Nursing Informatics 2018
A.K. Rotegård et al. (Eds.)

doi:10.3233/978-1-61499-872-3-230

Point of Care Solutions for Electronic Documentation of Nursing Practice

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Abstract

The panel focuses on Point-of-Care (POC) solutions for the documentation of nursing practice in electronic health record (EHR) and/or healthcare information technology (HIT) systems using the Clinical Care Classification (CCC) System. The CCC System was developed by Dr. Saba and Colleagues for the electronic documentation of patient care by nurses and allied health professionals and has been approved by American Nurses Association and U.S. Department of Health and Human Services as an interoperable, standardized nursing terminology The unique POC solutions will be described by different nursing informaticians, designers, and implementers who will describe how they document patient care using the CCC System and their impact on care outcomes. Also the Nursing Informatics (NI) Experts will discuss the effects of POC solutions on care quality and safety, as well as highlight how the data analytics are used to measure and predict workload, staffing, and cost. They will also describe how the information is used to support evidence-based practice and advance nursing knowledge.

***Learning objectives**:*

1) Understand POC solutions using a standardized, coded, nursing terminology based on its Information Model for the e-documentation of nursing practice;

2) Describe the CCC System impacts on care quality, safety, and outcomes as well as measure workload, staffing, and cost.

3) Highlight how POC solutions'data analytics support evidenced-based practice and advance nursing science.

Keywords:

Clinical Care Classification System, Information Model, Patient Plan of Care (PPOC)

Introduction

There is an urgent need for Point-of-Care (POC) solutions be designed to document a patient's clinical information using a standardized coded nursing terminology namely the Clinical Care Classification (CCC) System for today's electronic health record (EHR) and/or healthcare information technology (HIT) systems. The CCC System is an approved standardized coded nursing terminology designed to document nursing practice to provide reliable data which reflects the value of nursing time [1]. Its four-level framework has been designed to provide the foundation for the nursing documentation of the full range of patient care following the six steps of the CCC system's Information Model, which is similar to the Nursing Process recommended by the American Nurses Association as professional nursing practice [2]. The CCC System supports a Point of Care solution which allows nurses to accurately
measure nursing value during the healthcare continuum and provides a care algorithm for use in determining, and predicting individual care needs of patients. The proposed Point-of-Care solutions provide a coordinated framework to synchronize the Nursing Interventions / Actions of nurses that realize optimum patient care outcomes and support evidence- based documentation for education, policy, research as well as practice. The POC solutions are designed to provide awareness of nursing activities and encourage efficient time management for patient care and support of quality care outcomes.

The panel of NI experts and terminologists will describe the value of a standardized, coded, terminology and its interoperability in communicating the continuity of care between EHR/HIT systems in their different healthcare settings. They will also provide analytical knowledge on how to research nursing practice data to measure care quality, safety, and outcomes and analytics to determine patient care workload, staffing requirements, and cost. The panelists will additionally highlight their POC solutions and innovative strategies, using the CCC System for the electronic documentation of nursing care, to generate evidence-based information, enhance nursing practice, and advance nursing science. They will demonstrate that the use of coded nursing terminology is an important benefit of informatics to determine patient care outcomes.

The panelists will present POC solutions for nursing informatics leaders as an critical organizational role of nursing informatics. They will communicate their experience and the basic principles for increasing informatics awareness, analysis, and may provide new knowledge by identifying a practical and systematic process to diffuse information on coded nursing terminology to support nursing informatics and promote the value of coded data to discover the contribution of nurses to care.

Panelists Presentations

The four panel presenters should give the attendees the justification for documenting nursing practice with a

coded standardized nursing terminology namely the Clinical Care Classification (CCC) System. Electronic health record systems depend on interface terminologies, such as the CCC System, for the successful implementation in clinical settings because such terminologies provide the translation from clinicians' own natural language expressions into the more structured representations required by application programs. Future work needs to demonstrate the effects of EHR/HITs on nursing productivity.

Virginia K. Saba, EdD, RN, FACMI, FAAN

Dr. Saba will provide a brief overview of the CCC System and how *used to document the POC solutions*. She will not only describe the three CCC System Nursing Terminologies: CCC 176 Diagnoses, CCC 804 Intervention Actions and CCC 628 Outcomes, but also highlight the CCC Information Model which consists of six steps and used to follow for documenting a Patient Plan of Care. Dr Saba will also describe the CCC System's four level framework and its interoperable five alpha-numeric digit coding structure, similar to ICD-10, that allows nurses to share PPOC data regardless of EHR/HIT system/vendor [3]. Dr. *Saba will provide information on the mapping of the CCC System for documenting the '**essence of care**' as an interface terminology with the different reference terminologies required by law for interoperability namely SNOMED CT, LOINC, and ICD-10.* Dr. Saba will describe how a Point-of-Care (POC) solution using the CCC System to document a patient's clinical information in today's electronic health record (EHR) and/or healthcare information technology (HIT) systems including an example of documenting a patient plan of care (PPOC) [4].

She will also highlight an innovative W*orkload Actions Measures Method (WAMM*) designed to provide nursing workload, staffing requirements, and cost as an integral product of an EHR/HIT documentation system using the CCC System. And finally, she will describe how the CCC system is used not only for the electronic innovative strategies for the documentation of nursing care, but also used to determine care quality, ensure safety, and measure outcomes as well as generate analytics to support the formation of evidence-based information, measure nursing practice, and advance nursing knowledge.

Luann Whittenburg, PhD, RN, FNP, FHIMSS, FAAN

Dr. Whittenburg integrated the CCC System in a terminology database and implemented the POC at an international Medical Center in Bangkok, Thailand. She will describe how a nursing application was designed to support nursing documentation, care coordination, patient outcomes, and care planning functions of nurses and allied health professionals [5]. She will trace how a Plan of Care can be dynamically constructed (interactive) using the CCC Information Model and patient signs/ symptoms to initiate a care strategy. She will describe how the CCC allows for aggregated data analysis and workload prediction.

Kaija Saranto: PhD, RN, FACMI, FAAN

Dr. Saranto, a Finnish professor has and continues to focus on the national nursing documentation designed to unify and standardize nursing practice, as well as used to connect care data with the interdisciplinary care documentation of patient care. The National Nursing Documentation Project (2005-2008) has had significant meaning for nurses in Finland. During that project the nationally unified and standardized a nursing documentation model has been developed and piloted. The structure of the Finnish nursing documentation POC solution is based on the decision making process and a standardized nursing terminology [6]. Nursing diagnosis, interventions and outcomes are documented in a structured way using the FinCC a nursing terminology adapted from CCC System. Later these database elements enable evaluation, analysis and utilization for meaningful use of information for different purposes. Most important is that with these tools make nursing visible among the law makers. These core elements of patient record have been defined for a national code server which will be used for the storage of electronic patient records in a national patient record archival system.

William Dan Roberts, RN, ACNP, PhD

Dr. Roberts is responsible for the HCA Nursing data analytics. The CCC System has been integrated, thus far, into over 60 HCA hospitals each with different EHR/HIT systems which vary from those that document and process patient plan of care data (PPOC) using MEDITECH 5.6 or 6.0 and/or EPIC Systems. The HCA Corp consists of over 170 hospitals, nationwide and is structured so that all the EHR systems when activated has all patient care documentation data processed at the HCA main offices in Nashville, TN. This includes the analysis of over 600TB of data. Dr. Roberts will present results of different analytics and demonstrate that documenting nursing practice using a standardized nursing terminology (CCC System) will generate data that demonstrate nursing impact on care quality and can generate information that can advance nursing science.

Panel Organization Biographies

Virginia K. Saba:

Dr. Virginia K. Saba, EdD, RN, MA, MS FACMI, FAAN is a nursing informatics (NI) expert and consultant who for the past years been involved in the development and implementation of nursing informatics research studies and terminologies. She with colleagues developed the Clinical Care Classification (CCC) System which has been translated in many languages and implemented in numerous hospitals around the world. The CCC System has been approved by the US HHS as an interoperable terminology, by ISO as a Reference Terminology Model, and is a companion to the the ICN's International Classification of Nursing Practice (ICNP). She continues to conduct workshops, give lectures not only for academic universities but also at national and international Informatics conferences. She is widely published and has authored with a colleague the major textbook *Essesntials of Nursing Informatics*. She has received several honorary degrees as well as numerous awards, including the American Academy of Nursing Living Legend award and the Saba Award presented annually in her name by the American Medical Informatics Association. She is a Distinguished Scholar, Emeritus at

Georgetown University, Adjunct Professor at Uniformed Services University, and at several other universities.

Luann Whittenburg:

Dr. Luann Whittenburg, PhD, RN, BC-NI, FAAN is involved in several NI organizations, authored numerous papers for national and international NI conferences and contributed several chapters in NI textbooks. She is a member of Sigma Theta Tau and Fellow in the American Academy of Nursing. Dr. Whittenburg is Board Certified in Project Management, Nursing Informatics and Healthcare Information Management Systems. Dr. Whittenburg holds a Ph.D. from George Mason University; MSN in Administration from Marymount University, Virginia and practices as a Family Nurse Practitioner with the Virginia Medical Reserve Corp. involved in public health emergency and community preparedness.

Kaija Saranto:

Dr. Kaija Saranto, PhD, RN, FACMI, FAAN, FIAHSI works as a full Professor in Health and Human Services Informatics (HHSI) at the University of Eastern Finland, Department of Health and Social Management. In 2012 the HHSI master's degree programme received the status "IMIA accredited" by the International Medical Informatics Association as the very first internationally. Dr. Saranto also acts as the Deputy Di-rector at the Finnish Centre for Evidence-Based Health Care, a Joanna Briggs Institute Centre of Excellence. Dr. Saranto has been chairing the scientific programme committees for NI2009, MedInfo 2015 and NI2018 as well as the editorial committees for NI2009 and NI 2014. Currently, professor Saranto holds the post of the vice chair for the IMIA NISIG and she is the past IMIA vice president for MedInfo. Dr. Saranto has also co-edited various publications to enhance the adoption of health informatics and nursing in clinical practice[5]. She was a member of the expert team compiling the eHealth strategy for nurses in Finland. Currently she is leading research projects focusing on patient safety and virtual care.

William Dan Roberts:

Dr. William Dan Roberts PhD, RN, ACNP: is the Assistant Vice President for nursing performance management, for the Healthcare Corporation of America (HCA), located in Nashville, TN which is 'committed to the care and improvement of human life.' He is responsible for the HCA Nursing data analytics. Dr. Dan Roberts is William Dan Roberts, RN, ACNP, PhD: Dr. Roberts is involved with the analytics as the performance data manager for the HCA.'

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