Disseminating Surgical Science: Leveraging the #VisualAbstract

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Disclosures

• No relevant financial disclosures
Game Plan

Backstory
Impact
Leverage
London Trauma...
London Trauma...
The Impact of a Pan-regional Inclusive Trauma System on Quality of Care

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Accession Number: 00000055-21100700-00029.

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Title: The Impact of a Pan-regional Inclusive Trauma System on Quality of Care (Article)


Abstract: Objectives: To evaluate the impact of the implementation of an inclusive pan-regional trauma system on quality of care.

Background: Inclusive trauma systems ensure access to quality injury care for a designated population. The 2007 National Confidential Enquiry into Patient Outcome and Death (NICEPOD) found quality deficits for 60% of severely injured patients. In 2010, London implemented an inclusive trauma system. This represented an opportunity to evaluate the impact of a pan-regional trauma system on quality of care.

Methods: Evaluation of the London Trauma System (ELoTS) utilized the NICEPOD study core methodology. Severely injured patients were identified prospectively over a 3-month period. Data were collected from prehospital care to 72 h following admission or death. Quality, processes of care, and outcome were assessed by expert review using NICEPOD criteria.

Results: Three hundred and twenty-one severely injured patients were included of which 64% were taken directly to a major trauma center, in contrast to 10% in NICEPOD. Overall quality improved with the proportion of patients receiving “good overall care” increasing significantly (NICEPOD: 49% vs ALL-ELoTS: 69%, RR 1.2 to 1.4, P = 0.01) primarily through improvements in organizational processes rather than clinical care. Improved quality was associated with increased early survival, with the greatest benefit for critically injured patients (NICEPOD: 31% vs ALL-ELoTS 11%, RR 0.33 to 0.99, P = 0.04).

Conclusions: Inclusive trauma systems deliver quality and process improvements, primarily through organizational change. Most improvements were seen in major trauma centers; however, systems implementation did not automatically lead to a reduction in clinical deficits in care.

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### Abstract Dissemination

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**Author:** Cole, Elaine PhD; Lechy, Fiona MBBS; West, Anita RN; Smith, Neil PhD; Brohi, Karrm FRCS; Davenport, Ross PhD; on behalf of the ELuTS Study Collaborators  
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**Title:** The Impact of a Pan-Regional Inclusive Trauma System on Quality of Care (Article)  
**Source:** Annals of Surgery, 264(1):188-194, July 2016  
**Abstract:**

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Methods: Evaluation of the London Trauma System (ELuTS) utilized the NICEPOD study core methodology. Severely injured patients were identified prospectively over a 3-month period. Data were collected from prehospital care to 72 hours following admission or death. Quality, processes of care, and outcome were assessed by expert review using NICEPOD criteria.  

Results: Three hundred and twenty one severely injured patients were included of which 84% were taken directly to a major trauma center, in contrast to 16% in NICEPOD. Overall quality improved with the proportion of patients receiving "good overall care" increasing significantly (NICEPOD: 40% vs ALL-ELuTS: 65%, RR 1.3 (1.2 to 1.4), P = 0.01) primarily through improvements in organizational processes rather than clinical care. Improved quality was associated with increased early survival, with the greatest benefit for critically injured patients (NICEPOD: 31% vs ALL-ELuTS 11%, RR 0.37 (0.33 to 0.39), P < 0.04).  

Conclusions: Inclusive trauma systems deliver quality and process improvements, primarily through organizational change. Most improvements were seen in major trauma centers; however, systems implementation did not automatically lead to a reduction in clinical deficits in care.  

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Birth of the Visual Abstract…

London Trauma after establishing an inclusive, coordinated trauma system

Access to Trauma Specialist on First Arrival

16% → 84%

Involvement of senior clinicians <30 min

38% → 92%

Improved Survival in critically ill (ISS>35)

69% → 89%

Visual Abstract Dissemination

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35k IMPRESSIONS

169 RETWEETS

251 ARTICLE VISITS
More Stories to Tell....

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RCT: Structured Educational Intervention for Surgical Residents to Impose Escalation of Care

- 5 Year Survival Rates by Resection Type

- Improved Outcomes

- Predictive Factors

- Reduced Morbidity

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RCT: Oral & IV Antibiotics to Prevent SSI after Elective Colorectal Surgery

- Reduced Post-operative Complications

- Reduced Incidence of SSI

- Improved Cost-Effectiveness

---

Impact of Hospitalization in Previous 90 days on Elective Outpatient Hernia Repair

- Increased Post-operative Complications

- Increased Incidence of SSI

- Reduced Patient Satisfaction

---

RCT: Primary Closure With & Without Biologic Mesh after Abdominal Perforation Repair

- Improved Primary Closure Rates

- Reduced Perforation Rates

- Enhanced Patient Outcomes

---

Factors that Challenge

- Surgical Morbidity

- Hospital LOS

- Patient Outcomes

---

Impact of Implementing a Dose-Based Hernia Program on a Single Hospital System

- Reduced Hospital LOS

- Improved Patient Outcomes

- Enhanced Resource Utilization

---

Comparison

- Mortality within 30 days

- readmissions

- Length of Stay

---

RCT: Early Return to Work for Laparoscopic Hernia Repair

- Improved Return to Work

- Enhanced Patient Satisfaction

- Reduced Hospital Costs

---

Factors that Challenge

- Patient’s age

- Comorbidities

- Choice of mesh

---

Impact of Multiple Complications on Failure to Recover after Inpatient Surgery

- Reduced Post-operative Complications

- Improved Patient Outcomes

- Enhanced Resource Utilization

---

RCT: Impact of Supervised Exercise before Elective Abdominal Aortic Aneurysm Repair

- Improved Post-operative outcomes

- Reduced readmissions

- Enhanced Patient Satisfaction

---

Impact of Implementing a Painful Patient Blood Management Program

- Reduced Post-operative Complications

- Improved Patient Outcomes

- Enhanced Resource Utilization

---

Propensity Matched Retrospective Review: Innovative Advices Events Associated with Laparoscopic Hernia Repair

- Improved Patient Outcomes

- Enhanced Resource Utilization

- Reduced Hospital Costs

---

Five Domains of Intraoperative Performance

- Improved Surgical Technique

- Enhanced Patient Outcomes

- Reduced Hospital Costs

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More Stories to Tell.....
More Stories to Tell....

RCT: Early Vs. Delayed Cholecystectomy for Late Presenting Acute Cholecystitis

Patients with Acute Cholecystitis Symptoms >72 hours (n=86)

RANDOMIZATION

Early Cholecystectomy (Next daytime OR slot)  Delayed Cholecystectomy (> 6 weeks later)

Post-Operative Outcomes

14% Morbidity ( % of patients, p = 0.015 )  39%

4 Length of Stay ( days, p < 0.001 )  7

More Stories to Tell….

Most Opioids Prescribed for Outpatient General Surgery Procedures Go Unused

72% OF PRESCRIBED PILLS WENT UNUSED

Opportunities for Surgeons to Improve Antibiotic Stewardship

- Limit Perioperative Antibiotics to the OR
- Discontinue Use of Topical Antibiotics
- Fixed Antibiotic Duration after Source Control
- Discontinue Antibiotics after Appropriate I&D
- Limit Antibiotics for Uncomplicated Diverticulitis
- Limit Treatment of Asymptomatic Bacteriuria
- Limit Treatment for Asymptomatic *Clostridium Difficile*

More Stories to Tell….

Characteristics of Effective Mentorship for Academic Surgeons: A Grounded Theory Model

Multiple Mentors

Unselfish Mentors

Strategic Advisor

Diverse Mentees

Prospective, Matched-Crossover Study to Evaluate the Impact of Visual Abstracts

ORIGINAL RESEARCH ARTICLES (n=44)

Tweet: Title & Visual Abstract
Tweet: Title Only

PHASE 1 DISSEMINATION

4 WEEK "WASH OUT" PERIOD

Tweet: Title & Visual Abstract
Tweet: Title Only

PHASE 2 DISSEMINATION

ASSESS OUTCOMES

IMPRESSIONS

RETWEETS

ARTICLE VISITS

88 TWEETS TOTAL
44 Title Only
44 Title & Visual Abstract

Getting Your Research Out There…

Impact of Visual Abstracts on Article Dissemination

IMPRESSIONS
x7.7 fold

RETWEETS
x8.4 fold

ARTICLE VISITS
x2.7 fold

3k → 23k
(No. of times a Tweet was seen)

11 → 92
(No. of times a Tweet was shared)

65 → 175
(No. of Article Visits via link click)

Impact of Visual Abstracts on Article Dissemination

- **Impressions**: x7.7 fold
  - 3k → 23k
  - (No. of times a Tweet was seen)

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Reaching a Global Audience…
Reaching a Global Audience…

FOUR CONTINENTS
IN 10 MINUTES
At #PNHRS2017: @endocrine_witch stresses the research dissemination power of the #VisualAbstract #healthxph
More & more journals are recommending authors use #visualabstracts. Top tips from @annalsofsurgery surgeryredesign.com/resources #CochraneTrainees
Reaching a High Impact Audience…

Atul Gawande
@Atul_Gawande

Love the #VisualAbstract format. More journals need to pick this up.

Annals of Surgery @AnnalsOfSurgery

RCT: Prophylactic Mesh to Prevent Parastomal Hernia
#ColorectalSurgery #VisualAbstract
journals.lww.com/annalsofsurgery...
Recent #VisualAbstract Adopters

So we @usnews have entered the era of the #visualabstract.

Our debut offering overviews 25 U.S. News methodologies thru Donabedian's eyes.

Now >30 Journals & Institutions...
Leveraging the #VisualAbstract …
Leveraging the #VisualAbstract …

1. Help Journals Help You…

Toward Patient-Centered Hospital Design: What Can Airports Teach Us?

Elements of Airport Process Design that Could be Adopted by Hospitals

- Online Check-In
- Self Check-In Kiosks
- Fast-Track Entry for Frequent Users
- User-Friendly Wayfinding Signage
- Mobile Phone Time Updates

Mullangi S, Ibrahim AM, Chopra V. *Annals of Internal Medicine*. May 2017
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Mullangi S, Ibrahim AM, Chopra V. Annals Intern Med. May 2017
Leveraging the #VisualAbstract …

2. Help Speakers Advocate For You…
Leveraging the #VisualAbstract …

3. Help Yourself Help You…

DHW Lab, Auckland City Hospital (Auckland, New Zealand)
Wait… How Do I Make One?
Wait… How Do I Make One?

A Primer on How to Create a VISUAL ABSTRACT

Version 3 | May 2017

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Free PDF Primer on Creating a Visual Abstract:
www.SurgeryRedesign.com/resources
Wait... How Do I Make One?

Free PDF Primer on Creating a Visual Abstract: www.SurgeryRedesign.com/resources
EMBRACING SOME DESIGN PRINCIPLES

An effective visual abstract has a clear message. You will want to embrace some principles of design when creating your visual abstract. These include:

Focus on the user experience. The process of design starts and always returns to the user experience. Always keep in mind, “What does my audience on Twitter want to know about scientific research?”

Clarity of Purpose. Particularly within complex articles, you want to spend time narrowing the key message down to what you want to deliver. Some simplification of presentation may be necessary to establish a clear focus.

Rapid Prototyping. There are infinite ways to visually display research. Your 1st, 2nd or 10th visual abstract won’t be your best one. You will improve significantly by rapidly trying new formats and seeing what works!

Iterative Improvement. Rather than ask, ”Is it perfect?” design thinking focuses on, “What is the next step to make it partially better?” You will significantly improve by soliciting feedback and studying other designs.

Thoughtful Restraint. Prioritize the key message over completeness. Sure, having every secondary endpoint and every limitation of the article in the visual abstract is ideal to give context, but this can significantly distract from the key message. In the case of visual abstracts, more is not always better.

Relevant Creativity. Thinking outside the box can be valuable, but ultimately needs to be grounded in the desired outcome. Experimenting "just to be different" isn’t always effective. You should frequently balance your design creativity with thoughtful restraint and clarity of purpose.

Free PDF Primer on Creating a Visual Abstract:
www.SurgeryRedesign.com/resources
THANK YOU
Questions?

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www.SurgeryRedesign.com