Informatics-enabled interprofessional education and collaborative practice: A framework-driven approach

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ABSTRACT

In the United States there is an urgent need for the development of a healthcare system that addresses the lack of safe, efficient, quality care. Two solutions receiving significant attention include health information technology (HIT) and interprofessional education and collaborative practice (IPECP). To accelerate advancement of HIT-enabled IPECP and improved outcomes, a consortium of more than 346 rural, community and university settings engaged in developing and implementing a framework. This framework bridges the gap between education and practice and leverages intentionally designed automation within multiple HIT systems. The framework, consists of six actionable models that include tools, processes infrastructures, and reflects the intersection of several theories and implementation science. Without intentionally designed HIT and interprofessional approaches to care, automation will have minimal impact on improving health outcomes and perpetuate repetitious care delivery. This paper presents an overview of the framework, replicable, sustainable outcomes and research implications.

Introduction

The complex nature of the current healthcare environment presents system leaders with urgent needs. A synergistic relationship between health informatics technology (HIT) and interprofessional collaborative practice (IPCP) offers tremendous potential to affect necessary processes, mandates and outcomes to transform the way health care is delivered.[1] Unprecedented government and organizational investment in development and implementation of HIT has risen substantially, particularly since 2008.[2] In spite of financial expenditures, most organizations have failed to consider a clinical practice platform, which is also an essential component in transforming healthcare.[3] The Institute of Medicine (IOM) identified the need to focus on what works in healthcare, as it relates to evidence.[4] Thus, healthcare leaders must avoid reinventing the wheel, reflect on lessons learned and discern critical elements that are currently working well. The IOM[5] also emphasized the need to focus on a digital infrastructure for the learning health system as a foundation for continuous improvement in health and healthcare. Attention to design of quality HIT can lead to improved care delivery and enhance

IPCP.[6] While HIT is a tool that can support collaborative practice when it is intentionally designed, attention must also be given to the culture and systems within healthcare environments and preparation of the current and future workforce to practice in collaborative teams.

Historically, the health professions have been prepared to practice in isolation from one another, leaving many unprepared to work as members of a collaborative team.[7] Additionally, cultures and systems within the healthcare environment perpetuate segmentation of the health professions and fragmentation and duplication of care delivery.[8] The need for advancements in interprofessional education and collaborative practice (IPECP) to prepare the workforce to work in an interprofessional manner has gained significant momentum over the past few years. The need to link advancements in IPECP with transformation of healthcare delivery and collaborative practice redesign in the health care setting is now recognized.[9]

Bridging the gap between education and practice, while designing and implementing HIT that supports IPECP, requires a framework driven approach rather than a project driven approach. Over the last 30 years, an International Consortium (IC)[3] has developed innovative, applicable solutions to further expand intentional use of HIT that advances IPECP along with quality patient outcomes. This IC is an accomplished exemplar of institutions that have applied a clinical practice framework to improve cultures, advance IPECP, and achieve meaningful HIT goals. Organizational leaders must give simultaneous

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attention to the development of a practice platform and intentionally designed HIT to achieve desired outcomes for healthcare transformation. In this article, we describe the framework-driven approach that has sustained the IC organizations for the past 30 years. This integrated framework, the Clinical Practice Model (CPM) Framework™, includes component models of IPECP, HIT and evidence-based practice (EBP) with embedded infrastructures, tools and processes to support sustainable culture and practice transformation. We also provide an overview of the IPECP framework in addition to implications for practice, education and research.

Background

The CPM Framework was designed to achieve the vision of sustainable culture, practice transformation, and address the challenges that all clinical settings encounter in achieving that vision, and has continued to evolve over three decades. Benefits associated with using a framework driven approach are that it is scalable and can change as healthcare changes, it is grounded in core beliefs, theories, and principles, and integrates the theoretical components of informatics with IPECP and evidence-based practice. Framework driven transformation and component elements of the framework are described in greater detail.

Framework driven transformation

A deep understanding of the healthcare system is essential for successful HIT implementation and fostering culture and practice transformation at the point of care. A framework driven approach supports new ways of thinking about the complexity of the healthcare system, care delivery and the sociotechnical systems that impact safe, quality, patient-centered care. This approach also provides infrastructures, tools, and processes supported by various theories to move organizations away from strictly a project driven approach to a systemic thinking approach and guide actions necessary for sustainable transformation. The CPM Framework prevents fragmented, reactionary and ultimately failed transformation interventions.[10] Identified models within the framework are intentionally designed to support the patient, family, community, and caregivers to advance the culture and practice of care. Each model is interrelated, action-oriented, outcome-producing, replicable, evidence-based and technology-enabled to move healthcare organizations into a capacity-building mindset and into action.[10,11] The interrelated and action-oriented nature of the models supports people, practice, and process interoperability. Each model of the framework (Figure 1) is described in greater detail and interrelated processes are discussed.

Components of the CPM Framework™

Clinical practice models

CPM International Consortium

The development of a consortium grew out the need to have an infrastructure to integrate the collective knowledge and wisdom of organizations and develop a continuous learning system to support the evolution of the CPM Framework and Models. Today the IC consists of more than 346 healthcare settings throughout North America that include rural, community, and academic settings. A growing number of IC organizations are becoming large integrated delivery networks (IDNs) as they strive to standardize care and achieve large scale HIT adoption. Health professions represented in the collaborative work of the IC include physicians, nurses, respiratory therapists, physical and occupational therapists, speech-language pathologists, spiritual care providers, social workers, dietitians, pharmacists, and others.
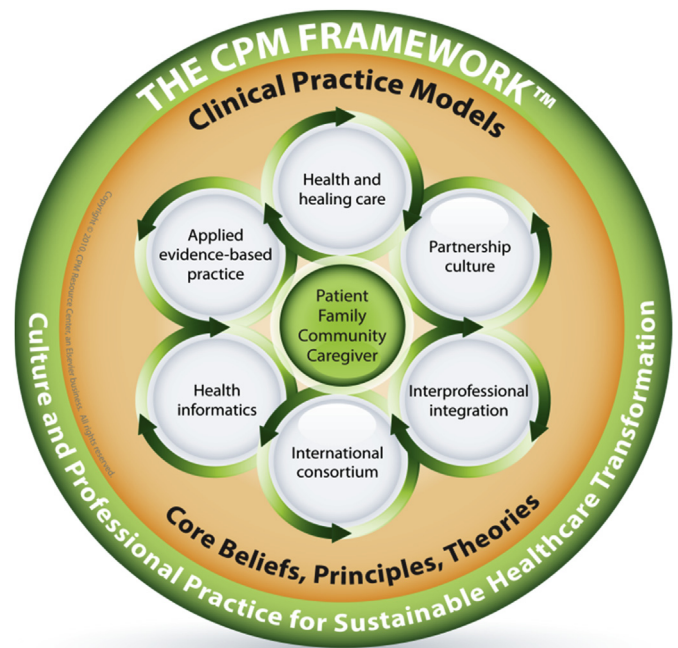

Figure 1. The CPM Framework: A culture and professional practice framework for sustainable healthcare transformation. Reprinted from Elsevier CPM Resource Center. The CPM Framework™: Culture and Professional Practice for Sustainable Healthcare Transformation [Brochure]. Grand Rapids, MI: Author; 2011. Reprinted with permission.

The IC model provides the infrastructure and the resources necessary to support ongoing engagement and collaboration among consortium members. For example, IC members meet annually and more frequently via teleconferences and webinars to exchange ideas, insights, and solutions based on clinical experience in implementing transformative processes and tools. The IC engages in collective learning through infrastructures like Collaborative Learning Communities (CLCs). For instance, the IC undertook a two year process to delineate the scopes of practice of nine health professions as a foundation for the intentional design of clinical tools to support the shared processes of care and individual and integrated scopes of practice for the interprofessional team. CLC outcomes include standardized practices, regulatory compliance, optimized workflow, enhanced practice, interprofessional integration and increased adoption of evidence-based practice. With the national focus on requirements for care coordination, interprofessional collaboration and team building, it is significant to note that the IC was recognized as a national exemplar for its collective work and use of a common framework and models of care by the National Academies of Practice and presented the 2010–2011 Interdisciplinary Group Recognition Award.

Health Informatics Model

This model brings the theoretical underpinnings of data, information, knowledge, and wisdom[12] to life within a common evidence-based, professional practice and content tagged database that enables standardized and integrated clinical documentation. The Health Informatics Model (HIM) with its tagged database is expressed in three different tiers: 1) Data Tier (physical layer) in which the content resides in an SQL database where it is structured, mapped, and tagged to support the professional processes of care as well as national reference terminologies such as SNOMED-CT; 2) Logic Tier (design layer) in which the rigorous content authorship process as described in the Applied Evidence-based Practice Model is abstracted to support principles of intentionally designed