PROSPECTIVELY IDENTIFYING MEDICAID-ELIGIBLE ADULTS WITH HIGH HEALTH CARE NEEDS

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Background and Motivation

- Large expansion of Medicaid to previously ineligible adult populations starting in 2014
- Expansion populations likely to churn between Medicaid, exchanges, and group market
- Resulting issue: “no history”
- Consequences: inability to prospectively profile “no history” population
  - Case finding for care coordination and/or intensive case management initiatives

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Leininger

leveraging IBM text analytics to mitigate risk in healthcare

how big data analytics reduced Medicaid re-admissions

Medicaid Analytics Promote Effective Care and Better Outcomes

Identify High-Risk and Impactable Medicaid Beneficiaries for Care and Disease Management

Managing the Medicaid Enrollment Surge Starts Today

Predictive analytics help states plan and create targeted programs for 2014
States have an abundance of data. Even as they work on connecting systems, a variety of data exists today in Medicaid systems and related health and human services. Predictive analytics can be an important strategy in planning for 2014 populations. Predictive modeling uses data-driven decision-support tools to estimate an individual’s future potential health care costs[7] and is viewed as a viable tool to help states make educated estimates about future enrollment needs.

Medicaid Best Buys: Using Predictive Modeling to Pinpoint “High-Opportunity” Medicaid Beneficiaries

Leininger 4

Can Self-Reported Health Measures Serve as an Alternative for the "No-History" Population?

- **Necessary condition #1**: Measures must be predictive
- **Necessary condition #2**: Insurers have desire and ability to collect information

The Wisconsin Case Study

- Recent pilot data collection effort among newly eligible adults in Medicaid
- Embedded short self-reported Health Needs Assessment (HNA) in the Medicaid application
- Data were meaningfully predictive of high health care needs
- Proof-of-concept study motivating the current work

Please check the box for any medical condition that John has right now.

- ☐ Asthma
- ☐ Cancer
- ☐ COPD (Chronic Obstructive Pulmonary Disease)
- ☐ Depression
- ☐ Diabetes
- ☐ Emphysema
- ☐ Heart Problems
- ☐ High Blood Pressure
- ☐ Stroke

* Does John feel that he/she has a problem with his/her use of alcohol or drugs? ○ Yes ○ No

* In the last two years, has John been hospitalized or had other medical care for emotional or psychiatric reasons? ○ Yes ○ No

* Does John take more than 5 prescription medications? ○ Yes ○ No

* Does John use tobacco? ○ Yes ○ No

* Does John have a regular doctor? ○ Yes ○ No

* Does John have a regular clinic or hospital? ○ Yes ○ No

You told us that John has asthma.

* Has John been to the emergency room in the past 12 months because of asthma? ○ Yes ○ No

* Has John been hospitalized in the past 12 months because of asthma? ○ Yes ○ No

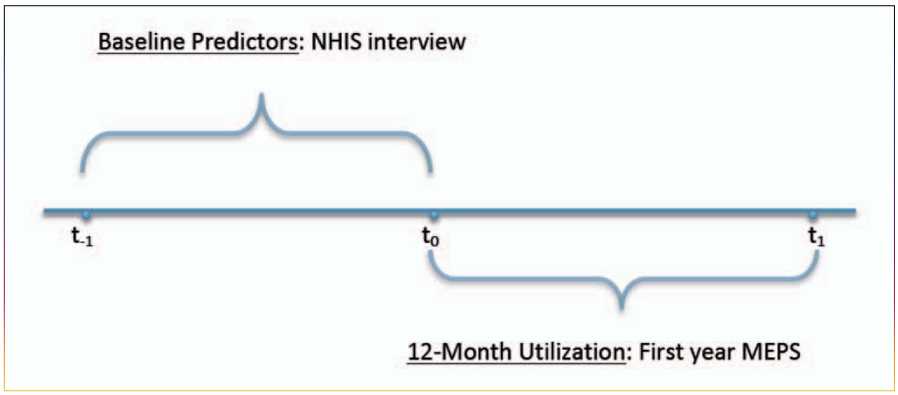
Innovation

- Contribute new knowledge regarding a key question:
  - Which measures should be included in an HNA designed to be predictive of high need?
- Test performance of *multiple dimensions* of self-reported measures using a *nationally representative* sample of ACA expansion population
- Examine outcomes of interest to state Medicaid agencies to identify "high opportunity" Medicaid beneficiaries

Data, Sample, and Outcome Measures

- 1997-2008 rounds of National Health Interview Survey (NHIS) linked with 1998-2009 rounds of the Medical Expenditure Panel Survey (MEPS)
- Sample chosen to approximate the ACA adult Medicaid expansion population
  - *n* = 6,615 adults ages 19-64 with family incomes <138% FPL
- Outcome measures: any inpatient visit; top ER utilization decile (2+); top cost decile

Study Design



Predictors

- Baseline: sociodemographic characteristics collected as part of the Medicaid application
- Candidate Domains:
  - Presence of health conditions
  - Mental health
  - Access to care
  - Health-related behaviors
  - Health-related quality of life
  - Prior year's medical care utilization

Overview of Results

- Prior year's health care utilization most predictive
  - Followed by:
    - Self-reported conditions
    - Health related quality of life (HRQOL)
- Model comprised of these 3 measures exceeds established statistical threshold for predictive performance
- Performance approaches, if not quite meets, that of published claims-based algorithms

Take-Away for Policymakers

- Medicaid stakeholders can use simple, self-reported health measures to prospectively profile members by likely need of care coordination/case management
- Our method is simple and can be done internally by agency staff
  - No proprietary algorithms (and their associated costs) are required
  - Can be used even in the absence of recent claims history
- We are committed to making our suggested measures and methodology publicly available (for free!)

Supporting Slides

K6+

Provider: _____

Provider ID:

Date completed: __ __ / __ __ / __ __ __ __

Please use gummed label if available

Patient or Client Identifier:

Surname:

Other names:

Date of Birth: Sex:

Male ☐ Female ☐

Address:

The following questions ask about how you have been feeling during the **past 30 days**. For each question, please circle the number that best describes how often you had this feeling.

Q1. During the past 30 days, about how often did you feel …	All of the time	Most of the time	Some of the time	A little of the time	None of the time
a. …nervous?	1	2	3	4	5
b. …hopeless?	1	2	3	4	5
c. …restless or fidgety?	1	2	3	4	5
d. …so depressed that nothing could cheer you up?	1	2	3	4	5
e. …that everything was an effort?	1	2	3	4	5
f. …worthless?	1	2	3	4	5

K6+ Self-Report Mea

Q2. The last six questions asked about feelings that might have occurred during the past 30 days. Taking them altogether, did these feelings occur More often in the past 30 days than is usual for you, about the same as usual, or less often than usual? (If you never have any of these feelings, circle response option "4.")

More often than usual			About the same as usual	Less often than usual		
A lot	Some	A little		A little	Some	A lot
1	2	3	4	5	6	7

The next few questions are about how these feelings may have affected you in the past 30 days. You need not answer these questions if you answered "None of the time" to **all** of the six questions about your feelings.

Q3. During the past 30 days, how many days out of 30 were you totally unable to work or carry out your normal activities because of these feelings?

_____ **(Number of days)**

Q4. **Not counting the days you reported in response to Q3**, how many days in the past 30 were you able to do only half or less of what you would normally have been able to do, because of these feelings?

_____ **(Number of days)**

Q5. During the past 30 days, how many times did you see a doctor or other health professional about these feelings?

_____ **(Number of times)**

	All of the time	Most of the time	Some of the time	A little of the time	None of the time
Q6. During the past 30 days, how often have physical health problems been the main cause of these feelings?	1	2	3	4	5

Thank you for completing this questionnaire.

HALex scores are composed of two major components or health dimensions (7,9). One is the patients' perceptions of their overall health status. In the HALex scoring system, there are five levels of perceived health status ranging from excellent (scored 1) to poor (scored 0). The second is the patients' functional status. Patients with the most limited function require assistance with basic, daily life functions and are assigned a single attribute score (SAS) of 0. Those who are completely independent and report no limitation of activities receive an SAS of 1. For the HALex, there are six levels of functional capacity. The five levels of perceived health status and six levels of functional limitations create a matrix. Each unique combination of these 30 possible health states is assigned an index value from the matrix that serves as the HALex QOL score (9).

NHIS-question PHSTAT was used to numerically scale the perceived health status (PHS). Patients were asked: "Would you say (your) health in general is excellent (score = 1), very good (score = 2), good (score = 3), fair (score = 4), or poor (score = 5)?" The average ± SD score was calculated for each BMI category used for this study. For calculation of the UI, a response of excellent was assigned a PHS coefficient of 1.0, very good = 0.85, good = 0.7, fair = 0.3, and poor = 0. Table 1 summarizes the NHIS questions, variables containing the responses to these questions, and the SAS assigned for affirmative answers to each question.

Table 1. NHIS Family Core Health Status and Limitation of Activities questions regarding quality of life

NHIS Question	NHIS Variable	HALex coefficient
Because of a physical, mental, or emotional problem [do you] need the help of other persons with PERSONAL CARE NEEDS, such as eating, bathing, dressing, or getting around inside [the] home?	PLAADL	0.0
Because of a physical, mental, or emotional problem [do you] need the help of other persons in handling ROUTINE NEEDS, such as everyday household chores, doing necessary business, shopping, or getting around for other purposes?	PLAIADL	0.2
Does a physical, mental, or emotional problem NOW keep [you] from working at a job or business?	PLAWKNOW	0.4
Are [you] limited in the kind OR amount of work [you] do because of physical, mental, or emotional problems?	PLAWKLIM	0.65
Are [you] LIMITED IN ANY WAY in any activities because of physical, mental, or emotional problem?	PLIMANY	0.75
NONE of the above limitations		1.0

NHIS, National Health Interview Survey; HALex, Health and Activities Limitation Index.

When two or more questions had an affirmative response, the lowest possible SAS was assigned.