What New Research Do We Need To Support Ontario's Quality Agenda?

ICES Cardiovascular Research Day

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Ontario
Health Quality Ontario
Qualité des services de santé Ontario

HQO Strategic Roadmap

Vision

A healthcare system that is sustainable, improves continually and uses evidence to optimize population health and provide excellent care for all Ontarians.

Mission

A catalyst for quality, an independent source of information on health evidence, a trusted resource for the public.

Transformative Objectives

Accelerate the use of evidence to deliver demonstrable improvements in the quality of health services	**Drive a culture of quality, value and accountability** throughout the health system in Ontario	Foster **partnerships and integration** among the distinct components of the health system

Overarching Quality Aim

Better outcomes, better experience, better value for money

OUR ROLE

Focus the system to a common quality agenda	Build evidence and knowledge	Broker improvement	Catalyze spread	Evaluate progress
Establish priorities, goals and targets and mobilize system leadership around a common agenda to maximize impact for Ontarians.	Generate or access the evidence and knowledge needed to provide quality care and improve population health, including funding recommendations that set expectations for quality.	Develop the tools and supports needed to accelerate the adoption of evidence-based best practice. Foster the development of quality improvement capacity in the system.	Guide, support and collaborate within the system to spread knowledge about best practices, measurement tools, and implementation strategies. Embed best practices into standards.	Demonstrate accountability by providing timely and relevant health system monitoring, measurement and reporting. Assess progress and report to the public.

Our Values: Transparency, Passion, Innovation, Learning, Integrity, Collaboration

Why Is This Not Terribly Informative About Quality?

MEDICAL CARE
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Patient, Physician, and Community Factors Affecting Referrals to Specialists in Ontario, Canada

A Population-Based, Multi-Level Modelling Approach

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QUESTION ADDRESSED. This population-based study examines the factors affecting referrals by primary care physicians (PCPs) to specialists.

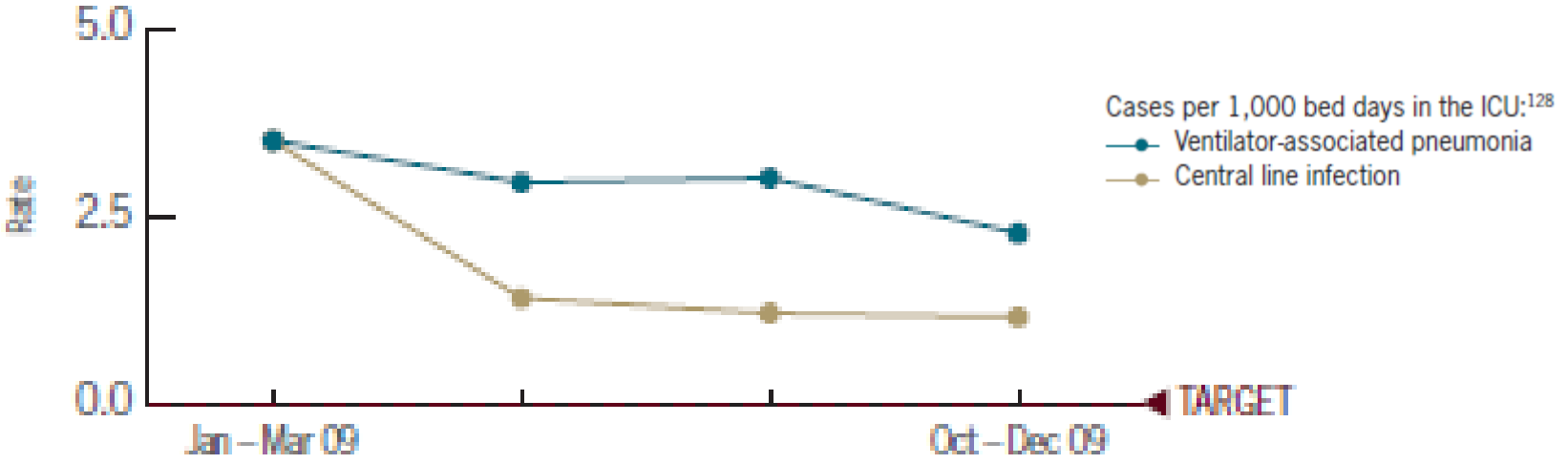
MATERIALS AND METHODS. Multilevel Poisson models were used to test the impact of patient, physician and community-level variables on the referral rate (the number of office-based specialist referrals per patient by the patient's customary PCP in fiscal year 1997/98). Patients from each of 6972 PCPs with sufficient data in Ontario were examined.

RESULTS. The average patient had 0.56 referrals per year (range 0–61). Referrals were higher at ages 1 and 77 to 78, and among women of childbearing age. Chronic disease variables were strongly correlated with referral rates. Patients in poor neighborhoods had more referrals, because they had more chronic diseases. After controlling for disease, individuals in the top 9% wealthiest neighborhoods had 4% more referrals. Female physicians made 8% more referrals than men. Older physicians referred more because they saw older patients; after controlling for patient age, physician age had no effect. Referrals were 14% higher in cities with medical schools compared with other cities and 12% lower in small towns. However, local specialist supply was unrelated to referral rates.

CONCLUSION. This study improves our understanding of the impact of physician gender and age on referrals. It suggests that community type, not specialist supply, predicts variations in referrals. Lastly, it identifies preferential access to specialists among high-income earners, even within Canada's universal health insurance system. However, this effect is modest, suggesting that the system does provide reasonably equitable access to referrals.

Key words: Referral and consultation; family practice; socioeconomic factors; risk adjustment; Canada. (Med Care 2003;41:500–511)

Why Is This a Better Analysis of Quality?



For a typical four-day stay in the ICU,[129] the chance of getting ventilator-associated pneumonia is one in 110, while the chance of getting a central line infection is one in 210. Many hospitals in Canada and the US have eliminated ventilator-associated pneumonia and central line infection[130, 131] by simple protocols such as keeping the head of the bed at 45 degrees and using proper sterile techniques.[132, 133] Ontario hospitals should push for the same.

What We Need to Measure

Quality Attributes

- Accessible
- Safe
- Effective
- Efficient
- Patient-centred
- Equitable
- Integrated
- Appropriately resourced
- Focus on pop health

Not…

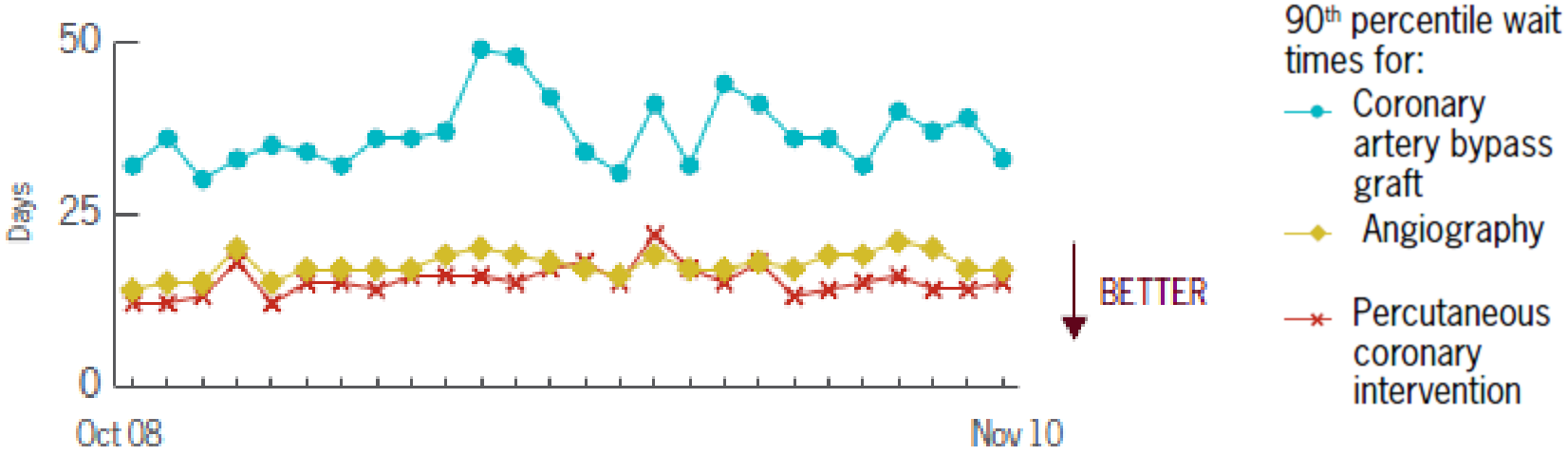
- Utilization measures
- Measures with no desired direction or target
- Admin data with too many caveats on interpretation
- “Elevator” analysis

Focus for Future Research

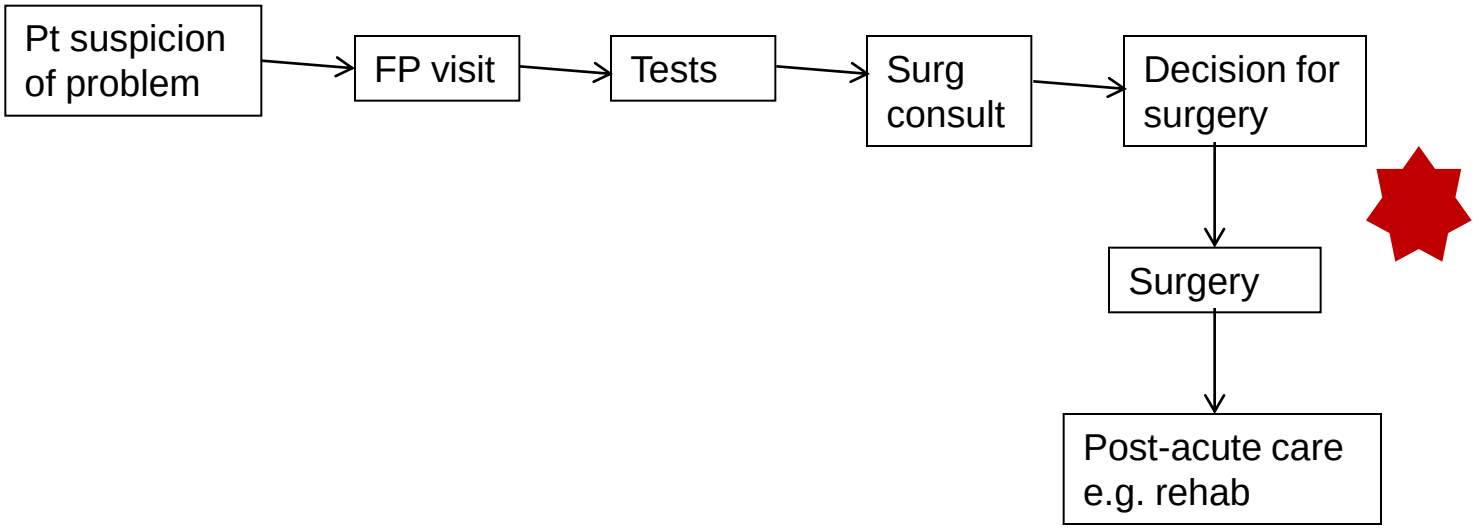
- Design methods to collect new data on true quality measures:
  - Valid, reliable
  - Efficient collection (e.g. ok to sample)
  - Sustainable, for continuous monitoring
  - Real-time
  - Flexibility on detail
    - High-level when monitoring; detailed level when improving

Wait Times

- Lots of data… what's missing?

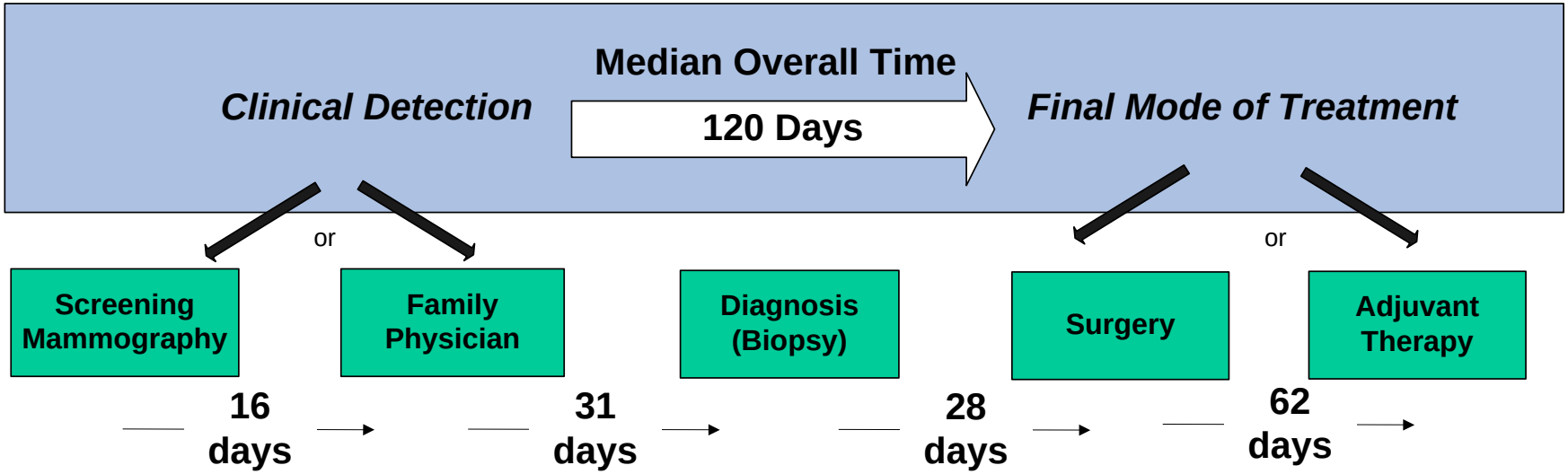


Wait Times


Pt suspicion of problem
FP visit
Tests
Surg consult
Decision for surgery
Surgery
Post-acute care e.g. rehab

Wait Time Components

Cancer, Saskatchewan 2006



Hormone	47 days
Chemotherapy	57 days
Radiation	91 days

Accessibility

- Current approaches view only small portion of patient journey
- Past studies on full journey suggests waits in other parts of journey as long, if not longer than surgical wait

- What can we do to routinely track the entire patient journey?
  - Admin data
  - Patient surveys
  - Design database

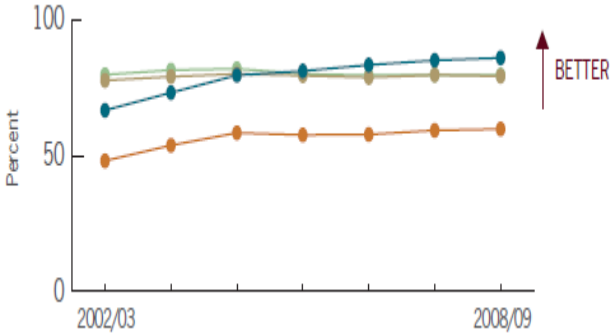
Effectiveness

- Was the CABG, PCI or other procedure a success?

- Mortality data exist
- Clinical assessment
  - Stages (e.g. NYHA stages for CHF)
  - Exercise tolerance
  - Surgical site infections
- Patient-reported outcome measures
  - Pain
  - Physical functioning / ADLs
- Data sources? Add to existing patient surveys?

Effectiveness
Chronic Disease Management

- What have we reported in the past?

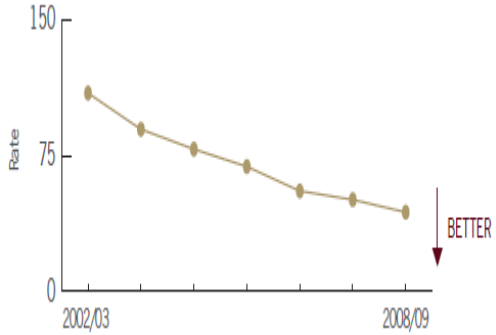


Percentage of elderly patients with AMI who, within 90 days of discharge, filled a prescription for the recommended drugs:

- Statin
- Beta-blocker
- ACEI/ARB
- All three at once

Percentage of people with diabetes for more than a year who had a serious diabetes complication within a year:

- Any serious complication
- Surgery for circulation problem (including amputation)
- Death
- Heart attack
- Stroke
- Kidney failure

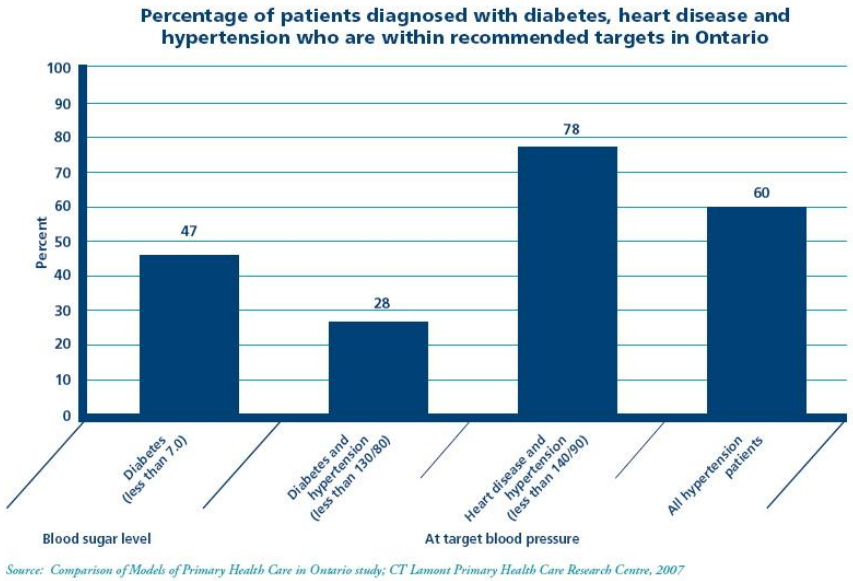


Hospital admission rates per 100,000 population for:

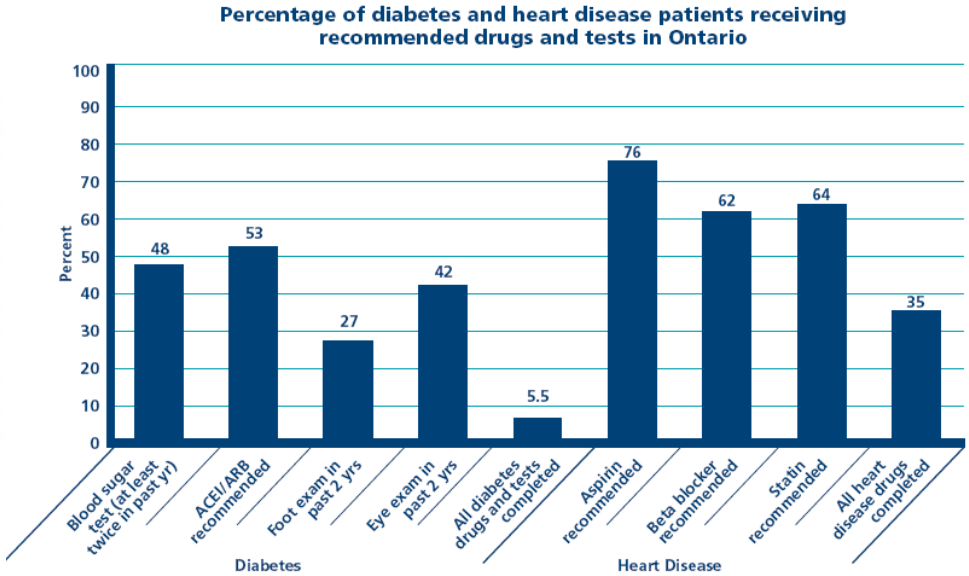
- Angina

Effectiveness
Chronic Disease Management

- What have we reported in the past?



Source: Comparison of Models of Primary Health Care in Ontario study; CT Lamont Primary Health Care Research Centre, 2007



Source: Comparison of Models of Primary Health Care in Ontario study; CT Lamont Primary Health Care Research Centre, 2007

- Data from one-time chart audits

Effectiveness: Desired Measures

- HQO upcoming recommendations on primary care EMR vendor specifications
- Possibilities:
  - Standardized flow sheets for CDM
  - Standard process for identifying patients with a condition
    - Eg. Prompt physician to confirm diabetes dx if new Rx for diabetes drug, or new note in chart re diabetes
  - Key standardized indicators
    - E.g. BP, lipid, A1c control, use of evidence-based drugs, BMI / obesity, smoking, physical activity, patient goals, current sx control
    - Can we create a global measure of effectiveness of CDM?

Appropriateness

- Expectations: $150 million / year savings

- What are indications for procedures?
- What data are collected on indications?
- Where is inappropriateness occurring?

Appropriateness Methods

- RAND/UCLA Appropriateness Method
  - Integrate scientific evidence with clinical judgement to produce explicit criteria
  - Have experts rate appropriateness of a series of clinical scenarios
  - Criteria used to classify care as necessary, appropriate, equivocal or inappropriate

» AE Barnato, AM Garber. Performance of the RAND appropriateness criteria. Med Decision Making 2003: 23(2); 177-9.

» RH Brook. Assessing the Appropriateness of Care—Its Time Has Come. JAMA 2009; 302(9); 997-8.

Appropriateness Criteria

- What are examples of criteria that currently exist?
  - ACCF/SCAI/STS/AATS/AHA/ASNC/HFSA/SCCT 2012 Appropriate Use Criteria for Coronary Revascularization Focused Update
    - » http://content.onlinejacc.org/cgi/content/full/j.jacc.2011.12.001v1
  - ACCF/ACR/SCCT/SCMR/ASNC/NASCI/SCAI/SIR 2006 Appropriateness Criteria for Cardiac Computed Tomography and Cardiac Magnetic Resonance Imaging
    - » J Am Coll Cardiol, 2006; 48:1475-1497, doi:10.1016/j.jacc.2006.07.003

Research Agenda on Appropriateness?

- HQO's role – evaluate evidence on appropriateness for selected technologies/services each year
- Other opportunities for research community:
  - Develop criteria or validate criteria developed elsewhere
  - Design, optimize methods how criteria will be used
    - embed into computerized order entry system?
    - Patient and physician input to produce appropriateness rating?
  - Develop data collection system on appropriateness rating for services provided

Equity

- Current approaches:
  - Ecological analysis – inferred SES from postal code
  - Population survey data

- Future?
  - EMR – standard fields
  - Link aboriginal status data

Benchmarking

- "something that serves as a standard by which others may be measured or judged" - Merriam-Webster

- What standard?
  - Average? median? 75th %ile?

- HQO's vision: aspirational benchmarks
  - "Who has the best results that everyone should copy?"
  - "Why not the best?"

Why Need for Benchmarking?

- Excellent Care for All Act 2010
- 8. (1) In every fiscal year, every health care organization shall develop a quality improvement plan for the next fiscal year and make the quality improvement plan available to the public.
- (3) The annual quality improvement plan must contain ,at a minimum,
- (a) annual performance improvement targets and the justification for those targets;
- (b) information concerning the manner in and extent to which health care organization executive compensation is linked to achievement of those targets;

2011 Quality Improvement Plans: An Analysis for Learning

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Approaches to Setting Stretch Targets in Ontario QIPs

- 1: aim for theoretical maximum
  - eg move from 93% to 100% compliance with surgical checklist
- 2: aim for best achieved elsewhere
  - Queensway Carleton: VAP and CLI rate of zero (from .57, .51 respectively)
- 3: cut the defects/waste in half
  - St Mike's: move hand hygiene from 65% to 80%
  - Scarborough General: VAP 1.93 to 0.75 per 1000 vent-days

Common Approaches to Setting Stretch Targets

- 4: match rate of improvement achieved by others
- 5: match the average
  - (ONLY if far below average at baseline)

Examples of “Not So Stretch” Targets

- Very modest targets set

Topic	Current Performance	Goal	Priority
30 day readmission rate	14.6%	14.4%	2
Hand hygiene	79%	80%	1
VAP	1.10	1.10	1
Surgical checklist compliance	93%	93%	2

Examples of "Not So Stretch" Targets

- Target set was worse than current performance

	Baseline	Target	Priority
ER – 90%ile wait, admitted patients	21.4	25.0	1
ER – time to MD assessment	2.9 hrs	3.2 hrs	1
HSMR	83	<100	3
Hand hygiene	77%	75%	2
C difficile	0.14	0.34	3
Central Line Infections	0	1.17	2
VAP	1.04	2.6	3

What Research Is Needed to Verify a Best Performer Benchmark?

- Account for case-mix, SES, other differences
- For survey data, account for differing expectations
- What was the purposeful change that was implemented when improvements were noted?
  - Change in process? Decision supports? Data / individual feedback? Resources? Accountability & incentives? Pt engagement? Staff skills development & verification?
- Verify data quality
- Methods:
  - Lit review? Site visit? Structured interviews with management & staff?

Examples of Currently Proposed Best Practice Benchmarks

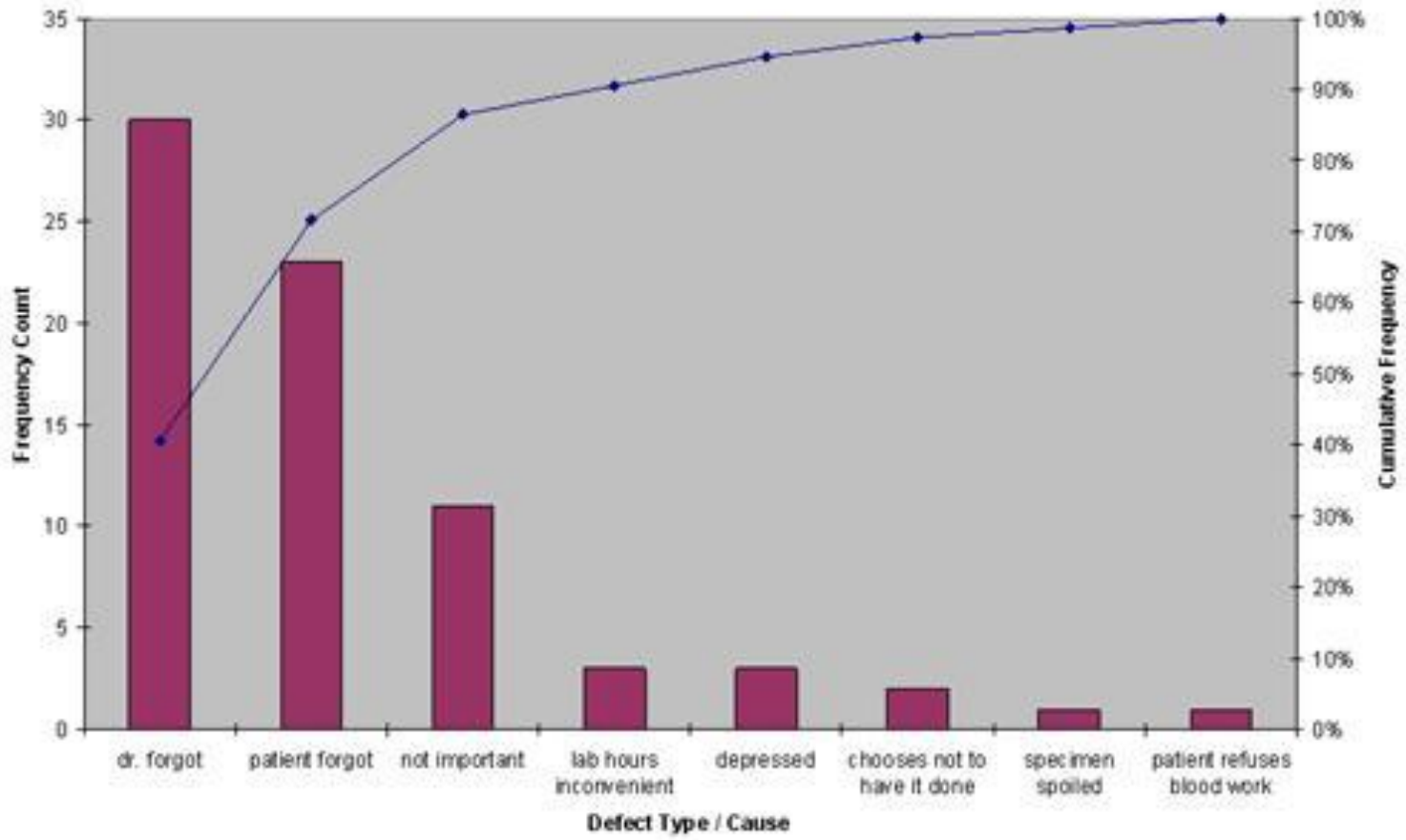
- VAP, CLI: zero
- Hand hygiene: ~ 92% (best performers)
- % definitely recommend to others: ~ 85%
- restraint use: approaching zero

Pareto Charts ("The Vital Few")

- Research question to support QI efforts: What are the common causes of poor quality? Is there a Pareto effect (20% of causes cause 80% of problems?)

- Assist QI teams in identifying priorities for improvement
  - What are the characteristics of those who get poorest quality?
  - Which regions have poorest quality?
  - Which clinical processes are most commonly broken? What is impact?

Pareto Charts



- Example for labs not completed

Key Research Questions

- What is the level of quality?
  - Develop measures in priority areas where data not collected
- Who has the best results that should be copied by all?
- What are predictors of poor quality?

Checklist for Reviewing Research for Relevance to Quality Improvement

- Is it measuring one of the attributes of quality?
- Does the measure have a clearly desirable direction?
- Is there a specific target that can be defined, based on theoretical best or best performance?
- Can you make a definitive statement that quality is ‘good’ or ‘not good enough’?
- Can data on the indicator be collected readily and indefinitely at reasonable cost?
- Can data be made available in real time?

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