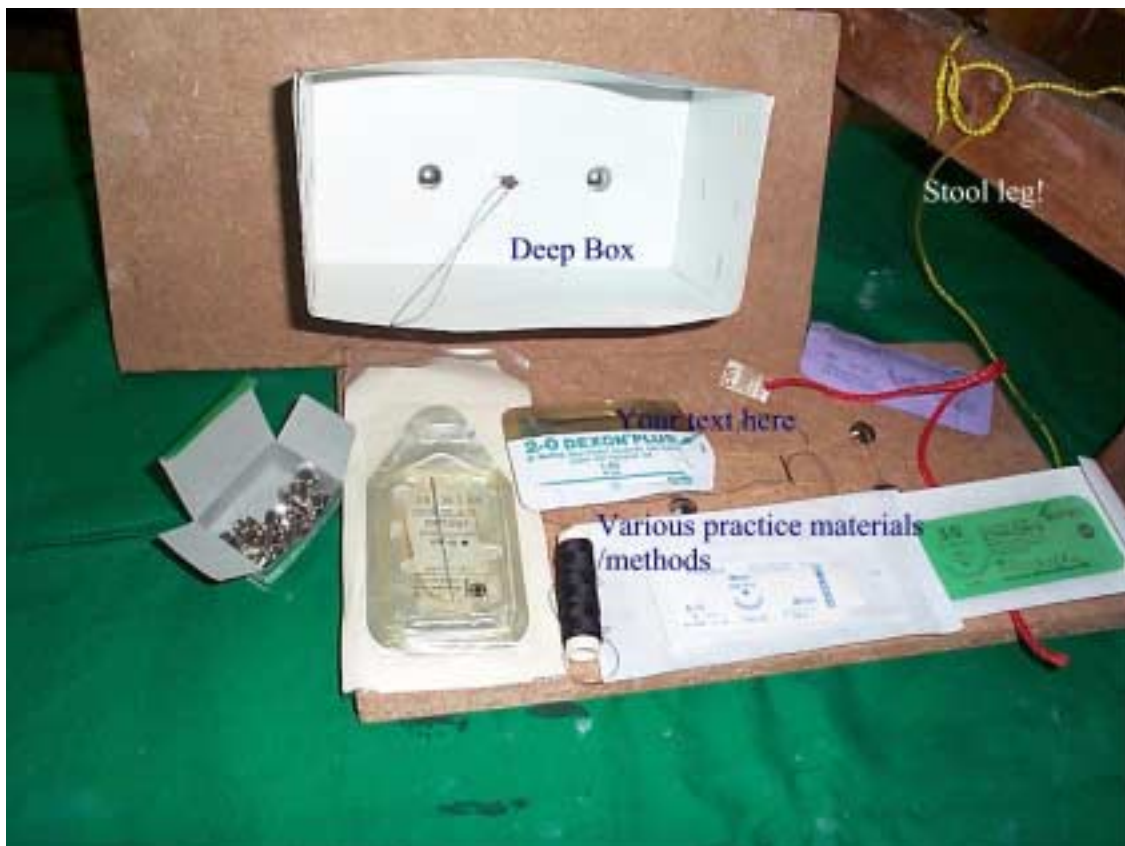
By way of background I must at this stage add that in Sri Lanka initially the newer basic science and clinical unmodified newer Royal College of Surgeons (RCS) material was purchased and made available on part payment to surgical trainees after they passed an examination in Basic science at the onset of a 3 year period before they sat an examination in Clinical aspects of Surgery. In the total training period written textual material usage was between 25-75% by 60%- most of this started during the first year. Reference material was read in the first year and all through even though texts not read towards the end. Less than 50% of 'questions and answers' were done even in the whole period. Of what was done most was in the first year- and most in 1 yr. What was read was deemed useful (10% said very useful). 40% wanted more supervision, 60% said no BUT in the cross questions 70% said they were not used to working alone or pacing themselves and doing assignments unsupervised. Some stated that the material did not deal with many problems and facilities relevant to the local situation. These comments lead to the idea of the RCS STEP material being modified with the help of COL before distribution.

Thus it is the COL RCS materials that are the subject of this presentation. In none of the locations was the material felt to be irrelevant and the COL RCS sponsored modifications

were felt useful In all places however in the big centers trainees seemed to want much more support than more isolated persons who managed to get the material! Thus the effort on this evaluation appears justified, and the distribution in future of such material to those doing surgery away from main centers seems correct.

These ideas are being and were carried forward in the was the new Introductory Surgical Skills material is going round, again modified with the COL RCS duo working together. The origins of this are that the Royal College of Surgeons of England (RCS) has material used for Basic Skills Training to Postgraduates at the commencement of surgical training. These documents include materials to help develop trainers and suitable centers, and also written and visual material to guide trainees, that can be used with mentors and even alone. However several of the suggestions in the visuals and text can be implemented as shown only in a rich setting. In view of the universal applicability of the principles in the material in a wider context, the Commonwealth of Learning (COL) arranged to modify it to include techniques, and scenarios applicable in developing countries. There is also additional footage relevant to basic surgical work in the economic 'South'. The material under the heading Introductory Surgical Skills was launched recently by the RCS in CD ROM, Text, and Video formats together to be sent out to and used in centers in Asia and Africa at no cost. These centers can reproduce the material for teaching purposes.

Examples of low cost Teaching Materials/ Simulations in this material





The next illustration is of the evaluation part of a skills workshop taking place in Kandy



There is a need to recognize that if the poor are to have with any kind of equity some access to basic surgical care innovative methods of training doctors and even non- surgeons and non doctors to operate are needed. The modified STEP material and skills courses by providing non face to face teaching learning opportunities is welcome. The material is going to non surgeons- and this is welcome as the better methodologies that those doing surgical work will learn, can only benefit the poorer patients with less access to formal care. This kind of material also makes it possible to maximize the benefit of any opportunities for face to face training. The COL and the Royal College of Surgeons of England are to be congratulated for their role in this initiative.

Refs:-

1. Aluwihare,A.P.R. (1999) Into the Commonwealth and Millennium with STEP Vancouver: Commonwealth of Learning
2. Surgeons In Training Education Programme- STEP (1996) London: Royal College of Surgeons of England