Creating GIS enabled dashboards to help TCM nurses decrease hospital readmissions

Dora Barilla, Angel Coaston, James Martinez, and Matt Keeling
Abstract

Title: Creating GIS enabled dashboards to help TCM nurses decrease hospital readmissions

Geographic Information Systems (GIS) was used to design a customizable hospital readmissions dashboard that will help transitional care management teams and coordinating care for complex patients after they are discharged. The identification of health assets and community resources that are in close proximity to their patients neighborhoods are important to understanding geographic determinants, population health and avoidable reimbursement penalties.
Objectives

OVERVIEW

• DESCRIBE HOSPITAL AND GIS INTEGRATION
• USES OF GIS IN HOSPITALS AND PUBLIC HEALTH
• HOW MAPS CAN BE USED FOR POPULATION HEALTH AND DECISION MAKING
• CONNECTING PEOPLE TO SERVICES

GAIN GIS KNOWLEDGE & SKILLS

• SPATIAL THINKING
• INTEGRATING HEALTH AND GEOGRAPHIC DATA
• HOW GIS CAN BE LEVERAGED TO ANALYZE AND REPRESENT HEALTH-RELATED INFORMATION
Background

• **Hospital Readmissions Reduction Program** - Section 3025 of the Affordable Care Act added section 1886(q)
• Readmission is when a patient is admitted to the hospital within 30 days of a discharge (cms.gov)
• **Readmissions of the following conditions:**
  - Acute Myocardial Infarction (AMI)
  - Heart Failure (HF)
  - Pneumonia (PN)
  - Chronic Obstructive Pulmonary Disease (COPD)
  - Elective hip and knee replacements (THA/TKA)
• **Readmissions cost** Medicare $17 billion per year.
• **Readmission Mobile Solutions** will help improve hospital quality improvement efforts, Coordinating Care for Complex Patients and avoidable reimbursement penalties.
Flow Chart for Readmissions

Year 1: FY 2012
- Heart Failure
- Myocardial Infarction
- Pneumonia

Year 3: FY 2014
- COPD
- THA/TKA

Year 4: FY 2015
- Expand to other conditions (TBD)
Visualization Plan
Readmissions Dashboard

Spreadsheet

Dashboard (real-time concept)
Capabilities

• Real-time data feeds
• Routing for TCM nurses to follow-up with patients after they are discharged.
• Assets of pharmacies and other lifestyle resources, like walking, trails, parks, bike paths, farmers markets, healthy restaurants, community clinics and support groups.
• Community overlays with census and zip code data (i.e. population, insurance spending, income, economics, and etc.)
Partnering with 211: Linking patients to Community Resources

LLUH United Way 2-1-1

Get Connected. Get Answers.

Use the LLUH United Way 2-1-1 service lookup to access information about community, social, health and government services in San Bernardino or Riverside County.

Speak to a live, bilingual call specialist 24 hours a day - dial 2-1-1 or 888-435-7505.

To find resources you can enter any of these search terms and then hit search:
- agency names
- service terms
- programs
- city
- zip code

Once the results have been returned, click on “Get more information” to see additional details for each resource.

Get started by using one of these categories or enter your own search terms in the search box below:
- Clothing
- Dental Care
- Food
- Clinic
- Housing
- Behavioral Health
- Transportation
- Support Groups

Enter search term: Search for Resources:
- Search Agency Names
- Search All Fields

Look for resources in or near a location, add filters, then click Search for Resources to apply filters:
- City: Winchester
- Zip Code:
- Location Filter: Serving city residents

Sort Alphabetically
Sort by Proximity to chosen zip code
Next Steps: Mobile Solutions

Collecting data about patients In the field

Create the phone app based on four basic functions needs

- Routing
- Order
- Condition
- Select
- Risk
- Calculate
- Notes
Mobile Solutions

Ability to search for assets and routing capabilities
Mobile Solutions

Risk Stratification Calculator for identifying more complex patients
Mobile Solutions
Assist patient with knowledge regarding managing their health, needs and goal setting

Health Education
Basic Needs
Strengths/Challenges
Mobile Solutions

Health Management Tools

Management

Setting Goals

Journal
Thank You

Questions, Comments or Recommendations?