Using Qualitative Process Data to Validate Quantitative Outcome Conclusions

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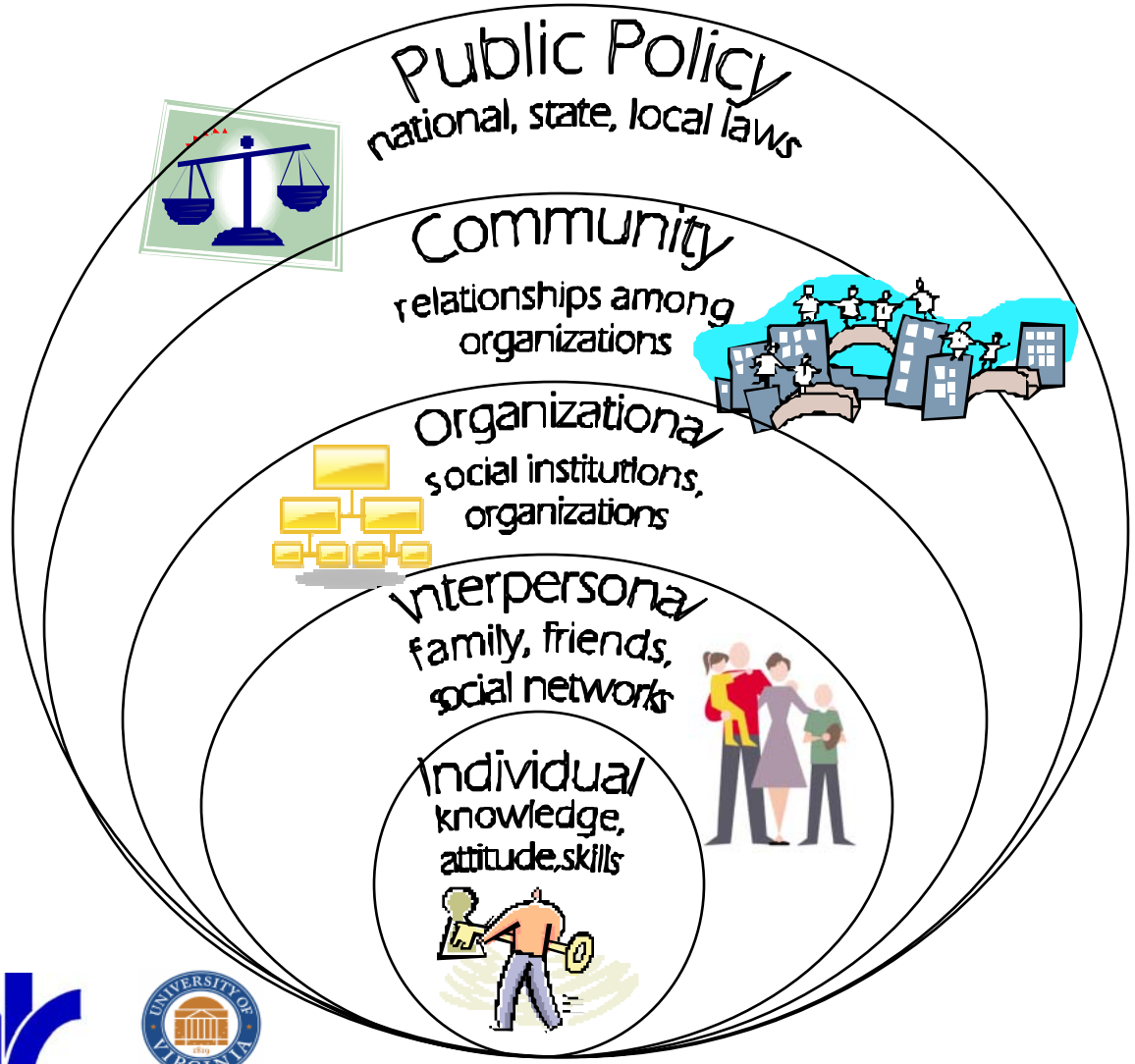
The Grant

- Controlling Asthma in Richmond Metropolitan Area (CARMA)
  - CDC-funded, multi-site, 7 year project
  - Multi-agency collaboration at each site
  - improve asthma symptom management for children in the Richmond metropolitan area (RMA).
- First two years of funding: needs assessment and community planning.
- Five years of implementation funding began in July 2003.

Community Pediatric Asthma Management Program



- Focus on preventive care
- Community-based:
  - -coalition
  - -needs assessment
  - -interventions
- Evidence-based strategies
- Ecological approach to asthma services

The Evaluation Charge:

- Non-Research
- Multi-level analysis
  - Individual level based on interventions
  - Population level outcomes: ED and hospitalizations
  - System change evaluation: Sustainability and institutionalization

The Evaluation Challenges:

- Meeting evolving needs of funders and partners
- Dependency on partner organizations
  - Added burden of data collection on front line staff
  - Protecting identity of program participants
  - Frequent turn-over, reconfigured responsibilities & changing priorities
- Appropriate follow-up to identify sustained program effects
- Access to appropriate community level data and comparison data
- Appropriate strategies to identify non-controlled mediating and modifying variables
- **Adding "depth" to quantitative "breadth"**

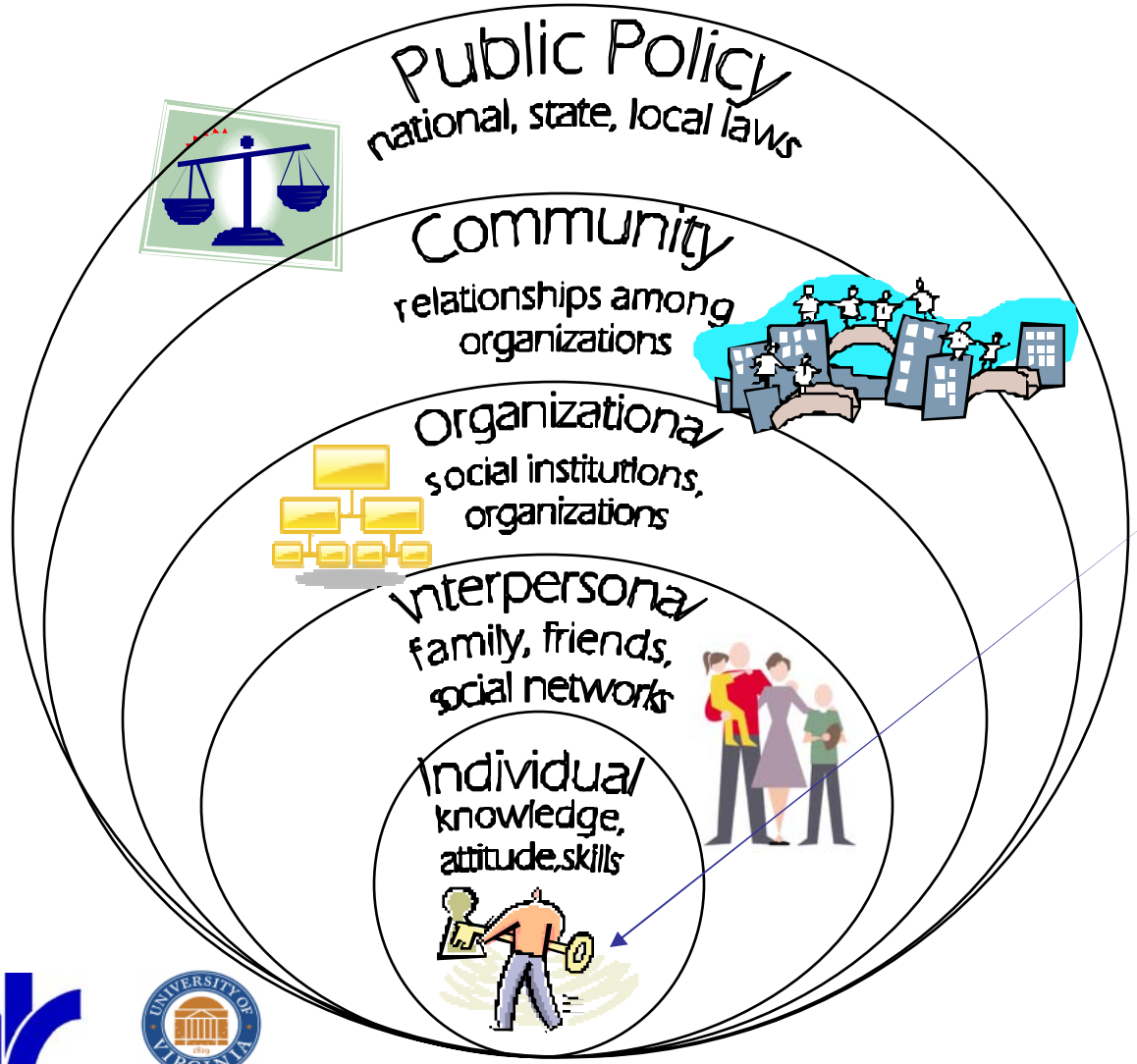
Overcoming the challenges…

- Establish a sound logic model to guide the program implementation and evaluation
- Quasi-centralized evaluation team responsible for instrument development and database management
- Implement a monthly reporting system to monitor progress towards process indicators
- Match intervention content to outcome indicators to establish a reasonable inference for cause-and-effect
- Focus on the non-quantifiable outcomes as well as quantifiable outcomes
  - Organizational changes: staffing, policies, or strategic shift
  - Institutionalization/sustainability
  - New partnerships emerging as a result of initiative

Overcoming the challenges (con't)…

- Use qualitative data to strengthen, deepen and illustrate quantitative findings:
  - Open-ended response questions on surveys
  - Focus groups
  - Individual interviews

Example: Evaluation of PQI



Practice Quality Improvement Program for Primary Care Providers

PQI Intervention

In 2004, CARMA initiated the multilevel PQI intervention:

- Level 1: single-point-in-time contact based on the National Heart, Lung & Blood Institute (NHLBI) best practice guidelines.
- Level 2: multiple contacts over several months; varies greatly in intensity. Activities may include up to 6 hours of free CME; case discussions, emails, enhanced interaction with specialists.
- Level 3: formalizes a one-year relationship between a practice and the CARMA PQI team, using an "academic detailing" model.
  - practice-specific, reflecting the priorities of the practice
  - repeated contact, in the practice setting
  - use of spirometry is a key component, both as an incentive to participate and as a key goal of the intervention.
  - specific goal is to assist the practice in implementing and following National Asthma Education and Prevention Program through the NAEPP Key Clinical Activities.

Hallmarks of a Level 3 Intervention

- Problem focused (i.e., case studies) training of a designated **Physician Asthma Champion** in each practice.
- Reinforcement of basic concepts and use of specific learning objectives with a designated **Nurse Asthma Champion** in each practice.
- frequent and regular interactions via telephone, fax, email and in person.
- an email list group for providers with several communications each month, including opportunities to ask questions of a pediatric allergist and participate in case study discussions.
- system changes reinforced at every visit.
- when all objectives have been covered by both the Physician Asthma Champion and the Nurse Asthma Champion, the emphasis of the intervention becomes fully integrating and establishing system changes.
- **baseline and interval chart reviews focused on seven indicators of quality care, to highlight positive change as well as identify areas for continued progress.**

Chart Review-Based Indicators

- Asthma classification
- Identification of triggers
- Documentation of patient/family education
- Documentation of symptoms
- Spirometry performed, as age appropriate
- Provision of spacers
- Creation or review of action plan

First Six Practices to Complete One Year PQI Intervention

- two sole practitioner inner city practices; over 90% of patients qualify for Medicaid;
- a multi-practitioner inner city community health center; over 90% of patients qualify for Medicaid;
- a multi-practitioner, single site urban (not inner city) practice; approximately 45% qualify for Medicaid;
- a multi-practitioner multi-site downtown pediatric practice with a mixed socioeconomic patient population;
- a multi-practitioner, multi-site suburban; about 10% of patients qualify for Medicaid.

Chart Review Protocol

- based on non-random samples of patients seen in previous 12 months
- selected by the practices
- reviewed by the physician member of the CARMA intervention team
- Baseline chart review
  - mean number per practice=16
  - range=6 to 30
- Mid-intervention chart review
  - mean number=18
  - range=9 to 26
  - mean duration since start of intervention=6.6 months
- End of intervention chart review:
  - mean number=20
  - range=14 to 25
  - mean duration since start of intervention=12.6 months

Overview of Quantitative Results

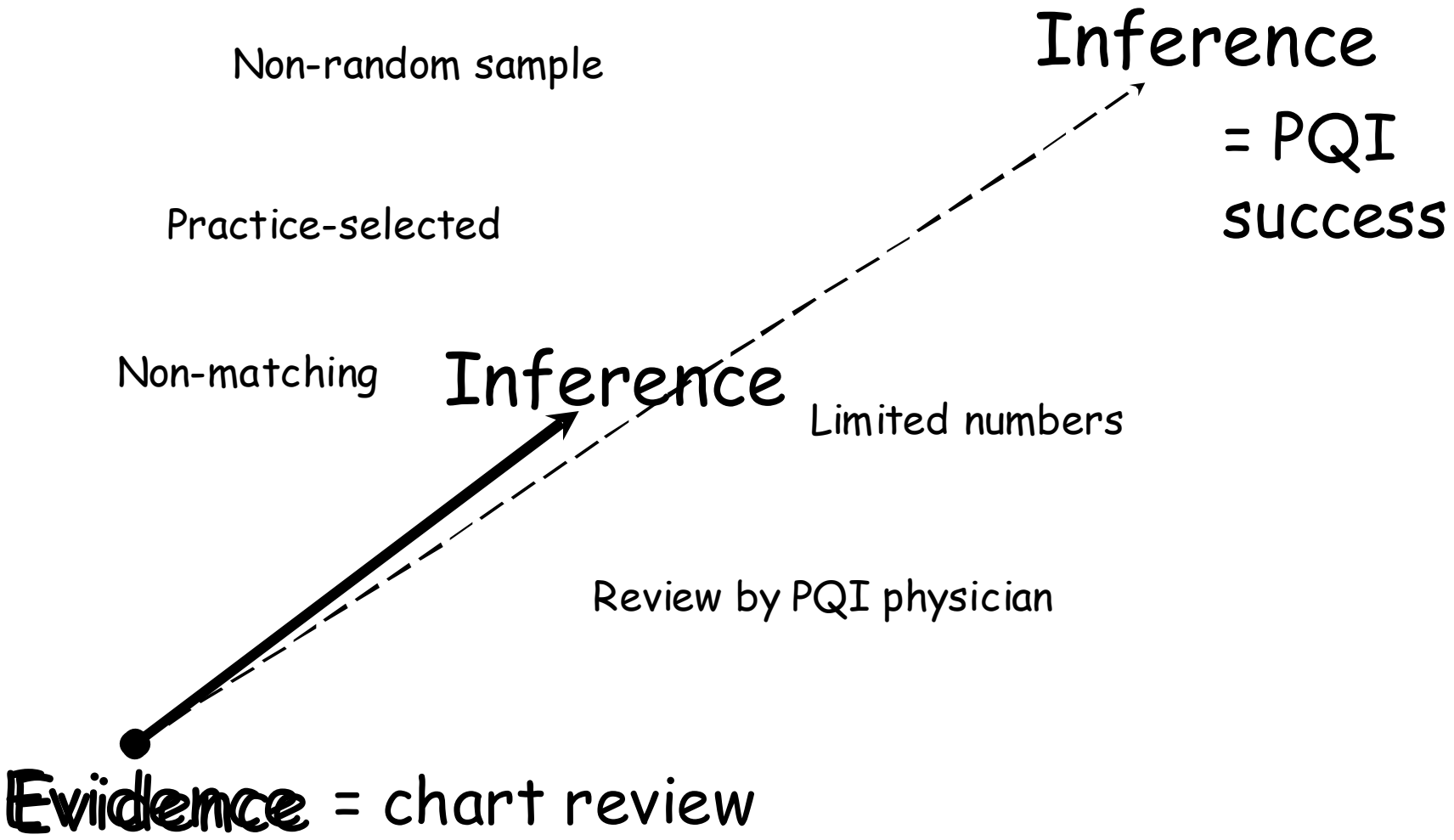
- Identification of triggers: pre to post 61% ↑
- Documentation of symptoms: pre to post 55% ↑
- Asthma classification: pre to post 42% ↑
- Documentation of patient/family education: pre to post 41% ↑
- Provision of spacers: pre to post 40% ↑
- Creation or review of action plan: 38% ↑
- Spirometry performed, as age appropriate: pre to post 29% ↑

Enough to know that PQI is a success?

NO

The INFERENTIAL LINE
is too long and too broken…

HUH?



How can we strengthen that line?

- Additional quantitative information
- Some "ideal" strategies not available
- Semi-structured interviews of practice "champions"

Interview Protocol

- Designed by team
- Conducted by project evaluator
- Conducted individually, in practice settings
- Over a 6 week period
- Designed to take about 30 minutes
- Not recorded

Interview Content

- Understanding of PQI goals & strategies
- Amount of contact with PQI team
- Communication within practice
- Experienced/Observed practice changes
- Experienced/Observed awareness changes
- Success in billing for spirometry/education
- Barriers
- Plans/ability to sustain

Three Cross-Cutting Themes

- All practices had made at least four changes attributable to the PQI intervention and in line with best practice guidelines.
- The PQI team members are positively perceived:
  - admiration for their knowledge and styles of working with people.
  - ready availability
  - acceptability & success of PQI attributed to the personalities and expertise of the PQI team members.
- Even the most dedicated Champions doubted the ability of the practices to sustain the level of commitment to asthma management without regular contact with the CARMA PQI team.
  - multiple high priority pressures on practitioners, including patient care, billing and documentation

Other Commonalities

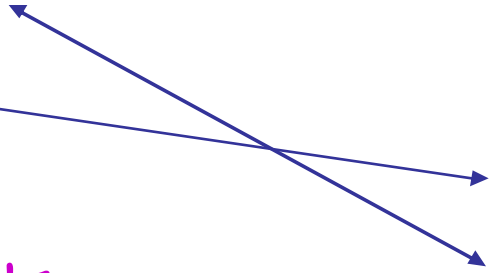
- Lack of regularly scheduled communication between Physician Champion and Nurse Champion within practices
- Variability within practice, particularly in regards to physicians
- Lack of knowledge of billing success

Most Common Changes

- Use of spirometry
- Scheduling follow-up visits
- Disease classification
- Use of asthma Action Plans
- Increased patient/family education

Does this support chart review findings? 1. Content

- Most frequently reported in interviews:
  - Classification
  - Education
  - Spirometry
  - Follow-up visits
  - Action Plans
- Most frequently found on chart review:
  - Triggers
  - Symptoms
  - Education
  - Classification
  - Spacers



Does this support chart review findings? 2. Variations

- Champions most confident of ability to sustain:
  - Suburban multisite
- Champions least confident:
  - Inner city
- Practice with greatest consistency on chart review:
  - Suburban multisite
- Practice with least consistency:
  - Inner city

Have we strengthened the inferential line?

- Yes: but it is still relatively weak
- We used other strategies as well:
  - Questionnaire for all staff
  - Increased sample size
  - Increased chart review numbers
- As importantly, the interviews provided greater depth and understanding to the chart review data