Introduction to Implementation Science
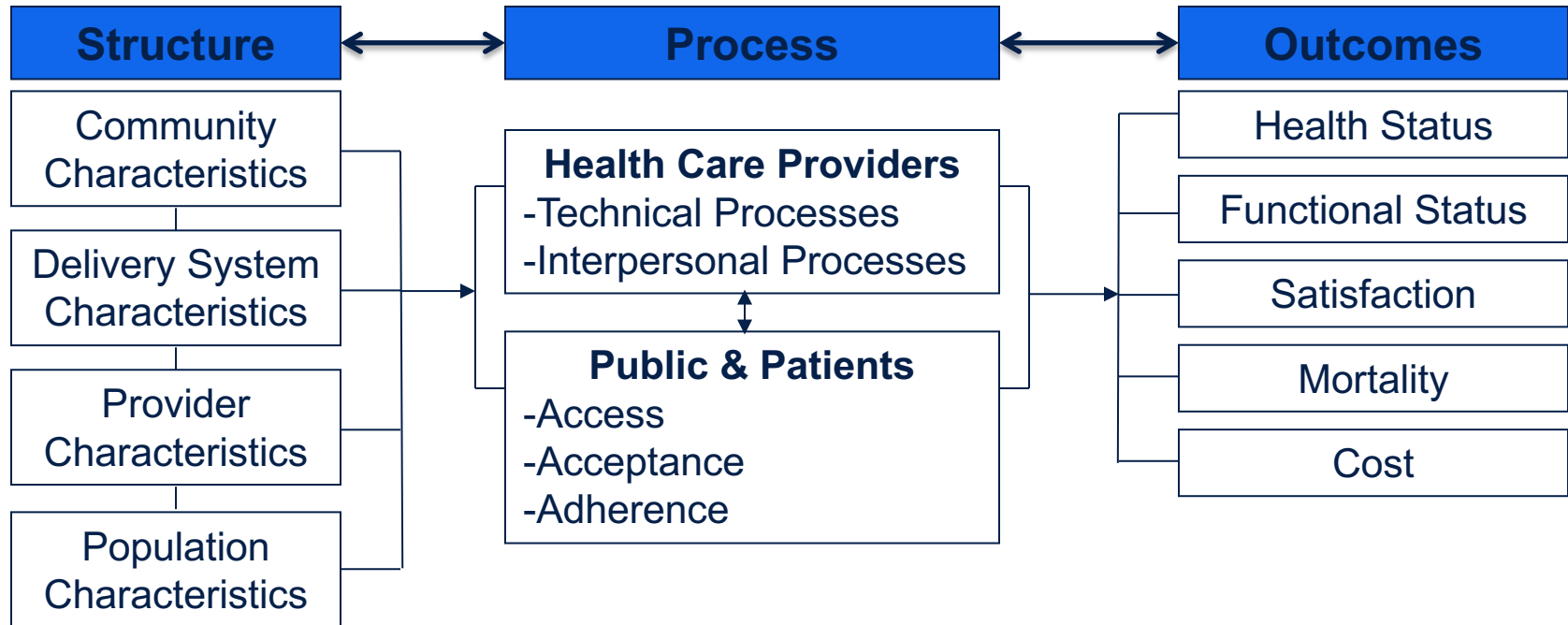## *Part 2: Making the Case for Translation*

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Making the case for translation

Justify that a health care intervention should be translated into practice, policy or public health

- Frame evidence as a quality of care issue
- Quantify the performance gap
- Link performance gap to an outcome gap

Assessing the Quality of Health Care

Structure	⟷	Process	⟷	Outcomes

Structure
- Community Characteristics
- Delivery System Characteristics
- Provider Characteristics
- Population Characteristics

Process

Health Care Providers
- Technical Processes
- Interpersonal Processes

↕

Public & Patients
- Access
- Acceptance
- Adherence

Outcomes
- Health Status
- Functional Status
- Satisfaction
- Mortality
- Cost

Donabedian A. *JAMA* 1988;260:1743-8

Evidence translation → Improved Quality of Health Care

Outcomes*	Examples
-Safety	-Error rates
-Effectiveness	-Mortality/morbidity, QoL
-Efficiency	-Cost per QALY/DALY
-Equity	-Subgroup analyses
-Patient-centered	-Satisfaction
-Timeliness	-Access

* Based on Institute of Medicine Pillars of Health Care Quality

Measuring Process When Guidelines Exist

- Guidelines serve as external benchmarks → Performance indicators

- Performance Gap = Expected minus observed care

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Sources of Performance Indicator Data

National Surveys/Reports

Behavior	**Data Sources**
–Public/Patient	U.S. – NHIS, NHANES, BRFSS, MEPS LMIC – ?
–Provider	U.S. – NAMCS; NHAMCS LMIC – ?
–Delivery System	U.S. – NHDS, NCQA; Hospital Compare LMIC – ?

NHIS: National Health Information Survey
NHANES: national Health and Nutrition Examination Survey
BRFSS: Behavioral Risk Factor Surveillance System
MEPS: Medical Expenditure Panel Survey

NAMCS: National Ambulatory Medical Care Survey
NHAMCS: National Hospital Ambulatory Medical Care Survey
NHDS: National Hospital Discharge Survey
NCQA: National Center for Quality Assurance

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Example: Delivery system performance indicator data

National Committee for Quality Assurance

HEDIS Performance Indicator	Performance gap
▪ Beta-blocker for 6 months post MI	10-19%
▪ Breast cancer screening	26-42%
▪ Colorectal cancer screening	36-43%
▪ Controlling high BP	36-43%
▪ Comprehensive diabetes care	36-55%
▪ Cholesterol management	42-60%
▪ Chlamydia screening	49-62%
▪ Spirometry testing for COPD	57-69%

2014 State of Healthcare Quality Report, **www.ncqa.org**

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Performance indicator data not available?

- Measure it yourself

- Example: What proportion of patients presenting to community health centers in Uganda are evaluated for TB in accordance with guidelines
  - Developed indicators to reflect guideline-recommended care
  - Collected data to assess indicators at 6 health centers in Uganda

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Example: Adherence to guidelines for TB evaluation

Q1 2009 (14,852 patients → 365 with cough ≥2 weeks)		
Performance Indicator	**Observed**	**Gap**
Indicator 1: Referred for TB testing	21%	79%
Indicator 2: Completed TB testing (if referred)	71%	29%
Indicator 3: Treated for TB (if smear-positive)	73%	27%
Guideline-adherent care	11%	89%

Davis JL. AJRCCM 2011

Measuring Quality When No Guidelines Exist

- Analysis of variation in clinical practice
  - Country to Country
  - Region to Region
  - Across different healthcare facilities

- Why practice variation?
  - Wide variation unlikely due to illness severity or patient factors
 - Reflects clinical practice that is idiosyncratic and/or unscientific

Sources of practice variation data

Administrative claims data
– Administrative data collected as a result of "claims" submitted by physicians/practices for reimbursement.

- Medicare (UB-92): No pharmacy data
- Medicaid (Drug Utilization Review)
- Integrated Delivery Systems (Kaiser; Geisinger; etc)
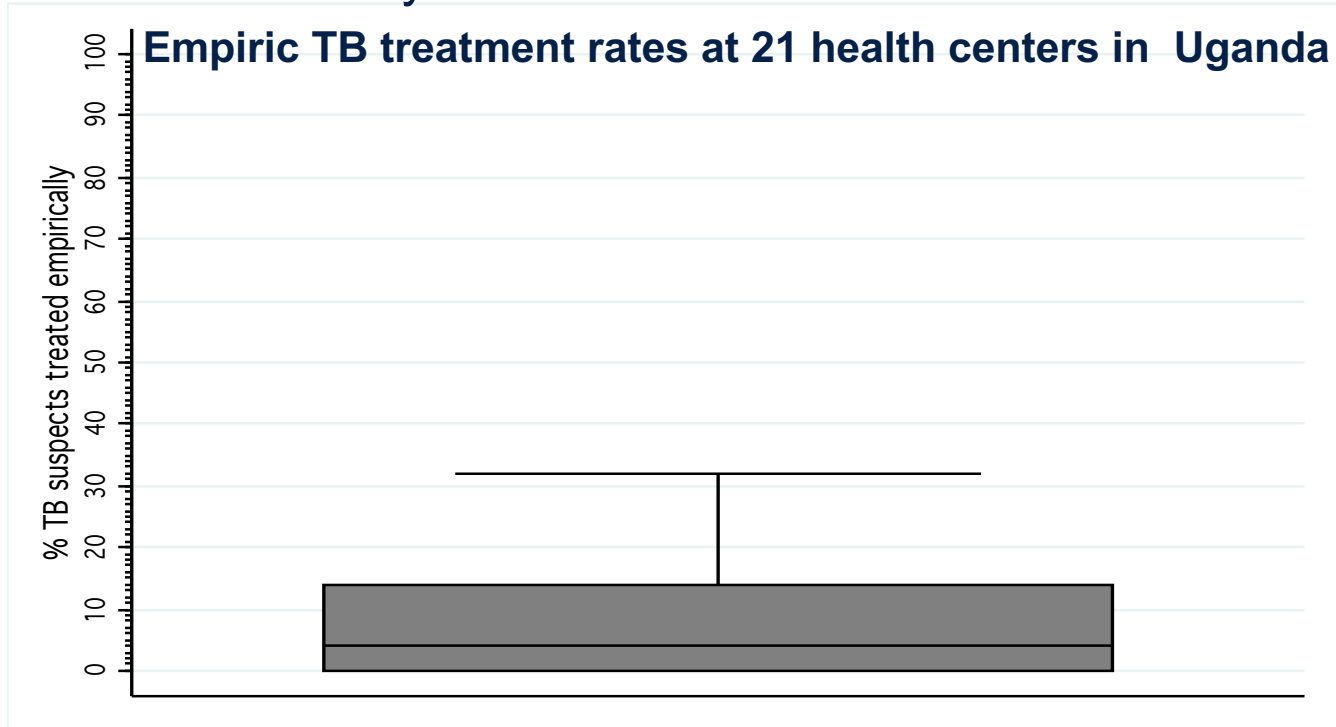- Managed Care Organizations

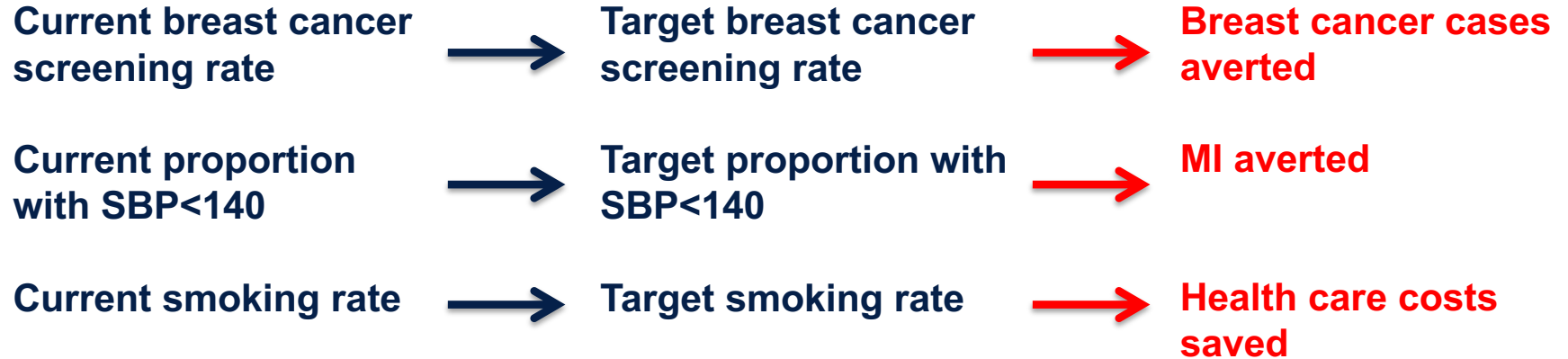# Example: Administrative Claims Data

CABG rates per 1000 Medicare enrollees, 2012
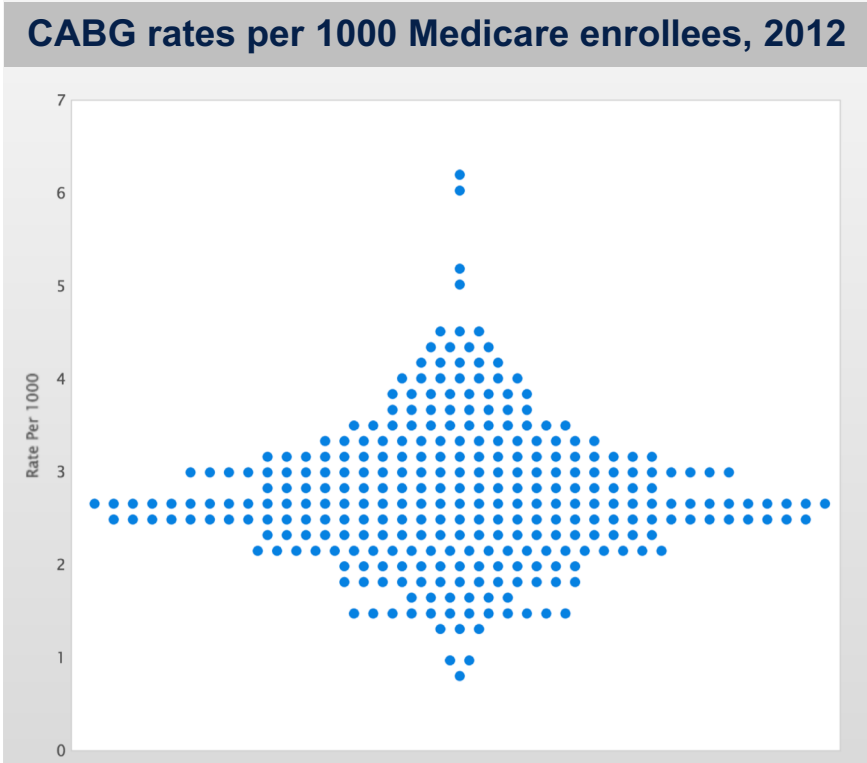
-from Dartmouth Atlas: www.dartmouthatlas.org

Claims Data Not Available?

- Measure variation yourself

Empiric TB treatment rates at 21 health centers in Uganda

(y-axis: % TB suspects treated empirically, scale 0–100)

Link Performance Gap to an Outcome Gap

Current breast cancer screening rate → **Target breast cancer screening rate** → **Breast cancer cases averted**

Current proportion with SBP<140 → **Target proportion with SBP<140** → **MI averted**

Current smoking rate → **Target smoking rate** → **Health care costs saved**

Link practice variation data to an outcome of interest

Antibiotic utilization = Antibiotic resistance
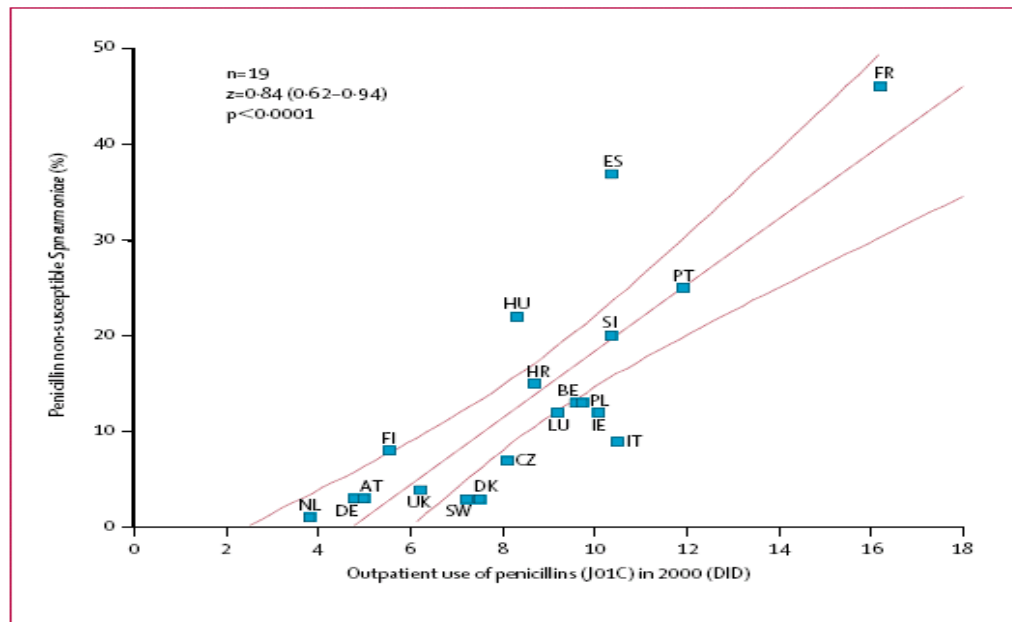
Figure 6: Correlation between penicillin use and prevalence of penicillin non-susceptible S pneumoniae
AT, Austria; BE, Belgium; HR, Croatia; CZ, Czech Republic; DK, Denmark; FI, Finland; FR, France; DE, Germany; HU, Hungary; IE, Ireland; IT, Italy; LU, Luxembourg; NL, The Netherlands; PL, Poland; PT, Portugal; SI, Slovenia; ES, Spain; UK, England only.

The public health and business case

FIGURE 10. AVOIDABLE DEATHS AND MEDICAL COSTS DUE TO UNEXPLAINED VARIATIONS IN CARE: SELECT MEASURES AND CONDITIONS, U.S. POPULATION, 2006

MEASURE	AVOIDABLE DEATHS	AVOIDABLE HOSPITAL COSTS
Beta-Blocker Treatment After a Heart Attack	500 - 1,200	$6.1 million - $10.8 million
Breast Cancer Screening	200 - 700	$89 million
Cervical Cancer Screening	600 - 800	N/A
Cholesterol Management	4,400 - 9,400	$20.1 million - $60.9 million
Colorectal Cancer Screening	6,000 - 12,600	$284 million - $411 million
Controlling High Blood Pressure	9,200 - 22,800	$292 million - $708 million
Diabetes Care - HbA1c Control	7,100 - 15,900	$1.3 billion - $1.7 billion
Osteoporosis Management	N/A	$9.9 million - $10.4 million
Prenatal Care	1,000 - 1,600	N/A
Smoking Cessation	7,000 - 10,700	$673 million - $725 million
TOTAL	**35,000 - 75,000**	**$2.7 billion - $3.7 billion**

Evidence-Practice Gap Summary

- Frame evidence as a quality of care issue - Improving the quality of care (*i.e., <u>translation of your evidence</u>*) should maximize

  - Safety, effectiveness, efficiency, patient-centeredness, and timeliness and eliminate disparities in care

- To make the case for ***<u>investing</u>*** in translating your evidence into practice

  - Measure current performance, determine the performance gap, and link the performance gap to an outcome gap