From Process Maps to Data-Driven Insights: A Novel Methodology for Quantifying Process Map Data in Healthcare

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BACKGROUND:

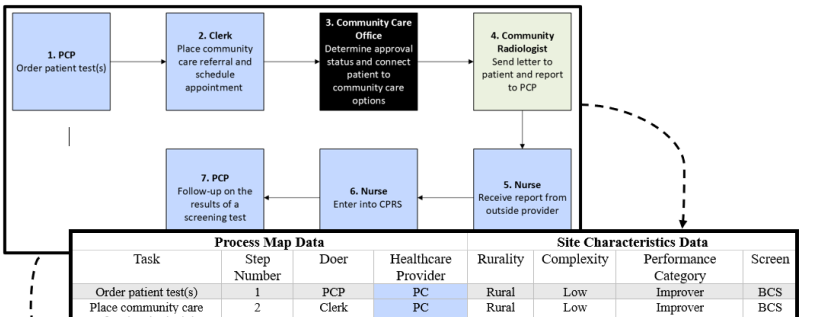
- Process maps (PM) are a well-known staple quality improvement (QI) tool used for understanding complex systems, pinpointing barriers or bottlenecks to workflows, and identifying potential opportunities for interventions.
- The inherent structure of the data of PM and the primary purpose as a visualization tool often mean that quantitative perspectives are overlooked.
- **Objective**: This work proposes and illustrates a unique methodology for extracting new value from PM, involving transforming standard PM workflows into quantitative datasets.

DESIGN: Case study from research completed within the Veteran Health Administration (VHA) involving breast cancer screenings.

METHOD:

- One quantitative methodologist and two research coordinators converted qualitative process map data from 10 VHA facilities into a quantitative dataset.
- A substantial amount of preprocessing was necessary to ensure the data was consistent across sites.
- Quantitative analyses were conducted using the quantitative data.

Although process maps are an invaluable visual tool to better understand processes and to identify areas for improvement, transforming process maps into quantitative datasets yields considerably deeper insights



Process Map Data				Site Characteristics Data			
Task	Step Number	Doer	Healthcare Provider	Rurality	Complexity	Performance Category	Screen
Order patient test(s)	1	PCP	PC	Rural	Low	Improver	BCS
Place community care referral and schedule appointment	2	Clerk	PC	Rural	Low	Improver	BCS
Determine approval status and connect patient to community care options	3	Community Care Office	Community Care	Rural	Low	Improver	BCS
Send letter to patient and report to PCP	4	Community Radiologist	Specialty	Rural	Low	Improver	BCS
…							
Follow-up on the results of a screening test	7	PCP	PC	Rural	Low	Improver	BCS

Figure 1. Example of Breast Cancer Process Map and Transformed Quantitative Dataset

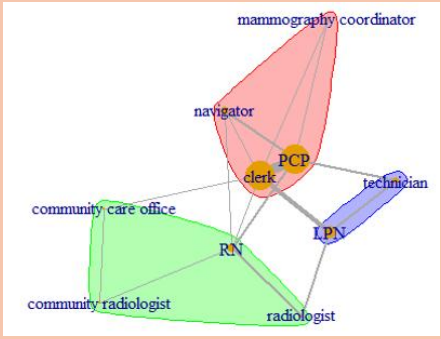


Figure 2. Social Network Analysis for Breast Cancer Screening Across All Study Sites

Suggested citation: Sloane, J, Anderson, A, SoRelle, R, & Hysong, SJ. (2025). From Process Maps to Data-Driven Insights: A Novel Methodology for Quantifying Process Map Data in Healthcare. Poster presented at the Health and Care Analytics Conference. Virtual: December 3-4, 2025.
Funding: VA Health Systems Research, SDR 21-048 (Hysong, PI); VA HSR&D #CIN 13-413 (Petersen, PI)

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