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SCHWERPUNKT

The Indiana University Center for Healthcare Innovation and Implementation Science: Bridging healthcare research and delivery to build a learning healthcare system

Indiana University Center for Healthcare Innovation and Implementation Science: Brückenschlag zwischen Gesundheitsforschung und Anwendung als Beitrag zu einem lernenden Gesundheitssystem

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Implementation science;
healthcare innovation;
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complexity science

Summary In the United States, it is estimated that 75,000 deaths every year could be averted if the healthcare system implemented high quality care more effectively and efficiently. Patient harm in the hospital occurs as a consequence of inadequate procedures, medications and other therapies, nosocomial infections, diagnostic evaluations and patient falls. Implementation science, a new emerging field in healthcare, is the development and study of methods and tools aimed at enhancing the implementation of new discoveries and evidence into daily healthcare delivery. The Indiana University Center for Healthcare Innovation and Implementation Science (IU-CHIIS) was launched in September 2013 with the mission to use implementation science and innovation to produce great-quality, patient-centered and cost-efficient healthcare delivery solutions for the United States of America.

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Within the first 24 months of its initiation, the IU-CHIIS successfully scaled up an evidence-based collaborative care model for people with dementia and/or depression, successfully expanded the Accountable Care Unit model positively impacting the efficiency and quality of care, created the first Certificate in Innovation and Implementation Science in the US and secured funding from National Institutes of Health to investigate innovations in dementia care.

This article summarizes the establishment of the IU-CHIIS, its impact and outcomes and the lessons learned during the journey.

SCHLÜSSELWÖRTER
Implementierungsforschung;
Innovation im Gesundheitswesen;
evidenzbasierte Medizin;
Qualitätssicherung;
Komplexitätsforschung

Zusammenfassung Schätzungen zufolge könnten in den Vereinigten Staaten 75.000 Todesfälle vermieden werden, wenn hochwertige Versorgungsmaßnahmen effektiver und effizienter ins Gesundheitssystem implementiert würden. Patienten erleiden im Krankenhaus Schaden infolge von inadäquater Behandlung, Medikation und anderen Therapien, durch nosokomiale Infektionen, diagnostische Verfahren und Stürze.

Implementierungsforschung, ein neuer und wachsender Bereich der Gesundheitsversorgung, entwickelt und untersucht Methoden und Werkzeuge mit dem Ziel, neue Verfahren und Evidenz besser in die tägliche Versorgungsroutine zu implementieren. Das *Indiana University Center for Healthcare Innovation and Implementation Science* (IU-CHIIS) wurde im September 2013 mit dem Auftrag gegründet, Implementierungsforschung und Innovationen zu nutzen, um qualitativ hochwertige, patientenzentrierte und kosteneffiziente Lösungen für die Gesundheitsversorgung in den Vereinigten Staaten von Amerika zu entwickeln.

In den ersten 24 Monaten seit seiner Gründung hat das IU-CHIIS ein evidenzbasiertes *Collaborative-Care*-Modell für Menschen mit Demenz und/oder Depression angepasst, das sogenannte *Accountable-Care-Unit*-Modell erfolgreich erweitert, ein erstes Zertifikat für Innovations- und Implementierungsforschung in den USA entwickelt und die Finanzierung für die Untersuchung von Innovationen in der Demenzversorgung durch die *National Institutes of Health* (NIH) sichergestellt.

Der vorliegende Artikel beschreibt die Etablierung des IU-CHIIS, seinen Einfluss auf die Versorgung und die Erkenntnisse, die während des Prozesses gewonnen wurden.

Introduction

In the United States, it is estimated that 75,000 deaths every year could be averted if the healthcare system implemented high quality care more effectively and efficiently. [1] Approximately a fourth of hospital admissions are complicated by patient harm as a consequence of procedures, medications and other therapies, nosocomial infections, diagnostic evaluations and patient falls. [2] The United States National Institute of Health states that this considerable problem is not due to paucity of knowledge, but rather due to poor implementation of healthcare discoveries into daily practice. [3] Medical knowledge as reflected in clinical trial publications and systematic reviews of trials has been consistently rising over the past three decades, having now reached 75 trials and 11 systematic reviews published every day. [4] However, only 14% of this knowledge is ultimately implemented. [5] Such a low implementation rate is compounded by the fact that the estimated implementation period is very slow at an average of 17 years. [6] Despite the presence of a major implementation gap between medical discovery and healthcare delivery, the amount of research and publications focusing on the implementation of evidence into "everyday" practice is minimal with only 5% of medical publications being classified as implementation. [7]

In order to address these challenges in the American health care system, the Institute Of Medicine (IOM) recommends exploiting the tools of the new emerging field of Implementation Science to transform the health care system into a learning system capable of accomplishing the triple aim of better health and better care at a lower cost for every American. [1] *Implementation science* is developing tools, processes, and strategies for rapid, efficient, and sustainable implementation of evidence-based programs and practices in the local "real world". This new science seeks to discover generalizable knowledge, scientific methodology, and reproducible approaches for the challenge of dissemination and scalability of planned and effective changes across multiple health care systems. [8—11]

In order to become a top-ranked "clinical laboratory" for Implementation Science, compete successfully for the new line of federal funding in this field via the Center for Medicare and Medicaid Innovation (CMMI) and the Patient Centered Outcome Research Institute (PCORI), and support the ever-changing transformational needs of the Indiana's health care systems, IU School of Medicine (IUSM) and Indiana Clinical Translational Science Institute (ICTSI) launched the Indiana University Center for Healthcare Innovation and Implementation Science (IU-CHIIS) in September 2013. In this article, we present the development of the IU-CHIIS, its aims, accomplishments and lessons learned.

Development of the IU-CHIIS

Mission and Theoretical Framework: The mission of the IU-CHIIS is "to use implementation science and innovation to produce great-quality, patient-centered and cost-efficient health care delivery solutions for the United States of America". The IU-CHIIS uses the tools of Implementation Science to become an effective catalyst that will speed up the