eCare Plan for People with Multiple Chronic Conditions (MCC)

PC-WG work plan for MCC eCare Plan

Joe Bormel, Lorraine Constable, Tom Hicke
Cognitive Medical Systems

2021-03-03
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</table>
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Agenda

- Project Activities Review/Update: Problems and Goals for MCC eCare Plan

- Care Plan Information Model discussion

- Strategy on increasing from one condition to multiple conditions

- Discuss Workgroup's Recommendation on best collaboration practices

- General discussion
Project Activities Review: problems and goals for MCC eCare Plan
Making the Comprehensive Shared Care Plan a Reality

How private and public stakeholders must synchronize their efforts to achieve setting-agnostic coordinated care. - May 18, 2016

By Alex Baker, MPP, Kelly Cronin, MS, MPH, Patrick H. Conway, MD, MSc, Karen B. DeSalvo, MD, MPH, MSc, Rahul Rajkumar, MD, JD & Matthew J. Press, MD, MSc

A central component of reforming the health care delivery system is improving the quality of care coordination, but clinicians and patients often lack the necessary tools. Care planning has always been a core part of nursing in acute care and institutional settings, and for patients with complex needs (e.g., dementia, end-stage renal disease, intellectual and developmental disabilities, HIV/AIDS). But many clinicians, including most physicians, are not familiar with using a care plan. Furthermore, although interventions that involve care plans have shown benefits, wide variation makes design and implementation challenging.

The care plan traditionally used in nursing has inspired interest in a new tool that is designed to support person-centered care by a multidisciplinary team: the comprehensive shared care plan(CSCP). As described by the National Partnership for Women and Families, the CSCP is not setting-specific; it uses information technology to enable the clinical team to collaborate seamlessly as they help address the full spectrum of the patient’s needs across all care settings and over time. Although barriers to widespread adoption still exist, we believe that robust collaboration between the health care and technology communities can help to advance this promising approach.

Problem Statement - **Consistent Stds Use**

**Viewpoint | Health Policy**
February 23, 2021

**From Digitization to Digital Transformation**
Policy Priorities for Closing the Gap

Julia Adler-Milstein, PhD

> Author Affiliations  |  Article Information

The inconsistent use of standards by certified EHRs stymies interoperability and represents a key obstacle to digital transformation. However, the Biden administration has the policy programs and regulations necessary to pursue conformance testing in practice settings and tie incentives to improvement. Specifically, such an approach could serve as a blueprint for a truly meaningful use. Instead, new meaningful data use criteria could focus on measuring conformance to data standards (using existing scorecard approaches that could be designed around US core data for interoperability standards). Improved conformance could then be incentivized by the current structure of the programs that tie performance to Medicare and Medicaid payments.

https://jamanetwork.com/journals/jama/fullarticle/2776699
Goal of the MCC* eCare Plan Project

DATA: define a fully ‘computable’ set of data elements that,
- in a mutually exclusive and collectively exhaustive manner, (constrained by ‘use context’) 
- use unambiguous definitions (codes) to describe the major chronic conditions,
  - starting with Chronic Kidney Disease, 
  - and continuing per the CDC recognized MCCs, 
- including all data elements necessary to support healthcare processes, harmonized to the appropriate HL7 modules (e.g. Clinical Reasoning, Workflow, etc), and 
- do so consistently with other ‘Content’ Implementation Guides in terms of ‘use context’

MODEL: stand up a platform and pilot where this information is fully** shared with the patient and care team, recognizing that the current state of the healthcare delivery system does not consistently ensure access and thoughtful interoperable exchange. Mechanisms of information sharing consent are defined outside of this project.

1. *MCC = Multiple Chronic Conditions (see subsequent slides)
2. Computable means concepts are represented in codes from reference terminologies and are compatible with FHIR operations and most notably the use of value sets
3. Healthcare processes refers to uniquely identifying patients, capturing and communicating key assessments (including patient’s goals, competencies and factors that drive outcomes such as SDoH), planning based on those assessments (and clinical practice guidelines), ordering what was planned, scheduling what was ordered, performing the requisite activities, tasks and procedures, documenting what was done including issue-specific outcomes, and accounting for that care (e.g. capturing Medicare Advantage HCC classifications used to understand quality, cost and access, and where safety is an attribute of quality,)
4. Fully shared is broad, complex aspiration best described in 2016 Alex Baker et al, “Making the Comprehensive Shared Care Plan a Reality”
The project include a T3/L4 component, a Provider and Patient facing app in order to explicitly test the requirements and artifacts in an early and Agile manner. (dotted red line including SDoH components)
HL7 FHIR Landscape Evolution (since last time)

Proposed rule for better care coordination including a subset of clinical Data; nibbling beyond PAS+AdjClaims?
Care Plan within CPG:

Conceptual Knowledge Architecture

http://hl7.org/fhir/uv/cpg/documentation-approach-12-conceptual-knowledge-architecture.html
Types of Implementation Guides (IG)

“Content IGs are not a single level; drawing on Model IGs and conforming to Specification IGs”
Care Plan Definitions And Scope

(abstracted from the working documents leading to the published HL7 Care Plan DAM v2.0, available here: https://confluence.hl7.org/display/PC/Care+Plan+DAM+2.0)

1. A care plan as a knowledge asset, also known as a protocol, order set, or plan definition

2. A care plan as a set of activities planned for a patient, whether derived from protocol(s) or not, and including the goals of these activities and their outcomes

3. Care planning as a team process of evaluating a patient and planning appropriate actions

4. Care planning as a synonym for care coordination, exchanging information across teams and organizations to facilitate care delivery and inform providers

5. Care planning as the process of reconciling what different plans say

6. A care plan as a view of the patient record tailored for clinical workflow; e.g., foregrounding more relevant and recent information over older and less relevant information.

Potential Roles of an eCare Plan

- protocol
- care plan
- plan development
- care coordination
- reconciliation
- patient summary
What is an eCare Plan?

The IG specifies flows of information, succession from capture through validation, association with conditions, goals and orders.

From: http://build.fhir.org/ig/HL7/fhir-sdoh-clinicalcare/StructureDefinition-SDOHCC-ServiceRequest-Base-1.html
Goals - 1 (in scope)

Care Plan represents
- a strategy to **define, collect** and **display** (means to transmit/communicate) **data** articulated in an IG
  - all data necessary to surface complete and unambiguous condition specific collections of information
  - for the purpose of care coordination, treat and help patient get better, in terms of specific goals/targets, activities, tasks … <>

PC WG Vision: “Describes the intention of how one or more practitioners intend to deliver care for a particular patient, group or community for a period of time, possibly limited to care for a specific condition or set of conditions.”

- **Condition (tactic)**
  - CKD
  - Cardiac (CHF, Ischemic, HTN)
  - T2D
  - Pain
  - other chronic diseases outlined by CDC as well as emerging threats

- **Condition (strategic)**
  - Broader context, specifically SDoH
  - “Canonical”: Within traditional clinical, a methodology such that information is **mutually exclusive** (e.g. eGFR for CKD is same as eGFR for T2D and CHF), and **collectively exhaustive** (i.e. concepts required for assessment, diagnosis and treatment for each condition are represented)
  - [Canonical in FHIR means independent of the business use ]
  - [Canonical in information model means independent of data model… canonical URL]
Care Plan information model discussion
Clinical Care - Care Plan

- Care Plan
- Condition(s)
  - Diabetes
- Goals(s)
  - Eat Healthier
  - Take medication regularly
- Activities (Orders)
  - Low sugar diet
  - Medication Intervention
  - Home Glucose Monitor

Exemplary care plans ClinFhir, an automated way to turn an examples into diagrams?
Administration: Episode of Care Resources

EpisodeofCare (UML View)

EpisodeOfCare

- identifier
- status
- code
- managingOrganization
- period
- referralRequest
- careManager
- team
- account
- statusHistory

Diagnosis

- condition
- role
- rank

Encounter 1
Encounter 2
A Vision?

A viewing, entering/editing and guiding platform

- Data
  non-ambiguous, definitions and exchange, for all care team participants covering all condition-relevant items

- Guided data review, capture, and subsequent workflow including CPG, capture, ordering, CDS, extending to all event orchestration (BPM)
Strategy on increasing from one condition to multiple conditions
Issues -

Going from One Condition to more than one

- Are common data elements exactly equivalent?
  - Examples of yes:
    - Serum sodium, potassium, chloride, bicarbonate,
    - Serum glucose (usually)
  - Examples of no: --- Context can change meaning and relevance
    - Normal (expected) range of albumin with CKD is lower than population nl
    - CHF and HTN treatment with CKD:
      - e.g. fluid overload with diuretics in CHF for patient with/without CKD
    - Serum vs plasma vs whole blood vs specimens from urine, CSF, wound, abscess, ....
  - Examples of ‘use context’
    - HbA1C in screening vs treatment effectiveness vs setting of continuous infusion pump/continuous glucose monitor/artificial pancreas
- Clinical conflicts in indications (beta agonists and beta blockers use, steroid, ... )
  - need for “trumping rules” in above
Issues -
Are use-contexts same and/or compatible

- Are common data elements exactly equivalent in other Content IGs?
  - Resource: UsageContext.value[x] (CodeableConcept|Quantity|Range|Reference(PlanDefinition|ResearchStudy|InsurancePlan|HealthcareService|Group|Location|Organization) / Example)
Issues -
Are my “Apples” the same as your “Apples”? How about Horses and Zebras?

What FHIR registries, IGs, projects, programs (ACTS) should we harmonize with and when?
- FHIR Search: http://www.hl7.org/fhir/search.cfm
- IG Registries: https://registry.fhir.org/results?query=%22eGFR%22&latestFilter=true
- CPG-on-FHIR: http://hl7.org/fhir/uv/cpg/
- Synthea Modules:
  - eCQM value sets
  - NLM Term Ontology (lineage, synonyms, lexical variants, ...)
  - other?

Image Credit: Russell B. Leftwich, MD, Snr Interop Adv
https://www.intersystems.com/fhir
https://www.youtube.com/watch?v=xdP3H0rIFlY
Issues - Surveying FHIR specification

Observation-example-f205-egfr - FHIR v3.0.2

Valueset-observation-methods - FHIR v4.0.1

Valueset-diagnostic-requests - FHIR v1.2.0

Observation - FHIR v3.2.0 - Homepage | HL7 International
Issues - Surveying published IGs

https://registry.fhir.org/results?query=%22eGFR%22&latestFilter=true

- **Are common data elements exactly equivalent?**
  - Duty to harmonize?
  - At what stages of maturity?
  - Are respective use contexts stated?
  - Mechanisms to relate versions over time?
Resource Profile: Estimated Glomerular Filtration Rate example
5.70.1 Resource Profile: EstimatedGlomerularFiltrationRate

Defining URL: http://hl7.org/fhir/us/mcc/StructureDefinition/EstimatedGlomerularFiltrationRate
Version: 0.1.0
Name: EstimatedGlomerularFiltrationRate
Title: Estimated Glomerular Filtration Rate
Status: Draft as of 2020-09-25
Definition: This profile constrains US Core Laboratory Result Observation to estimated glomerular filtration rate results.
Publisher: HL7 International - Patient Care WG
Source Resource: XML / JSON / Turtle

The official URL for this profile is:

http://hl7.org/fhir/us/mcc/StructureDefinition/EstimatedGlomerularFiltrationRate

The US Core Laboratory Result Observation Profile sets minimum expectations for the Observation resource to record, search, and fetch laboratory test results associated with a patient. It identifies which core elements, extensions, vocabularies and value sets SHALL be present in the resource when using this profile. In addition to the requirements set in the US Core Laboratory Result Observation Profile, observationCode is bound to an Estimated Glomuerular Filtration Rate value set.

5.70.1.1 Formal Views of Profile Content

Description of Profiles, Differentials, Snapshots and how the different presentations work of...
<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>display</td>
<td>string</td>
<td>Representation defined by the system</td>
</tr>
<tr>
<td>userSelected</td>
<td>boolean</td>
<td>If this coding was chosen directly by the user</td>
</tr>
<tr>
<td>text</td>
<td>string</td>
<td>Plain text representation of the concept</td>
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<tr>
<td>code</td>
<td>CodeableConcept</td>
<td>Estimated Glomerular Filtration Rate</td>
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<tr>
<td></td>
<td></td>
<td><strong>Binding:</strong></td>
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<td></td>
<td><a href="https://vsac.nlm.nih.gov/valueset/2.16.840.1.113883.3.6929.3.1000/expansion2">https://vsac.nlm.nih.gov/valueset/2.16.840.1.113883.3.6929.3.1000/expansion2</a> (required): This value set contains concepts that represent estimated glomerular filtration rate (eGFR) tests.</td>
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### ValueSet 'EGFR Lab Results'

**Version**: 0.1.0  
**Status**: Active (since 2019-08-05T12:02:55-04:00)

This value set includes codes from the following code systems:

- The following codes are taken from system: [http://loinc.org](http://loinc.org)

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<thead>
<tr>
<th>Code</th>
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<th>Code System</th>
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<tbody>
<tr>
<td>76633-7</td>
<td>Glomerular filtration rate/1.73 sq M predicted among non-blacks [Volume Rate/Area] in Serum, Plasma or Blood by Creatinine-based formula (MDRD)</td>
<td>LOINC</td>
</tr>
<tr>
<td>33914-3</td>
<td>Glomerular filtration rate/1.73 sq M predicted among blacks [Volume Rate/Area] in Serum, Plasma or Blood by Creatinine-based formula (MDRD)</td>
<td>LOINC</td>
</tr>
<tr>
<td>77147-7</td>
<td>Glomerular filtration rate/1.73 sq M predicted among females [Volume Rate/Area] in Serum, Plasma or Blood by Cystatin-based formula</td>
<td>LOINC</td>
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<tr>
<td>69405-9</td>
<td>Glomerular filtration rate/1.73 sq M predicted [Volume Rate/Area] in Serum, Plasma or Blood by Creatinine-based formula (Cockroft-Gault)</td>
<td>LOINC</td>
</tr>
<tr>
<td>43842-3</td>
<td>Glomerular filtration rate/1.73 sq M predicted among non-blacks [Volume Rate/Area] in Serum, Plasma or Blood by Creatinine-based formula (MDRD)</td>
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<tr>
<td>48845-1</td>
<td>Glomerular filtration rate/1.73 sq M predicted among blacks [Volume Rate/Area] in Serum, Plasma or Blood by Creatinine-based formula (MDRD)</td>
<td>LOINC</td>
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<td>50944-7</td>
<td>Glomerular filtration rate/1.73 sq M predicted among females [Volume Rate/Area] in Serum, Plasma or Blood by Creatinine-based formula (MDRD)</td>
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**Value Set Code List**

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"display": "Glomerular filtration rate/1.73 sq M.predicted"
Discuss workgroup's recommendation on best collaboration practices
How to best use the PC WG for MCC eCare Plan
(assume 2nd and 4th Wednesdays; next 4 months)

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<tr>
<th>Date</th>
<th>Topic</th>
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<tbody>
<tr>
<td>Mar 3</td>
<td>Provide Update and Goal Review</td>
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<tr>
<td></td>
<td>Discuss recognized issues/concerns with T2D*</td>
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<tr>
<td></td>
<td>Discuss recognized issues/concerns with Pain</td>
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<tr>
<td></td>
<td>Discuss recognized issues/concerns with CVD</td>
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<tr>
<td></td>
<td>Update group on experience/progress at OHSU</td>
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<tr>
<td></td>
<td>Discuss recognized issues/concerns related to cross-IG discovered</td>
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<tr>
<td></td>
<td>Compare/Contrast/Interoperability with CPG-on-FHIR approach/IG</td>
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<td></td>
<td>Terminology and Vocabulary issues related to MCC and cannonicalization</td>
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* For all “Discuss recognized issues…” includes soliciting co-chairs knowledge of related WG initiatives we should be tracking on.
General discussion