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Use of Managerial Epidemiology by Healthcare Leaders in Ambulatory Settings

POSTER PRESENTATION

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Abstract

Research has demonstrated the use of managerial epidemiology (ME), an application of epidemiology tools and principles to management decision-making within healthcare organizations, can better serve the health of the population and could improve the triple aim of inadequate access, high costs, and poor quality. However, the adoption of this practice is weak and its utilization by healthcare leaders has not yet been studied. Diffusion of innovation theory framed this qualitative study to understand the perspectives of ambulatory healthcare leaders on using ME. Findings from twelve interviews indicated ME is critical and important for impacting the triple aim, population health, and overall system performance. This study also provided steps to accelerate the adoption and highlights the use of ME during a pandemic, which has worldwide implications for improving health and performance of healthcare globally. *Doctoral Capstone*

Problem

Despite many healthcare reforms, the same challenge of limited access to healthcare services, high costs, and poor quality of care continue to plague the US and create a complex environment for healthcare leaders to generate improvements (Osborn, et al., 2016; Storkholm et al., 2017).

Despite the known benefits of using managerial epidemiology (ME) to address these challenges, the adoption of ME is weak and academic programs for healthcare leaders are inconsistently offering the coursework needed for utilizing ME (Caron & Hooker, 2011; Rohrer, Angstman, & Pecina, 2013).

After almost 40 years, there is still a lack of published literature on healthcare leaders' perspectives on understanding and using ME in the ambulatory setting. By exploring these perspectives, insights can be gained for adopting the practice of managerial epidemiology.

Purpose

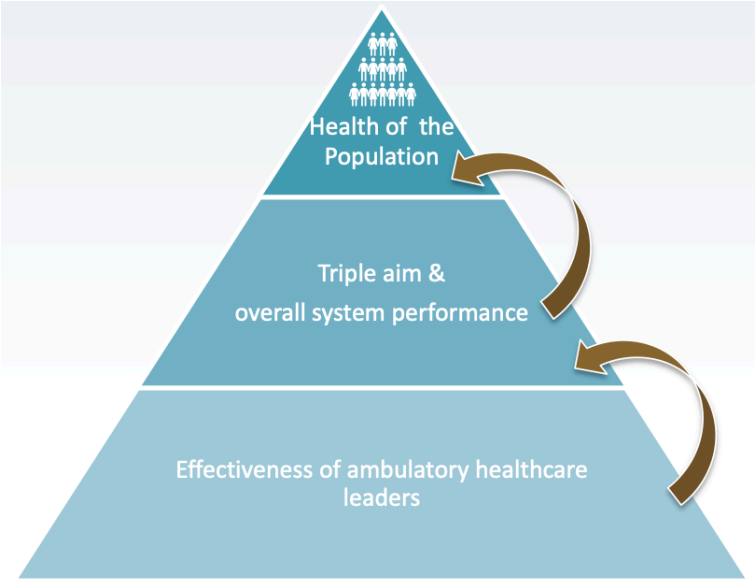
This traditional qualitative study aimed to understand perspectives on the use of and diffusion of managerial epidemiology (ME) among healthcare leaders with experience in ambulatory healthcare settings.

These results may provide insight into how ME can be used to lead an effective, efficient healthcare organization, as well as improve the health of the patient population the organization serves.

Significance

Managerial epidemiology (ME) is a concept that may improve population health and organizational performance by reducing costs, improving access, and enhancing quality of care.

This study is positioned to provide insight for changing the approach of healthcare leaders across the nation to impact the health of the greater population and to improve the performance of healthcare organizations.



Theory or Framework

Diffusion of Innovation (DoI) theory (Rogers, 2003) is the way the innovation is spread with communication to individuals. DoI consists of five attributes associated with the rate of adoption (Rogers, 2003).

- *Relative Advantage*- the perception of how the innovation is better than what already exists.
- *Compatibility is* the measure of alignment of the innovation with existing norms.
- *Complexity is* the perception of how difficult the innovation is to utilize and understand.
- *Trialability is* the measure of how experimental the innovation might be.
- *Observability* refers to the visibility of the innovation. This attribute was not studied due to the known weak adoption of ME.

Relevant Scholarship

Managerial Epidemiology

- Population health is the key to improving our nation's healthcare system and managerial epidemiology can be an essential discipline to achieve population objectives (Fos, Fine, & Zuniga, 2018).
- Academic institutions are not consistently equipping current and future leaders with applicable population health leadership approaches and skills such as ME (Caron & Hooker, 2011).
- *Managerial epidemiology* is the blend of healthcare administration and epidemiology and is urged to be used by health services leaders (Fleming, 2013; Rohrer, Grover, & Moats, 2013).
- ME can be used to measure the effectiveness of a healthcare system (Caron & Hooker, 2011).

Ambulatory Healthcare Leadership

- Responsibilities include decision making for planning, staffing, and directing of their areas of accountability in the healthcare organization (Fleming, 2013).
- Ambulatory settings include primary and specialty physician offices, radiology or other diagnostic testing centers urgent care, outpatient centers, and dental offices (Centers for Disease Control and Prevention, 2016).
- Patient population volume is shifting towards ambulatory settings and the scope of ambulatory care continues to expand (Scutchfield & Keck, 2009).

Research Question

What are the perspectives and experiences of ambulatory leaders on the use of managerial epidemiology for decision-making?

What are the perspectives and experiences of ambulatory leaders regarding communicating the use of managerial epidemiology through the healthcare system?

Four subquestions were used to explore elements of the Diffusion of Innovation theory.

Participants

Purposeful sampling was used to recruit healthcare leaders with ≳1 year of experience in the ambulatory setting.

12 participants were interviewed from all regions of the United States.

- Experience ranged from 2 years to 45 years.
- Over half held a master's degree and some held a doctorate degree.

Procedures

Consent was retrieved via email and interviews were scheduled. Reminder emails were sent prior to the interview.

Participants were interviewed using a self-developed interview guide.

All interviews were conducted in-person or by phone for ~45 minutes to 1 hour. Interviews were recorded.

Each interview recording was manually transcribed and shared with the participant for validation before analysis.

Analysis

Precoding and open-axial coding were used to conduct thematic analysis of the data.

Findings

What are the perspectives and experiences of ambulatory healthcare leaders on the use of managerial epidemiology for decision-making?

- Managerial epidemiology is critical and has no disadvantages
- Managerial epidemiology provides objectivity and supports transformation
- Managerial epidemiology can impact triple aim for overall system performance
- Current level of adoption is variable

What are the perspectives and experiences of ambulatory healthcare leaders regarding communicating the use of managerial epidemiology through the healthcare system?

- Leader competency and data challenges are barriers for adoption
  - Analytical skill gap exists for leaders
  - Poor data availability, accuracy, and interoperability
- Recommendations for adoption
  - Multi-level engagement throughout the organization is needed
  - Data scientist/ analyst should be hired and included in decision-making process as a partner to the ambulatory healthcare leader
  - Training and tools should be used to adopt and hardwire use of managerial epidemiology
  - Build managerial epidemiology as a requirement to the decision-making process
  - Pilot with a small population such as clinic-level before broad implementation of managerial epidemiology

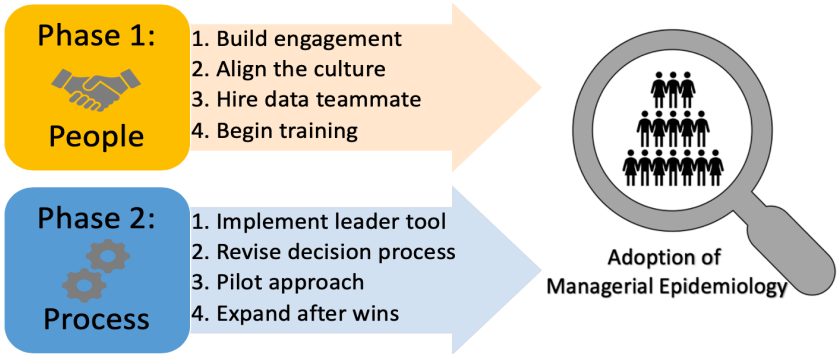
Interpretation

Confirmed and elaborated on the critical nature of applying managerial epidemiology (ME), need for evidence-based management, and use of ME provides objectivity to decision-making.

Leaders do not need to be the experts in ME themselves, but a data teammate needs to conduct analyses should be helpful in decision-making

A gap was uncovered in the discipline: the understanding and effects of unconscious bias by health services leaders in using ME

Steps for accelerating adoption of ME in the current workforce were developed.



Limitations

Existing literature indicated poor adoption of managerial epidemiology (ME); therefore, the Diffusion of Innovation theory element of observability was not studied.

For the 10 phone interviews, non-verbal communication was eliminated and limited full understanding of the conveyed messages. The rapport with participants of the two in-person interviews did not seem to differ from those engaged via telephone.

The participants did not always disclose their settings. It is unclear how their setting could have distracted their participation in the interviews and their responses.

While participants mentioned using ME in other healthcare leadership roles and other healthcare settings, generalizing the findings to non-ambulatory healthcare leaders should be considered carefully.

Recommendations

Validate the steps for adoption including development and validation of leadership tool.

Once managerial epidemiology (ME) is more widely adopted, research the observability of ME.

Study use of ME during and after the pandemic

Explore how ME can improve workforce experience as part of the quadruple aim.

Learn how challenges of data accessibility, integrity, and interoperability relate to ME.

Research is needed on public sector and policymakers using ME.

Study the role of unconscious bias in the leader's use of ME

Research the use of ME by hospital leaders

Social Change Implications

Current literature discussed implementation of managerial epidemiology (ME) in academic programs for emerging leaders. The health of the nation or the world should not need to wait for those leaders to emerge and diffuse this practice. This could take many years. Nothing changes if we wait on the status quo.

The recommendations in this study can be readily implemented now, have the most impact, and not delay improvement of the population's health.

ME can be used before and during a pandemic which has worldwide implications for improving health and the performance of healthcare globally.

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