



**Accelerating
Collaboration
between Clinicians
and Architects to
Measure & Improve
Healthcare Design**

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Senior Principal, Chief Medical Officer | HOK



ROYAL COLLEGE OF PHYSICIANS LONDON | 17-19 JUNE 2019

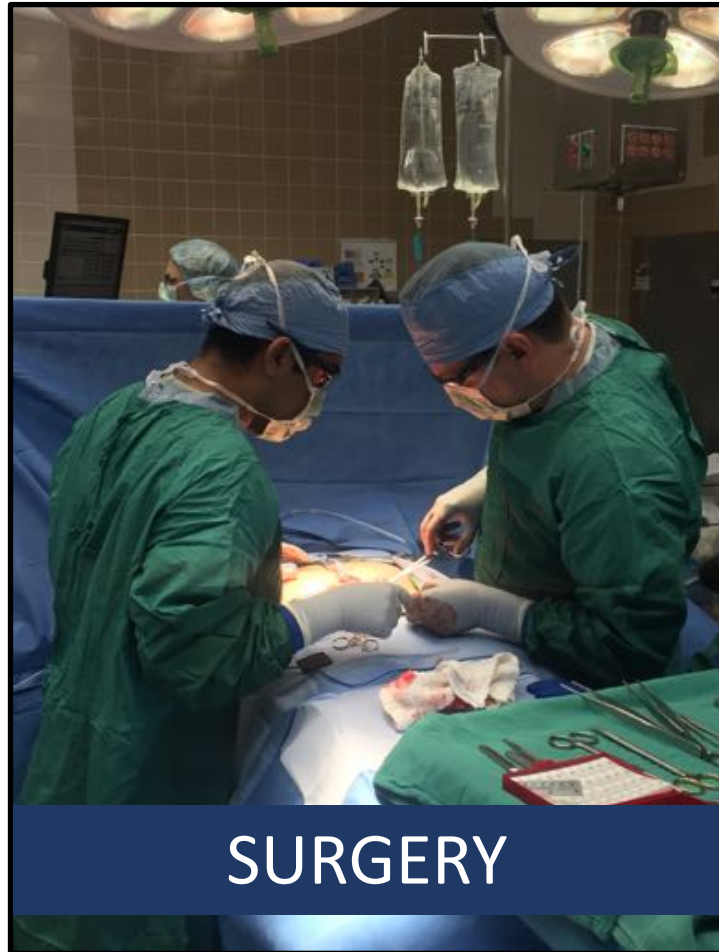
**EUROPEAN
HEALTHCARE DESIGN**

RESEARCH • POLICY • PRACTICE

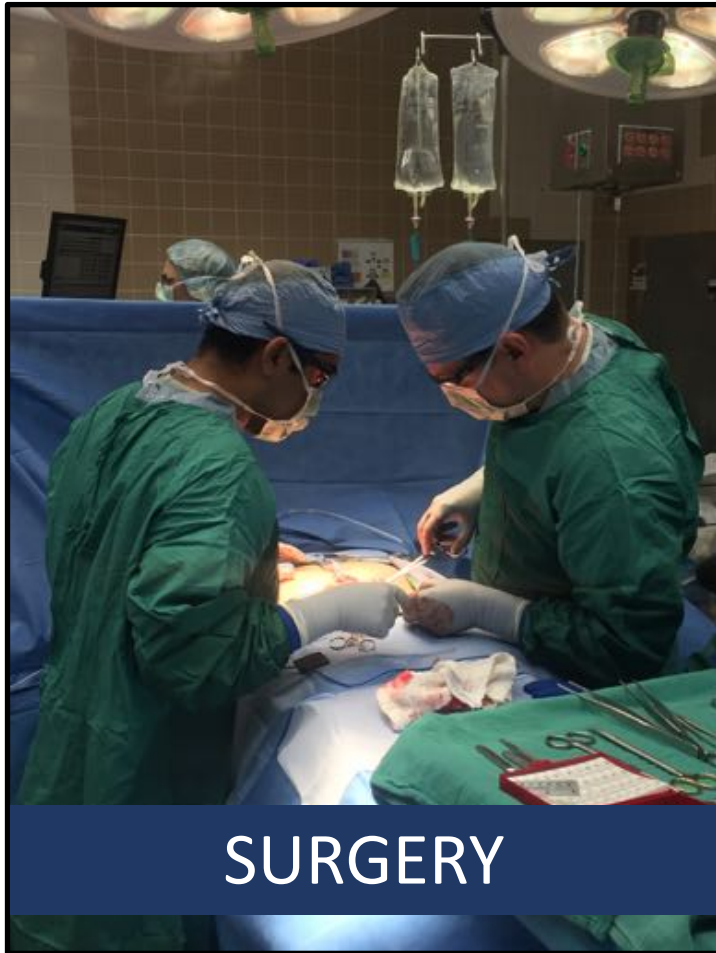
European
Healthcare Design
Royal College
of Physicians

London, UK
June 17th, 2019

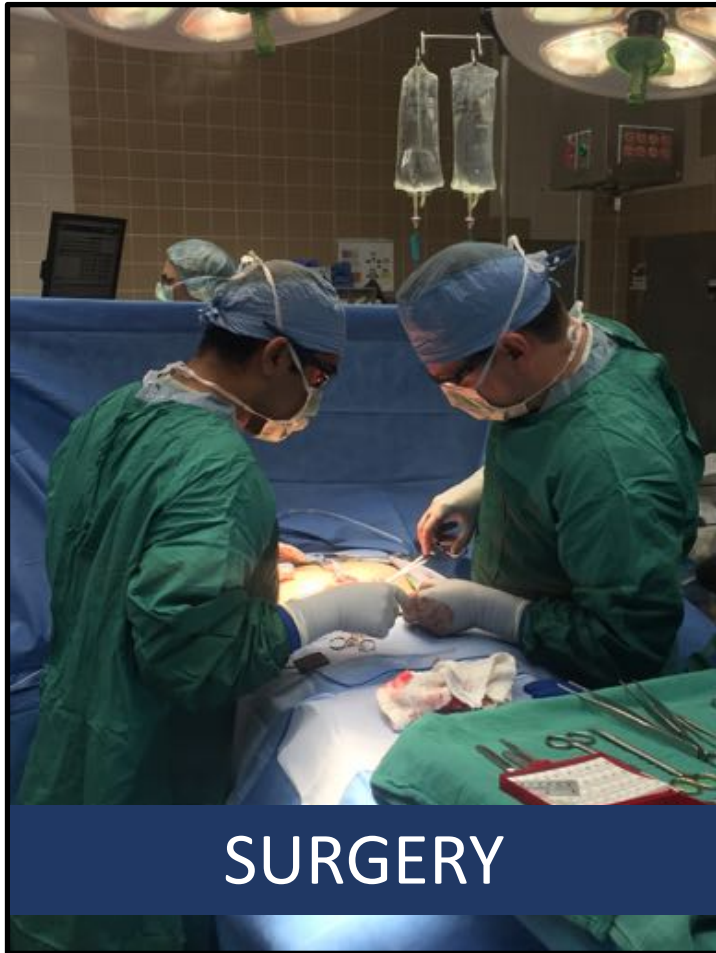
Combining Three Perspectives



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Combining Three Perspectives



There has never been a better time than now to find a common ground between architects and clinicians.



HEALTH IN 2019



HEALTH & THE AFFORDABLE CARE ACT



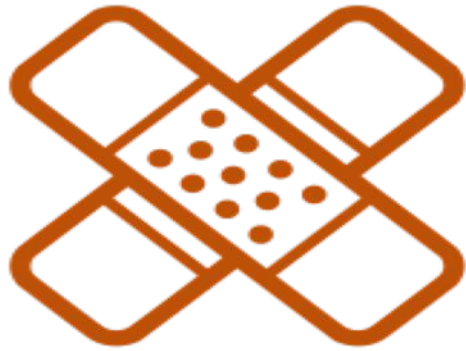
“TRIPLE AIM”

IMPROVE
QUALITY

DECREASE
COSTS

IMPROVE
POPULATION

Changing Payments & Design Opportunities



NO PAYMENT
“NEVER EVENTS”

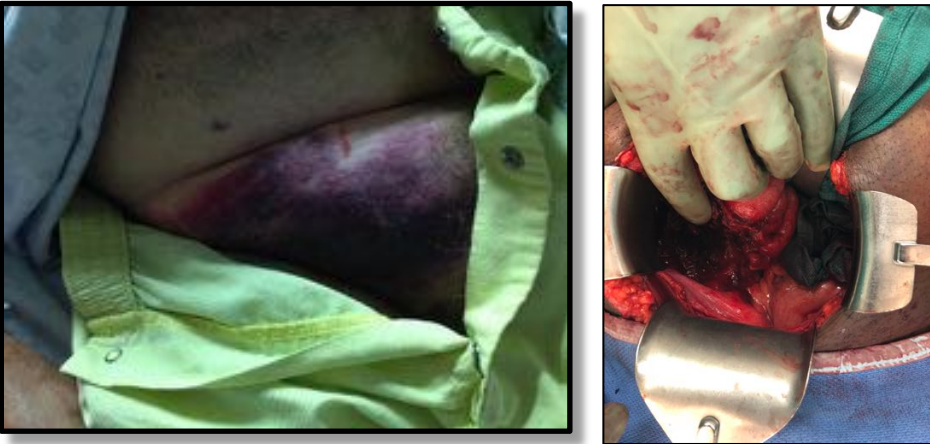


BUNDLE
PAYMENTS



PAY FOR HEALTH
“UPSTREAM”

Payment & “NEVER EVENTS”



No Payment for *Never Events*

Examples

Retained Foreign Body

Falls Results in Injury

Catheter- Associated Infections

Surgical Site Infections

Make Payments in **BUNDLES**



Make Payments in **BUNDLES**



Make Payments for **VALUE**



Pay for HEALTH “Upstream”



The NEW ENGLAND
JOURNAL of MEDICINE



Perspective

Accountable Health Communities — Addressing Social Needs through Medicare and Medicaid

Dawn E. Alley, Ph.D., Chisara N. Asomugha, M.D., Patrick H. Conway, M.D., and Darshak M. Sanghavi, M.D.
N Engl J Med 2016; 374:8-11 | [January 7, 2016](#) | DOI: [10.1056/NEJMp1512532](#)

Pay for HEALTH “Upstream”

\$157 million CMS pilot to improve health upstream



Housing



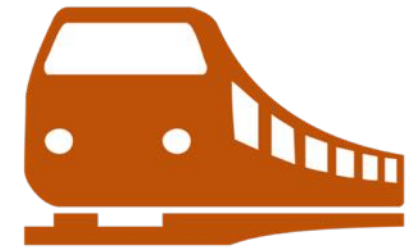
Food



Utilities



Safety



Transport

Pay for HEALTH “Upstream”



Box 1 | Accountable Health Communities Core Health-Related Social Needs Screening Questions

Underlined answer options indicate positive responses for the associated health-related social need. A value greater than 10 when the numerical values for answers to questions 7-10 are summed indicates a positive screen for interpersonal safety.

Housing Instability

1. What is your housing situation today?
 - I do not have housing (I am staying with others, in a hotel, in a shelter, living outside on the street, on a beach, in a car, abandoned building, bus or train station, or in a park)
 - I have housing today, but I am worried about losing housing in the future.
 - I have housing

2. Think about the place you live. Do you have problems with any of the following? (check all that apply)
 - Bug infestation
 - Mold
 - Lead paint or pipes
 - Inadequate heat
 - Oven or stove not working
 - No or not working smoke detectors
 - Water leaks
 - None of the above

Designed
for
Clinician
Use

Insurers Paying for... Housing?(!)

Listen to this story 



HEALTH CARE

Why a health insurance company entered the housing market



7:09

POLICY-ISH

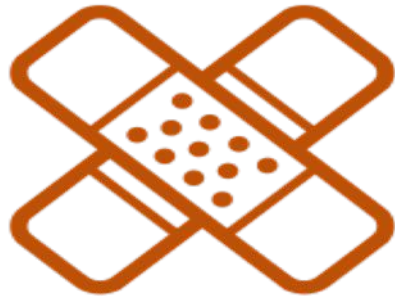
New York Debates Whether Housing Counts As Health Care

UNITEDHEALTH GROUP*



\$12 Million Investment by UnitedHealthcare Helps Bring New Affordable-Housing Community to Downtown Albuquerque

Shift toward Payment Beyond Hospitals



NO PAYMENT
“NEVER EVENTS”

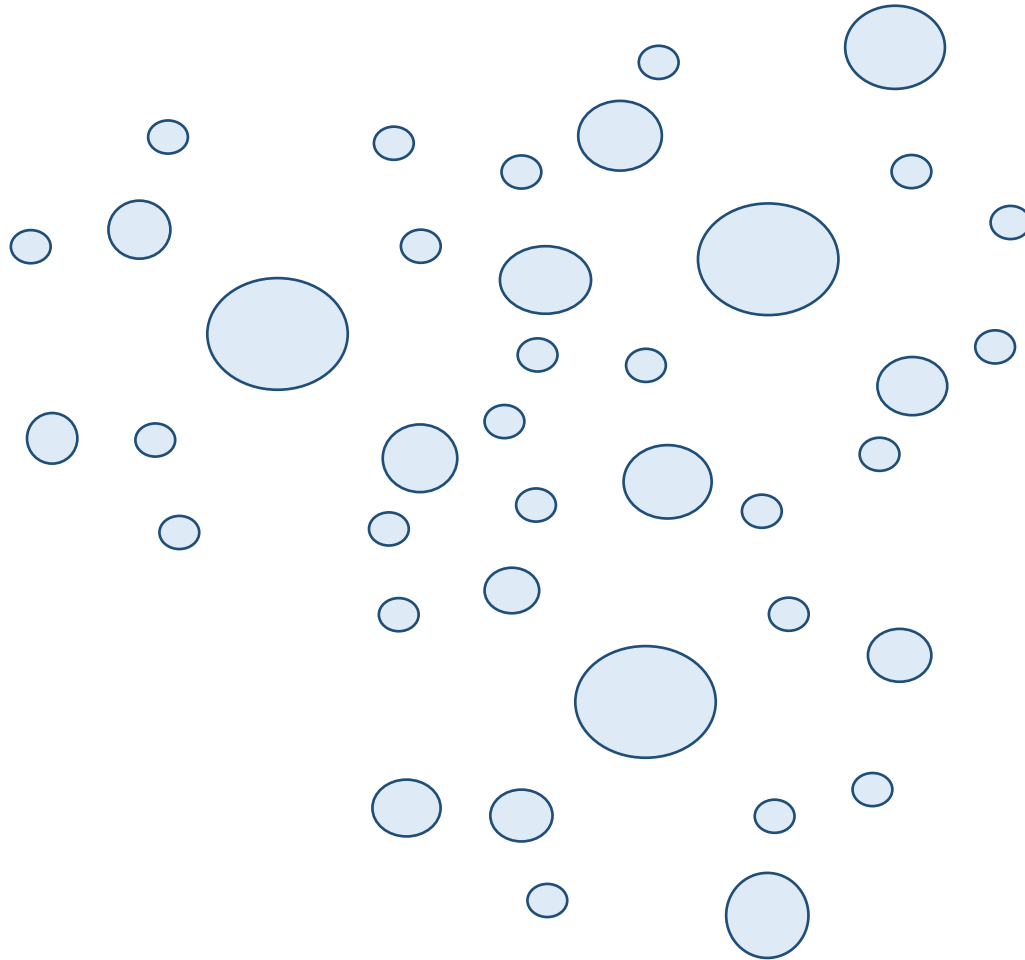


BUNDLE
PAYMENTS

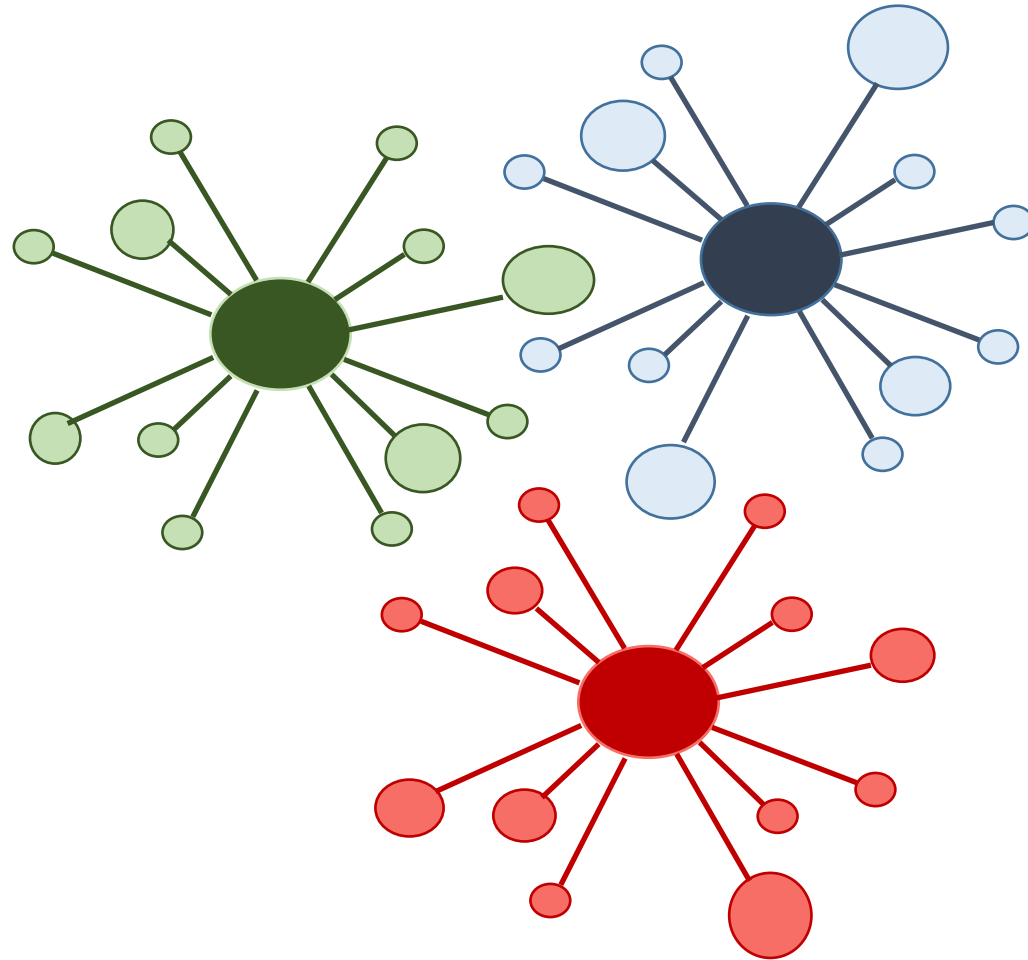


PAY FOR HEALTH
“UPSTREAM”

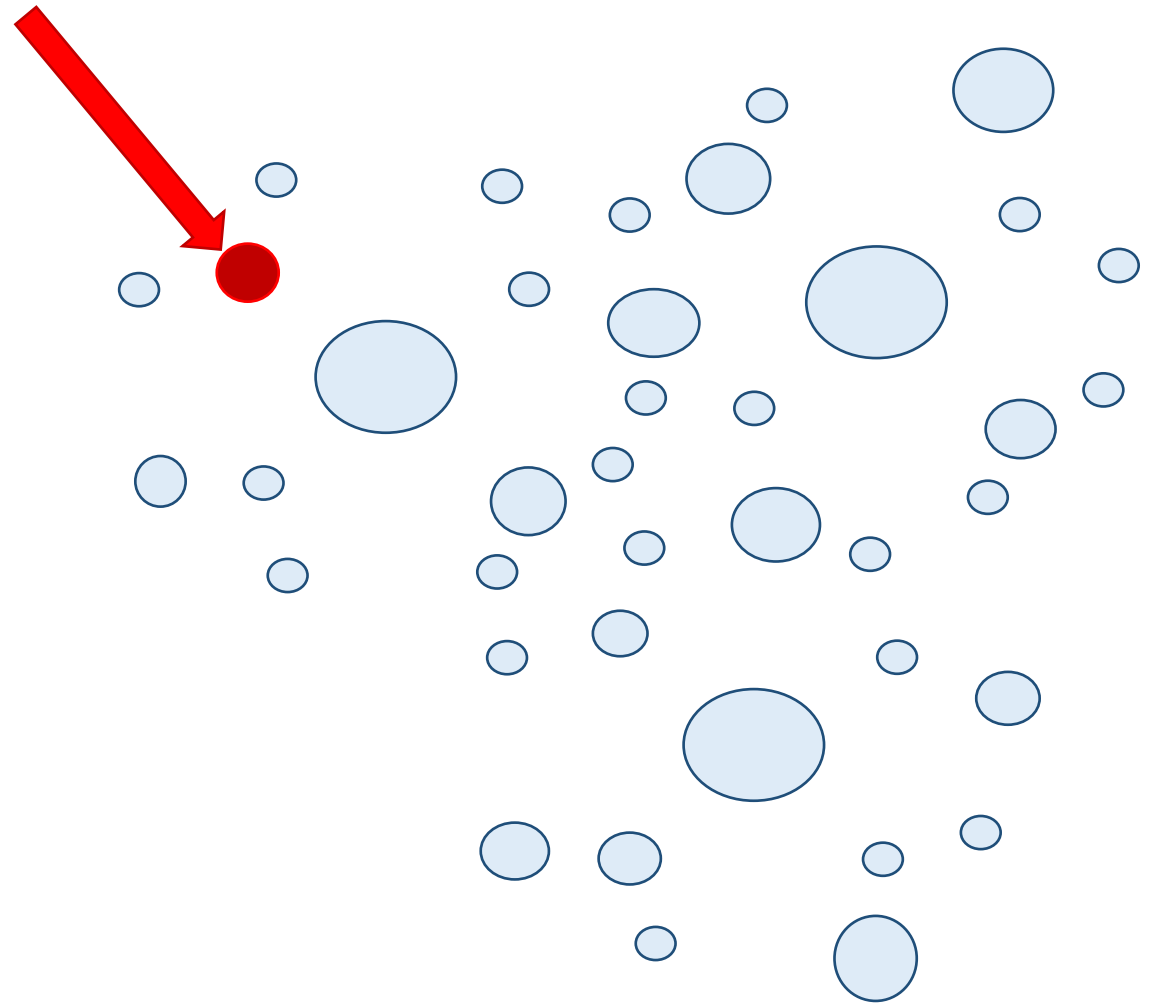
How did Hospitals Respond?



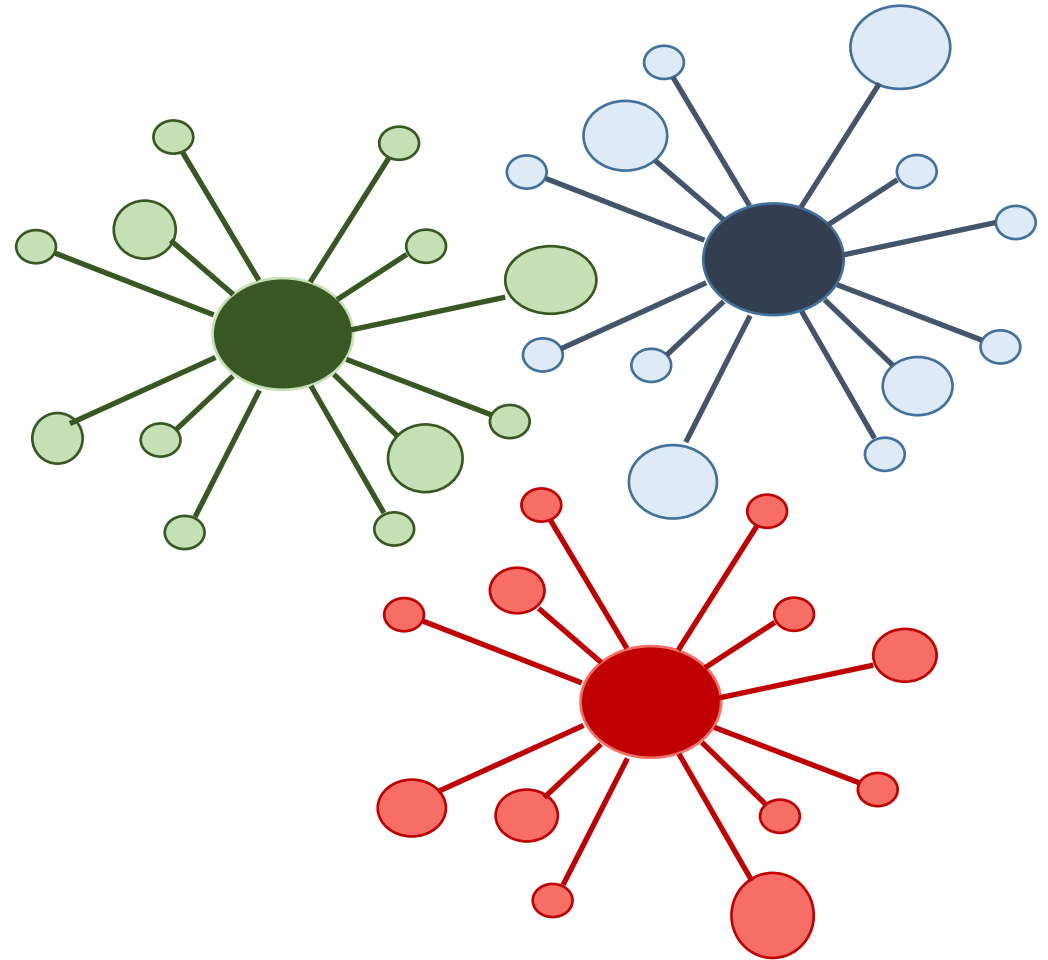
Created Networks to Scale Up Advantages



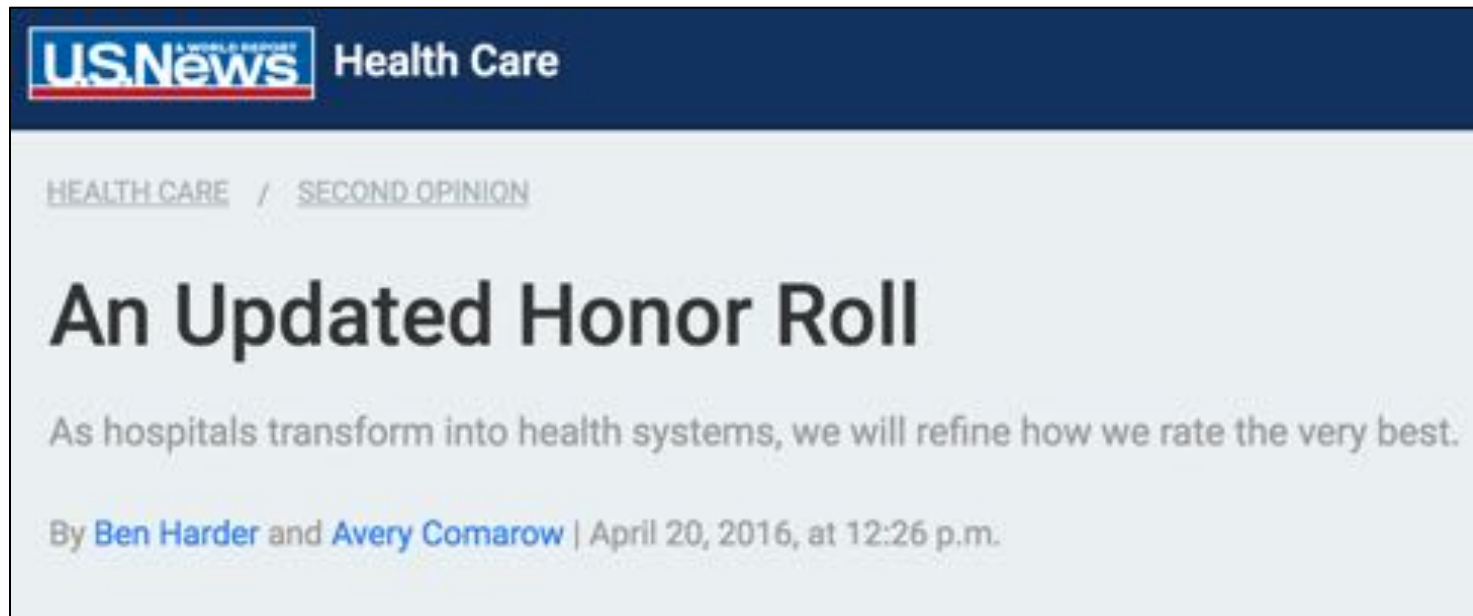
From Designing a Single Hospital...



...Optimizing
Network
Performance.



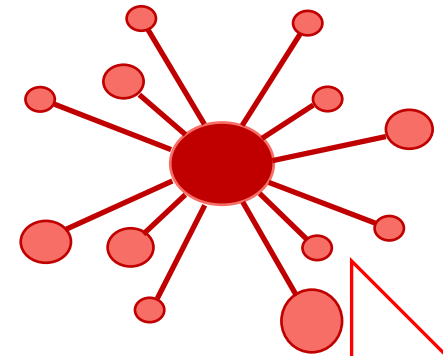
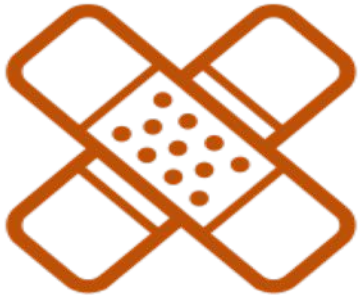
Measuring Network Performance



The screenshot shows the top portion of a news article. At the top left is the 'US News & World Report' logo, followed by 'Health Care'. Below this is a breadcrumb trail: 'HEALTH CARE / SECOND OPINION'. The main title is 'An Updated Honor Roll'. A sub-headline reads: 'As hospitals transform into health systems, we will refine how we rate the very best.' The byline is 'By Ben Harder and Avery Comarow | April 20, 2016, at 12:26 p.m.'

“Rather than seeing an elite provider as a hospital contained within four walls, [we] **envision a web of hospitals of varied sizes and functions within an ecosystem** of primary care clinics, post-acute care facilities, behavioral health services, population health management initiatives and other programs **that benefit whole communities.**”

Single Events to Entire Populations



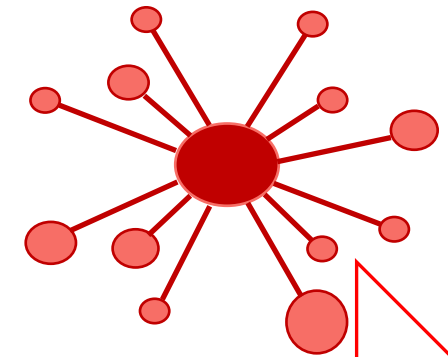
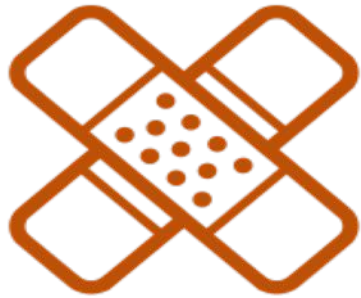
NO PAYMENT
"NEVER EVENTS"

BUNDLE
PAYMENTS

PAY FOR HEALTH
"UPSTREAM"

NEW
NETWORKS

What Year are You Designing For?



NO PAYMENT
"NEVER EVENTS"

BUNDLE
PAYMENTS

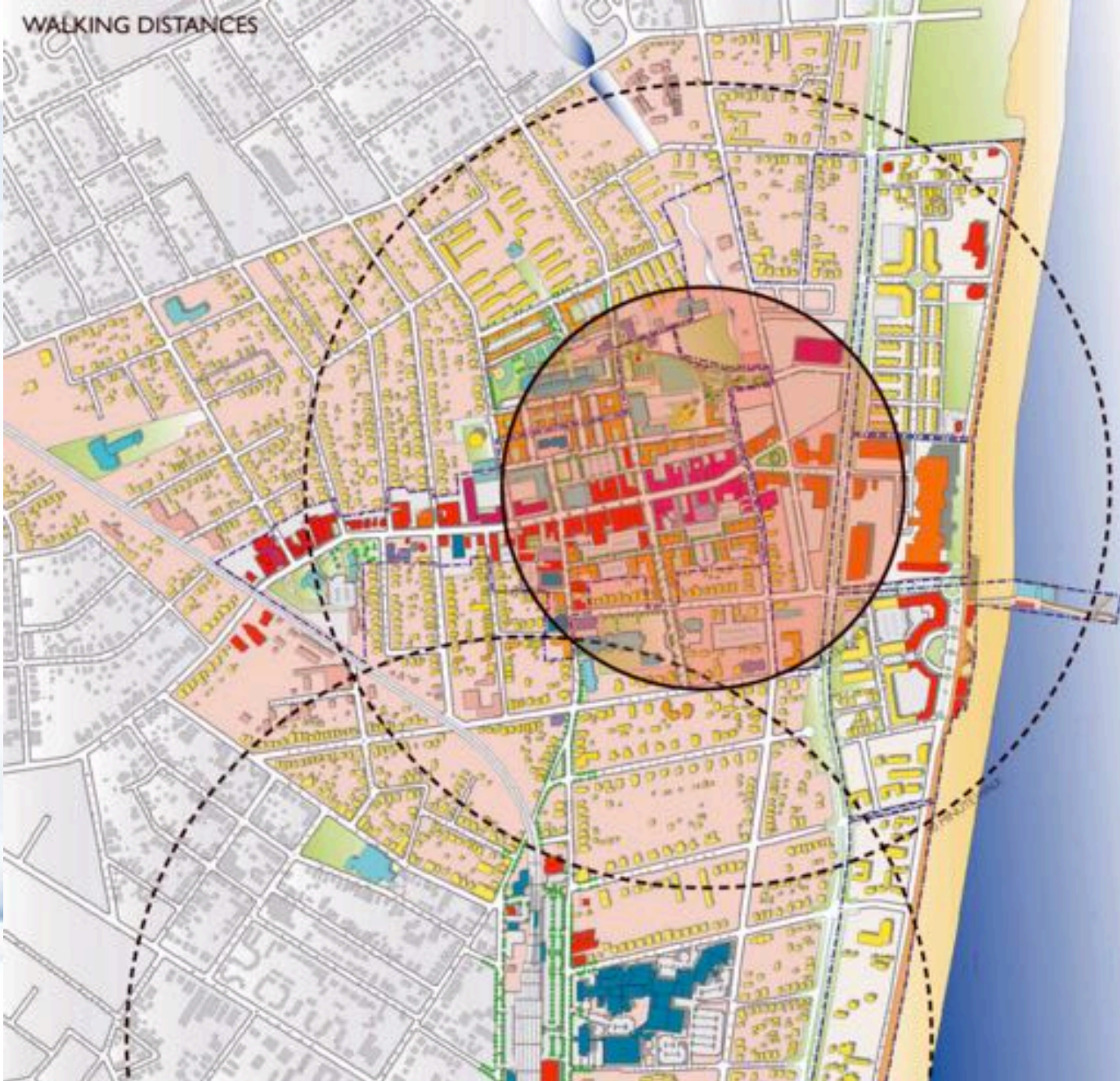
PAY FOR HEALTH
"UPSTREAM"

NEW
NETWORKS

2000

2010

2030+



As the scale and scope of healthcare expands, so do the opportunities for architecture and design.

Now that the Stakes are Higher...

The Era of Ernest Codman (b. 1869)

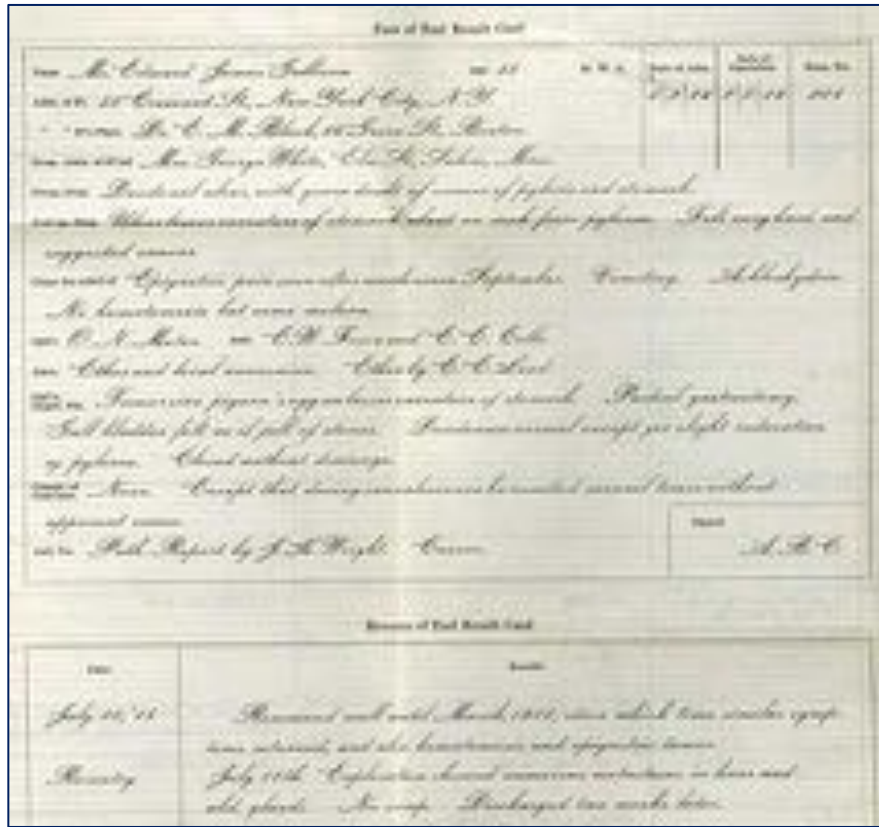


The background of the slide is a detailed historical painting of a medical lecture hall. In the foreground, a lecturer in a white coat stands at a desk, gesturing towards a large group of students. The students, dressed in dark, period-appropriate clothing, are seated in rows, looking towards the lecturer. The room is filled with books and papers, suggesting a serious academic or medical environment.

The “End Results Idea”

The common sense notion that every doctor should follow every patient it treats, long enough to determine whether or not the treatment has been successful, and then to inquire, “If not, why not?” with a view to preventing similar failures in the future. – Ernest Codman

The “End Results Idea”



Complications due to:
“Lack of Judgement”
“Lack of Technical Skill”

M. GEN. TO MED. SCIENCE DE
FOR HER VERY EXISTENCE
FOR ALL HER EXPERT LABOR
AND MUCH MORE

I WONDER IF CLINICAL TRUTH
IS INCOMPATIBLE WITH MEDICAL SCIENCE?
COULD MY CLINICAL PROFESSORS MAKE
A LIVING WITHOUT HUMBING?

BILL HEAD
THE COMMUNITY T
MASS GEN. HOSPITAL
ADMINISTRATION ASSOCIATION
TRUSTED SOCIAL SERVICE
EMERGENCY PATIENTS
BY THE END RESULT EVERY



THE BACK BAY GOLDEN GOOSE-OSTRICH

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THE COMMUNITY T
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CONCENTRATION AREA
TRUSTED SOCIAL SERVICE
FOR THE PATIENTS OF THE
BY THE END RESULT

“So I am called eccentric for saying in public: that hospitals, if they wish to be sure of improvement,
(1) must find out what their results are,
(2) must analyze their results, to find out their strong and weak points;
(3) must compare their results with those of other hospitals...and (8)
must welcome publicity not only for their successes but for their errors.”

THE BACK BAY GOLDEN GOOSE-OSTRICH

Not So Popular....

**CARTOON BY
PHYSICIAN
MAKES STIR**
**Medical Society Is
Divided Over
Action**



First Cancer Registry in the United States (1924)





It may take
100 years for
my ideas to be
accepted.

When
Surgeons
Embraced
Measuring
Outcomes....



National Surgery Quality Improvement Program

Established 1999

>700 Hospitals

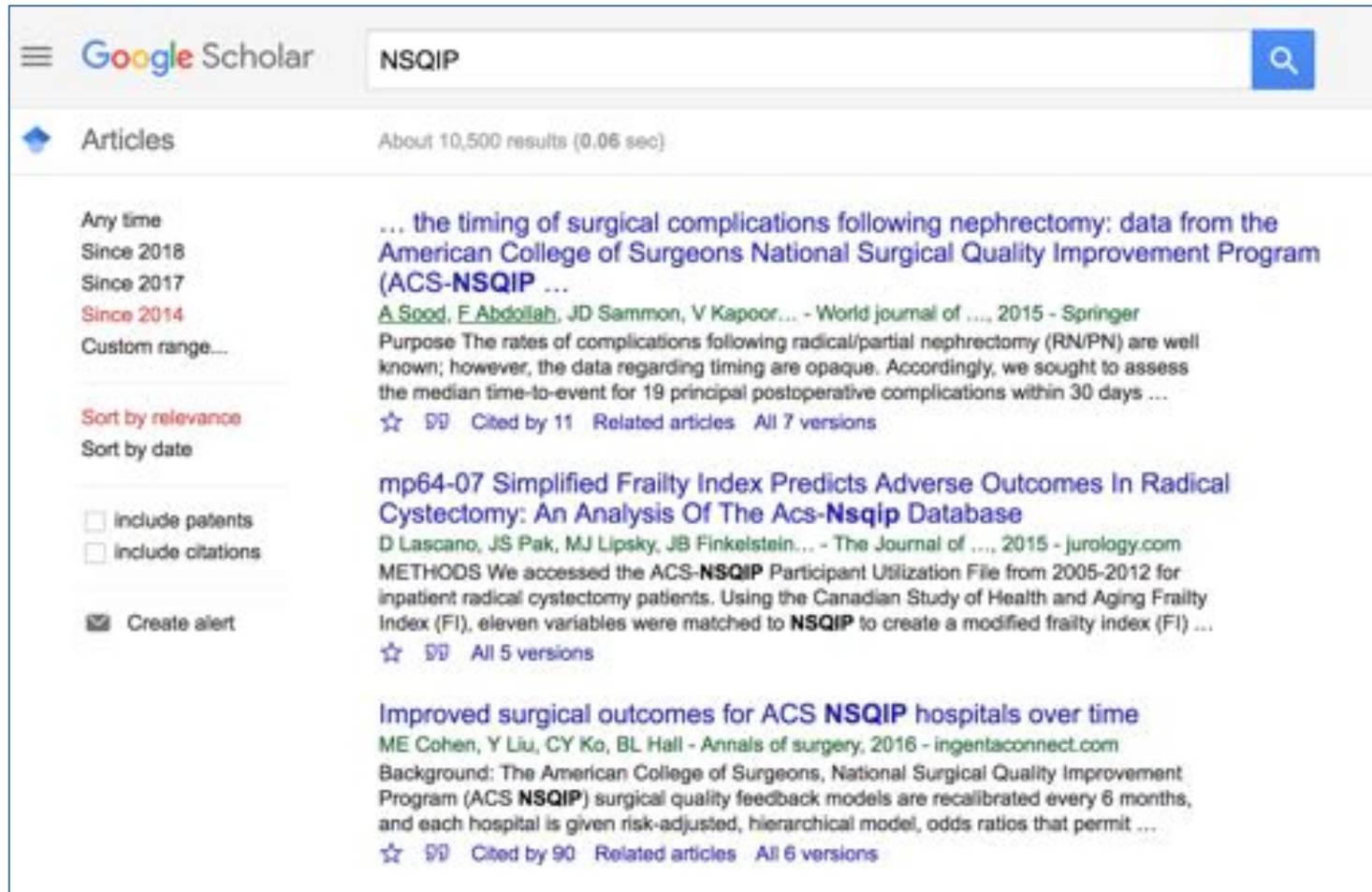
49 of 50 States

9 Countries

Outcomes for >100,000 Procedures Annually

>5.4 Million Patients

The Power of Evidence to Evaluate



The screenshot shows a Google Scholar search for 'NSQIP'. The search results are filtered to 'Articles' and show 'About 10,500 results (0.06 sec)'. The left sidebar contains filters for 'Any time', 'Since 2018', 'Since 2017', 'Since 2014', and 'Custom range...'. The main results list three articles:

- ... the timing of surgical complications following nephrectomy: data from the American College of Surgeons National Surgical Quality Improvement Program (ACS-NSQIP) ...**
A Sood, F Abdollah, JD Sammon, V Kapoor... - World journal of ..., 2015 - Springer
Purpose The rates of complications following radical/partial nephrectomy (RN/PN) are well known; however, the data regarding timing are opaque. Accordingly, we sought to assess the median time-to-event for 19 principal postoperative complications within 30 days ...
☆ ⓘ Cited by 11 Related articles All 7 versions
- mp64-07 Simplified Frailty Index Predicts Adverse Outcomes In Radical Cystectomy: An Analysis Of The Acs-Nsqip Database**
D Lascano, JS Pak, MJ Lipsky, JB Finkelstein... - The Journal of ..., 2015 - jurology.com
METHODS We accessed the ACS-NSQIP Participant Utilization File from 2005-2012 for inpatient radical cystectomy patients. Using the Canadian Study of Health and Aging Frailty Index (FI), eleven variables were matched to NSQIP to create a modified frailty index (FI) ...
☆ ⓘ All 5 versions
- Improved surgical outcomes for ACS NSQIP hospitals over time**
ME Cohen, Y Liu, CY Ko, BL Hall - Annals of surgery, 2016 - ingentaconnect.com
Background: The American College of Surgeons, National Surgical Quality Improvement Program (ACS NSQIP) surgical quality feedback models are recalibrated every 6 months, and each hospital is given risk-adjusted, hierarchical model, odds ratios that permit ...
☆ ⓘ Cited by 90 Related articles All 6 versions

In the last 4 years NSQIP have been used for >10,000 research papers and citations.

The Power of Evidence to Predict

ACS NSQIP Surgical Risk Calculator

Risk Calculator Home Page About FAQ ACS Website ACS NSQIP Website

Enter Patient and Surgical Information

Procedure: 49000 - Exploratory laparotomy, exploratory celotomy with or without biopsy(s) (separate procedure) Clear

Begin by entering the procedure name or CPT code. One or more procedures will appear below the procedure box. You will need to click on the desired procedure to properly select it. You may also search using two words (or two partial words) by placing a '+' in between, for example: "cholecystectomy + cholangiography"

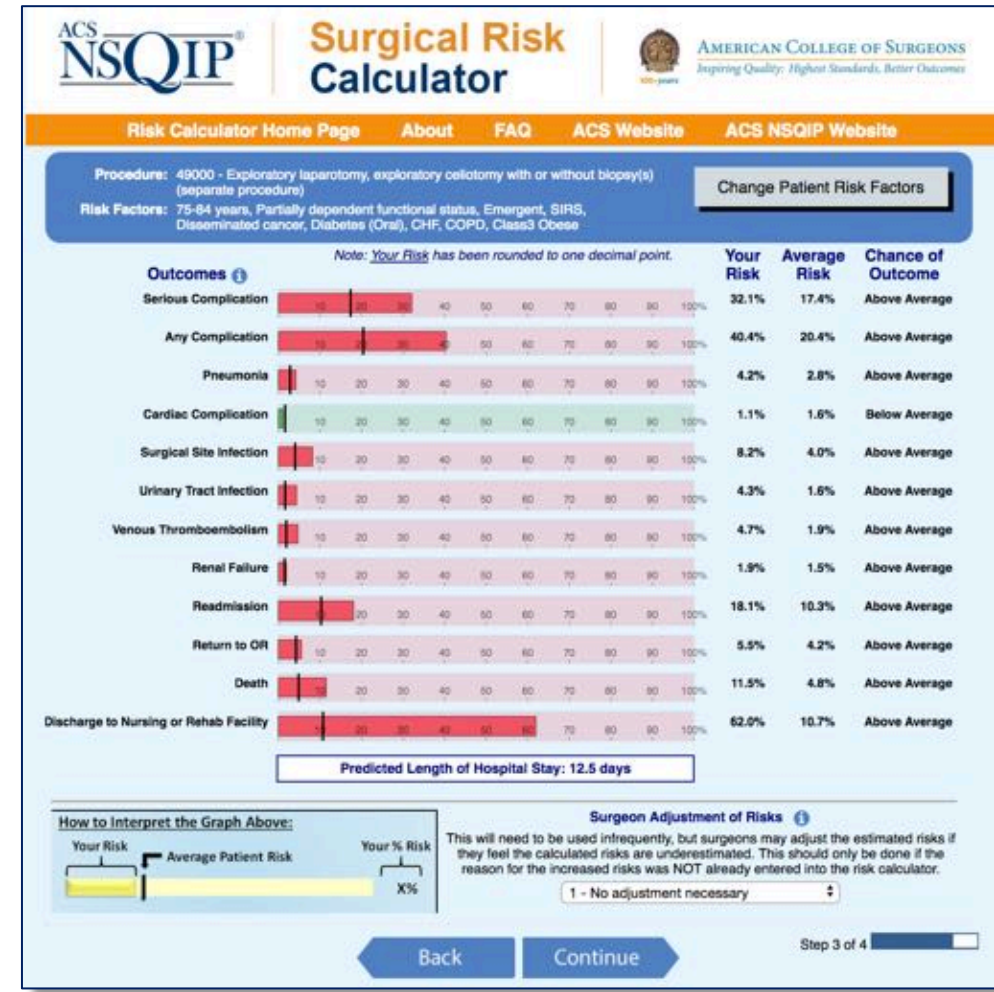
Reset All Selections

Are there other potential appropriate treatment options? Other Surgical Options Other Non-operative options None

Please enter as much of the following information as you can to receive the best risk estimates. A rough estimate will still be generated if you cannot provide all of the information below.

Age Group: Under 65 years
 Sex: Female
 Functional Status: Independent
 Emergency Case: Yes
 ASA Class: Healthy patient
 Steroid use for chronic condition: No
 Ascites within 30 days prior to surgery: No
 Systemic Sepsis within 48 hours prior to surgery: None
 Ventilator Dependent: No
 Disseminated Cancer: No
 Diabetes: No
 Hypertension requiring medication: No
 Congestive Heart Failure in 30 days prior to surgery: No
 Dyspnea: No
 Current Smoker within 1 Year: No
 History of Severe COPD: No
 Dialysis: No
 Acute Renal Failure: No
 BMI Calculation: Height: 5 in / 130 cm, Weight: 130 lb / 60 kg

Back Continue Step 2 of 4



The 'End Results Idea' Beyond Surgery...



The common sense notion that every doctor should follow every patient they treat, long enough to determine whether or not the treatment has been successful, and then to inquire, “If not, why not?” with a view to preventing similar failures in the future.

If Codman was an Architect Talking to Clients



The common sense notion that every [hospital architect] should follow every [hospital they build], long enough to determine whether or not the [hospital] has been successful, and then to inquire, “If not, why not?” with a view to preventing similar failures in the future.

Modified from Codman’s “End Results Idea” (1925) where he advocated (to much controversy) that surgeons track patient outcomes after an operation.

Do You Measure the Outcomes
that Matter to your Clients?

Myths about Measuring Patient Outcomes...

Myth #1: It's Too Hard (Every Patient is Different)

Fact: Tools for risk-adjustment to measure outcomes are now commonplace and standardized

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Fact: Actually builds trust (becoming part of accreditation)

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Myth #2: We'll Look Incompetent (Why expose our faults?)

Fact: Actually builds trust (becoming part of accreditation)

Myth #3: It cost's too much (Who is going to pay for all this?)

Fact: QI programs are associated with annual savings

Myths about Measuring Healthcare Design Outcomes...

Myths about Measuring **Healthcare Design** Outcomes...

Myth #1: It's Too Hard (Every Hospital is Different)

Myth #2: We'll Look Incompetent (Why expose our faults?)

Myth #3: It cost's too much (Who is going to pay for all this?)

The Work Ahead to **Accelerate Collaboration**....

Myth #1: It's Too Hard (Every Hospital is Different)

Develop Robust Methods for Risk-Adjustment of clinical data across multiple design phenotypes

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Demonstrate Return on QI in Hospital Design

How Can We Accelerate Collaboration?

Clinicians



Engage Designers
and Architects into
your Teams

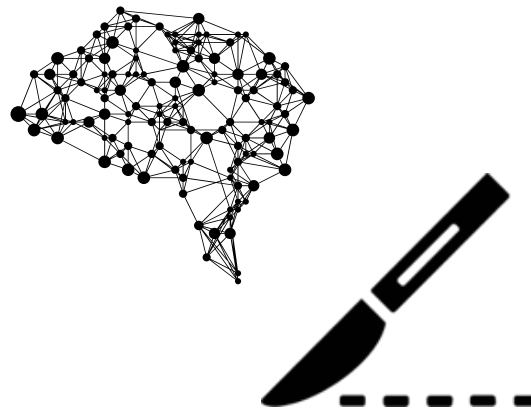
How Can We Accelerate Collaboration?

Clinicians



Engage Designers
and Architects into
your Teams

Architects



Import the Most
Rigorous Methods of
Clinical Medicine

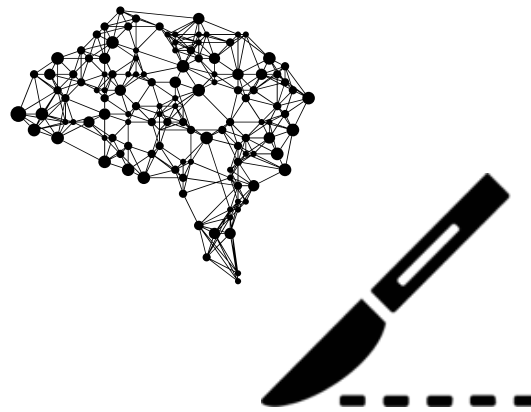
How Can We Accelerate Collaboration?

Clinicians



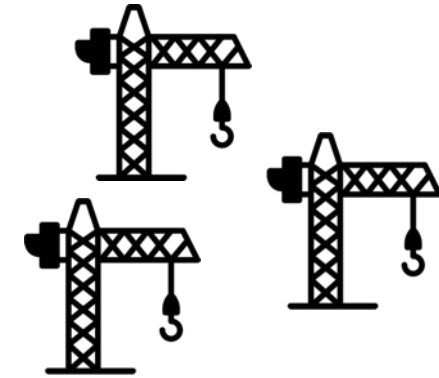
Engage Designers
and Architects into
your Teams

Architects



Import the Most
Rigorous Methods of
Clinical Medicine

Clients



Make Post-Occupancy
Evaluations a Standard Budget
Line of all Contracts

THANK YOU

INSTITUTE FOR HEALTHCARE
POLICY & INNOVATION

Questions

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@andrewmibrahim

www.SurgeryRedesign.com