Areas of interest in Surgery

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Disclosures

No conflicts of interest relevant to this presentation
General Surgery vs Specialisation
SURGEONS AREN'T WHAT THEY USED TO BE

FROM STEVEN SODERBERGH

THE KNICK
Definition of “General” Surgery

It’s a Fan!

It’s a Spear!

It’s a Wall!

It’s a Rope!

It’s a Snake!

It’s a Tree!
• In Oporto...
• In Bragança...
• In Funchal or Angra do Heroísmo...

• Saturday night or Monday noon...
The specialty of general surgery requires specialized knowledge and skills in managing congenital and acquired diseases and injuries in most organ systems, which are treated by surgical methods. The surgeon must have acquired and must maintain specialized knowledge relating to the diagnosis, preoperative, operative and postoperative management in the following areas of primary responsibility:

- Abdominal wall and abdominal organs,
- Alimentary tract,
- Thoracic wall and organs,
- Head and neck, including vascular, endocrine, congenital and oncological disorders, particularly tumors of the skin, salivary glands, thyroid, parathyroid and oral cavity.
- Surgical oncology, including coordinated multidisciplinary management of the cancer patient,
- Endocrine system,
- Breast, skin and soft tissue,
- Vascular system, excluding the intracranial vessels, the heart and those vessels intrinsic and immediately adjacent thereto,
- Urogenital tract,
- Comprehensive management of all forms of trauma, including musculoskeletal traumata. Responsibility for the coordination of all phases of treatment is one of the main components of surgery,
- Care of critically ill patients with underlying conditions including coordinated multidisciplinary management,
- Rigid and flexible endoscopy of alimentary tract, diagnostic and therapeutic,
- Methods for gastrointestinal function diagnosis, especially manometry and pHmetry
- Diagnostic and interventional radiology and sonography.
Grains of rice the world consumes annually: **27.5 quadrillion**

Amount of data the world consumes every 30 minutes: **40.4 petabytes**

We consume more bytes on the internet in 30 minutes than grains of rice in a year.

1 million = 1,000,000  
1 billion = 1,000,000,000  
1 trillion = 1,000,000,000,000  
1 quadrillion = 1,000,000,000,000,000

1 kB = 1000  
1 MB = 1,000,000  
1 GB = 1,000,000,000  
1 TB = 1,000,000,000,000

1 PB = 1,000,000,000,000,000

1 TB  
= large university library  
= 212 DVD discs  
= 1430 CDs  
= 3 year music in CD quality
• MDT is a truly patient-centered approach.
NON-PROFIT ISN'T WHAT IT USED TO BE

FROM STEVEN SODERBERGH

THE KNICK
“Medicine used to be simple, ineffective and relatively safe...

... And expensive!

...Now it is complex, effective and potentially dangerous”

Sir Cyril Chantler
UK Health Policy Advisor
Former Dean, Guy’s, King’s and St. Thomas Medical and Dental Schools
Those who pay for care are now writing the “Quality Agenda” using data

- Federal Government
  - QIOs
  - Medicare Compare
  - Joint Commission “deemed status”

- State Governments
  - Increased licensing requirements
  - State review boards
  - Public report cards

- Corporations
  - Leapfrog
  - Business health coalitions

- Private Insurers
  - Pay for performance
  - Patient Centered Medical Homes

- Consumer Groups
  - Rankings and advisory groups
  - HealthGrades.com
  - Angie’s List
New Acronyms...

- MACRA: Medicare Access and CHIP Reauthorization Act
- MIPS: Merit-based Incentive Payment System
- APM: Alternative Payment Model
- PQRS: Physician Quality Reporting System
- VBM: Value-Based Modifier
- EHR-MU: Electronic Health Record-Meaningful Use
- CPIA: Clinical Practice Improvement Activities
That Was Then, This Is Now

Thomas R Russell, MD, FACS

What will this new system be like? The next era in health care will be patient-centered and value-driven. Surgeons and other health care providers will be expected to prove that the care they provide has positive results and is cost-effective. There will be increasing development and use of evidence-based guidelines based on appropriate clinical trials and other reliable data. Systems of care will be much more integrated, rather than divided between medical specialties or specific interests.

**Table 1.** Past Generation of Health Care Delivery

<table>
<thead>
<tr>
<th>Physician-centric care</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anecdotal and mentor-driven</td>
</tr>
<tr>
<td>Solo practice and fee for service</td>
</tr>
<tr>
<td>Minimal concern about resource use or cost</td>
</tr>
<tr>
<td>Scientific and technological development</td>
</tr>
<tr>
<td>Emphasis on healing</td>
</tr>
</tbody>
</table>

**Table 2.** Next Generation of Health Care Delivery

| Patient-centered, value-driven care |
| Evidence-based guidelines |
| Integrated systems of care |
| Waste reduction |
| Emphasis on wellness, prevention, and conservative approach to care |
Building European Reference Networks in Health Care

Exploring concepts and national practices in the European Union

Edited by
Willy Palm
Irene A. Ginos
Bernd Rechel
Pascal Garel
Reinhard Risse
Josep Figueras
Assim, em coerência com a Diretiva 2011/24/EU, de 9 de março, do Parlamento Europeu e do Conselho, este relatório propõe que um centro de referência seja definido como uma unidade prestadora de cuidados de saúde, com reconhecidos conhecimentos técnicos, na prestação de cuidados de saúde de elevada qualidade aos doentes com determinadas situações clínicas, que exigem uma especial concentração de recursos ou de conhecimento e experiência, devido à baixa prevalência da doença, à complexidade no diagnóstico ou tratamento e aos custos elevados dessas mesmas situações.
Influence of Patient, Physician, and Hospital Factors on 30-Day Readmission Following Pancreatoduodenectomy in the United States

Volume-Based Referral for Cancer Surgery: 
Informing the Debate

Brent K. Hollenbeck, Rodney L. Dunn, David C. Miller, Stephanie Daignault, David A. Taub, and John T. Wei

Table 2. Unadjusted and Adjusted Likelihood of Operative Mortality for Lowest Volume Hospitals (bottom decile within each year) Compared With Highest Volume Hospitals (top decile within each year)

<table>
<thead>
<tr>
<th>Cancer Surgery</th>
<th>Lowest Volume (bottom decile)</th>
<th>Highest Volume (top decile)</th>
<th>OR for Operative Mortality (bottom v top decile)</th>
<th>C-Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unadjusted OR</td>
<td>95% CI</td>
<td>Adjusted OR*</td>
<td>95% CI</td>
</tr>
<tr>
<td>Prostatectomy</td>
<td>6.2</td>
<td>2.8 to 13.3</td>
<td>3.8</td>
<td>1.8 to 7.9</td>
</tr>
<tr>
<td>Cystectomy</td>
<td>1.9</td>
<td>1.2 to 3.2</td>
<td>1.3</td>
<td>0.8 to 2.3</td>
</tr>
<tr>
<td>Esophagectomy</td>
<td>3.5</td>
<td>2.1 to 6.0</td>
<td>2.2</td>
<td>1.3 to 3.5</td>
</tr>
<tr>
<td>Pancreatectomy</td>
<td>7.9</td>
<td>3.9 to 16.0</td>
<td>4.9</td>
<td>2.4 to 10.1</td>
</tr>
<tr>
<td>Pneumonectomy</td>
<td>1.9</td>
<td>1.5 to 2.3</td>
<td>1.4</td>
<td>1.2 to 1.7</td>
</tr>
<tr>
<td>Liver resection</td>
<td>2.6</td>
<td>1.8 to 4.2</td>
<td>2.0</td>
<td>1.5 to 2.9</td>
</tr>
</tbody>
</table>

Lives Saved per 100 Cases Regionalized

<table>
<thead>
<tr>
<th>Cancer</th>
<th>Lives Saved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prostate</td>
<td>0.2</td>
</tr>
<tr>
<td>Bladder</td>
<td>0.9</td>
</tr>
<tr>
<td>Lung</td>
<td>1.4</td>
</tr>
<tr>
<td>Liver</td>
<td>6.0</td>
</tr>
<tr>
<td>Esophagus</td>
<td>7.3</td>
</tr>
<tr>
<td>Pancreas</td>
<td>9.2</td>
</tr>
</tbody>
</table>
Definition of INTEREST

• a feeling of wanting to learn more about something or to be involved in something

• a quality that attracts your attention and makes you want to learn more about something or to be involved in something

• something (such as a hobby) that a person enjoys learning about or doing
UNION EUROPÉENNE DES MÉDECINS SPÉcialistes
EUROPEAN UNION OF MEDICAL SPECIALISTS
Section of Surgery & European Board of Surgery

Divisions

General Surgery
Coloproctology
Emergency Surgery
Endocrine Surgery
Transplantation
Trauma Surgery
HPB Surgery
Surgical Oncology
Breast Surgery
Oesophagogastric
From 2005 to 2020:

- Surgeons overall will increase 3%
- General Surgery will decrease 7%
Impact of Family and Gender on Career Goals

Results of a National Survey of 4586 Surgery Residents

Kate V. Viola, MD; Emily Bucholz, MPH; Heather Yeo, MD, MHS; Crystal L. Piper, MS; Richard H. Bell Jr, MD; Julie Ann Sosa, MA, MD


Figure 1. Summary of survey responses.
O FUTURO DA CIRURGIA GERAL: REQUIEM POR UMA ESPECIALIDADE?

"Evolution is towards specialization. This is also true for surgery which changes with the field of practice, illustrating the Darwinian adaptation." (1)

"A specialist is a doctor with a smaller practice but a bigger home" (2).

As razões da crise da Cirurgia Geral como especialidade, tema recorrente e cada vez mais actual, são múltiplas e têm, progressivamente, vindo a avolumar-se perante uma atitude de alguma passividade por parte dos cirurgiões, que aparentemente optaram por recusar reconhecê-la e adaptar-se, tornando o "fim da Cirurgia Geral" uma quase inevitabilidade.

Algumas dessas razões:
Em primeiro lugar, o crescimento vertiginoso dos conhecimentos sobre a fisiopatologia e tratamento das doenças, bem como o enorme
Do we still need “General” Surgeons?

- *Latitude* instead of depht...

- Provide *continuity* of care
General surgery, in name, should continue to be an education tool, but as a consequence of the focused training experience, the trainee should be named not a general surgeon but by the specialty or subspecialty in the area of expertise. Specialization not only gives the surgeon an identity but also may be an answer to improve patient outcome.
The grapefruit concept

Common trunk

General

Colorectal

Oncological

Breast

Endocrine

Transplant

HPB

Trauma

Hand
RESIDENCY ISN'T WHAT IT USED TO BE

FROM STEVEN SODERBERGH

THE KNICK
Is the cockpit model perfectly transferable to the Hospital?
Quando pilotar um avião pode ajudar a operar um doente

Pilotos treinam profissionais de saúde para tomar cirurgias mais seguras

Reduzir complicações e mortes, tendo por base procedimentos de segurança seguidos na aviação é o grande objectivo desta rica de experiência.

Médicos treinam no ‘cockpit’

Bloco operatório vai ser transformado em cockpit

Pilotos ensinam «cultura da segurança» a cirurgiões

Comandantes da TAP vão treinar profissionais de saúde do CUF Porto, transformando um bloco operatório num cockpit.

HOSPITAL CUF PORTO

Bloco operatório vai ser transformado em cockpit

Dois pilotos responsáveis pelo treino e formação da TAP Portugal e um cirurgião vão transformar o bloco operatório do hospital CUF Porto num cockpit de avião. Mais de 100 profissionais de saúde vão emular nesta experiência marcada para a próxima quinta-feira.

Segundo Armando Marinho, comoduto da TAP, esta iniciativa tem como objectivo altivos para a comunidade médica para a necessidade de adoptar novas calças de operações ou regulamentos existentes na aviação, de modo a eliminarem o percentual de acidentes médicos. «Queremos por isso tornar as cirurgias mais seguras e minimizar acidentes de avião, sobretudo.»

De acordo com Costa Maior, cirurgião no hospital CUF, o ambiente num cockpit de avião é muito semelhante ao que é vivido numa sala de operações. Ambas as actividades são de alto risco e desvalorizadas por profissionais altamente qualificados que têm a vida dos pacientes como suas máes.
General Surgery Residency Training Issues

Mary E. Klingensmith, MD*, Frank R. Lewis, MDb,*

*Department of Surgery, Washington University School of Medicine, 4566 Scott Avenue, St Louis, MO, USA; bAmerican Board of Surgery, 1617 JFK Boulevard, Suite 860, Philadelphia, PA 19103, USA

In summary, the principal change in surgical residency training of the past 20 years has been the loss of many areas of open abdominal surgery, but at the same time this has not been replaced by a comparable volume of the same surgery done by complex laparoscopic techniques. Moving this laparoscopic experience back into surgical residency would be possible today, as
Consensus guidelines for validation of virtual reality surgical simulators


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2 Department of Surgery, UZlUzland Hospital, Prins Constantijnweg 2, 2906 ZC Capelle a/d Ijsel, The Netherlands
3 Department of Surgical Oncology and Technology, Imperial College London, 106th Floor, QEQM Building, St. Mary's Hospital, Praed Street, London, W2 1NY
4 Glostrup Hospital, Copenhagen, Denmark
5 Ward 7, Directorate of Surgery, TUHT, Ninewells Hospital, Dundee, DD1 9SY
6 Department of Surgery, Catharina Hospital, Michelangeloelaan, 25602 ZA Eindhoven, The Netherlands

Received: 23 May 2005/ Accepted: 19 June 2005/ Online publication: 26 October 2005

EAES guidelines

DOI: 10.1007/s00464-005-0384-2
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Total amount of strain applied to tissue during needle passages MAJOR

Total time to form a knot TEMPO
<table>
<thead>
<tr>
<th>Category</th>
<th>Element</th>
<th>Feedback on performance and debriefing notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Situation Awareness</strong></td>
<td>Gathering information</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Understanding information</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Projecting and anticipating future state</td>
<td></td>
</tr>
<tr>
<td><strong>Decision Making</strong></td>
<td>Considering options</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Selecting and communicating option</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Implementing and reviewing decisions</td>
<td></td>
</tr>
<tr>
<td><strong>Communication and Teamwork</strong></td>
<td>Exchanging information</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Establishing a shared understanding</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Co-ordinating team activities</td>
<td></td>
</tr>
<tr>
<td><strong>Leadership</strong></td>
<td>Setting and maintaining standards</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Supporting others</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Coping with pressure</td>
<td></td>
</tr>
</tbody>
</table>

* 1 Poor; 2 Marginal; 3 Acceptable; 4 Good; N/A Not Applicable
Surgical specialization

H. Bismuth

Hepatobiliary Centre, Paul Brousse Hospital, 12–14 Avenue Paul Vaillant Couturier, 94800 Villejuif, France (e-mail: henri.bismuth@pbr.aphp.fr)

British Journal of Surgery 2013; 100 (S6): S43–S44

‘Evolution is towards specialization. This is also true for surgery which changes with the field of practice, illustrating the Darwinian adaptation.’

These dramatic changes have occurred in 30 short years. It started with the surgeon specialist, and has progressed to specialty structures that include whole multidisciplinary teams of physicians and researchers.
“There is no question that this is the challenge of the 21st century surgeon. You can no longer be only surgeons, but you must become leaders of high-performance teams.”
I shall be telling this with a sigh

Somewhere ages and ages hence:

Two roads diverged in a wood, and I—

I took the one less traveled by,

And that has made all the difference.

Robert Frost, 1874 - 1963
- Academic Medical Center
- 116-bed Surgical Department
- 6 Specialized Units
- 42 staff surgeons
- 17 residents
- ~100 nursing staff
- 6400 admitted pts
- 9000 operations
- 1400 emergency surgeries
- 2400 outpatient surgeries
- 30000 outpatient visits
- Avg LOS – 5.4 d
- Avg. pre-op admission - .89 d
- Overall mortality – 1.55%
BENCHMARKING GRUPO E

Custos Operacionais por Doente Padrão (€)
(Valores Acumulados)

CH S. João: 2.444,0
CH Porto: 2.547,0
CH L. Occidental: 2.706,0
CH Uni. Coimbra: 2.723,0
CH L. Central: 2.788,0
CH Lisboa Norte: 3.902,0
• MDT is a truly patient-centered approach.
<table>
<thead>
<tr>
<th>Especialidade</th>
<th>Cirurgião</th>
<th>Ajudante</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cirurgia da Cabeça e Pescoço</td>
<td>57</td>
<td>157</td>
<td>214</td>
</tr>
<tr>
<td>Cirurgia da Mama e Axila</td>
<td>43</td>
<td>83</td>
<td>126</td>
</tr>
<tr>
<td>Cirurgia Cardiotoráctica</td>
<td>-</td>
<td>36</td>
<td>36</td>
</tr>
<tr>
<td>Cirurgia da Parede Abdominal</td>
<td>113</td>
<td>118</td>
<td>231</td>
</tr>
<tr>
<td>Cirurgia do Esófago e Junção Esofagoastrica</td>
<td>-</td>
<td>36</td>
<td>36</td>
</tr>
<tr>
<td>Cirurgia do Estômago e Duodeno</td>
<td>24</td>
<td>102</td>
<td>126</td>
</tr>
<tr>
<td>Cirurgia do Jejuno, Ileon e Mesentério</td>
<td>47</td>
<td>48</td>
<td>95</td>
</tr>
<tr>
<td>Cirurgia do Apêndice Ileocecal</td>
<td>88</td>
<td>13</td>
<td>101</td>
</tr>
<tr>
<td>Cirurgia do Côlon e Recto</td>
<td>86</td>
<td>157</td>
<td>243</td>
</tr>
<tr>
<td>Cirurgia do Anus, Períneo e Região Sagrada</td>
<td>60</td>
<td>63</td>
<td>123</td>
</tr>
<tr>
<td>Cirurgia da Vesícula e Vias Biliares</td>
<td>61</td>
<td>185</td>
<td>246</td>
</tr>
<tr>
<td>Cirurgia do Fígado</td>
<td>1</td>
<td>27</td>
<td>28</td>
</tr>
<tr>
<td>Cirurgia do Pâncreas</td>
<td>1</td>
<td>30</td>
<td>31</td>
</tr>
<tr>
<td>Cirurgia do Baço</td>
<td>2</td>
<td>13</td>
<td>15</td>
</tr>
<tr>
<td>Cirurgia do Peritóneo</td>
<td>9</td>
<td>22</td>
<td>31</td>
</tr>
<tr>
<td>Cirurgia das Suprarrenais e Retropéritoneu</td>
<td>-</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Laparotomia e Laparoscopias Exploradoras</td>
<td>2</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Cirurgia Ginecológica</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Cirurgia Vascular</td>
<td>23</td>
<td>35</td>
<td>58</td>
</tr>
<tr>
<td>Cirurgia dos Membros</td>
<td>3</td>
<td>-</td>
<td>3</td>
</tr>
<tr>
<td>Cirurgia Plástica</td>
<td>9</td>
<td>27</td>
<td>36</td>
</tr>
<tr>
<td>Cirurgia da Pele e Tecidos Moleles</td>
<td>222</td>
<td>97</td>
<td>319</td>
</tr>
<tr>
<td>Cirurgia de Trauma</td>
<td>4</td>
<td>7</td>
<td>11</td>
</tr>
</tbody>
</table>

**TOTAL**                                          | **857**   | **1271**  | **2128** |
Specialization
• Especialização

Referral
• Pluridisciplinaridade

Results
• Educação

Efficiency
• Safety

Formation
• Training
“It is a natural human progression to specialise, a key component the genetic makeup of our species. The fourteenth century superiority of English archers that won them the battle of Agincourt was based on specialization [... ] all these concepts have a modern parallel in the delivery of the best quality of surgery for the patient today. [...] This, however can no longer be done for more than a limited anatomical area of surgical activity. [...]”

Specialisation, then, is good, it is a natural part of human progress; it can deliver better outcomes for patients. Like all change, it brings dangers and new challenges. [...]”

In our field the age of the truly great generalist has passed.”

Bill Heald, CBE, MChir, FRCS, FACS
1. The scope of general surgery
General surgery is a discipline that requires knowledge of and familiarity with a broad spectrum of diseases that may require surgical treatment. By necessity, the breadth and depth of this knowledge will vary by disease category. In most areas, the surgeon will be expected to be competent in diagnosing and treating the full spectrum of disease. However, there are some types of disease in which comprehensive knowledge and experience are not generally gained in the course of a standard surgical residency. In these areas, the surgeon will be able to recognize and treat a select group of conditions within a disease category.

2. The required residency experience for initial certification in general surgery
• Alimentary Tract (including Bariatric Surgery)
• Abdomen and its Contents
• Breast, Skin and Soft Tissue
• Endocrine System
• Solid Organ Transplantation
• Pediatric Surgery
• Surgical Critical Care
• Surgical Oncology (including Head and Neck Surgery)
• Trauma/Burns and Emergency Surgery
• Vascular Surgery
• General surgery as a field comprises, but is not limited to, the performance of operations and procedures (including endoscopies) relevant to the content areas listed above.
accomplished stories and tales of a way for the family to focus into one on the rest of his new play, pretty or fame, no wonder...
"Hospitals and Airlines need two things to survive: financial strength and public trust"