Addressing the IT Challenges for a Startup DSRIP Program

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March 2, 2016

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Conflict of Interest

Joseph Conte, PhD(c), CPHQ

Has no real or apparent conflicts of interest to report.
Conflict of Interest

Raj Lakhanpal, MD, FACEP

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Agenda

1. Staten Island Performing Provider System (SI PPS) and New York State DSRIP

2. SI PPS IT and Performance Analytics Strategy

3. Partner Health IT Capabilities: Role of an IT, Performance Improvement & Reporting Platform in Supporting Diverse Project Implementation Needs

4. Managing Populations with Healthcare Hot Spotting and Geomapping
Learning Objectives

1. **Identify the information technology and performance reporting capabilities needed** to support a New York DSRIP PPS’ projects and goals.

2. **Analyze the key challenges a PPS faces** in implementing an effective IT, reporting and performance improvement infrastructure.

3. **Explain the benefits of a phased approach to implementing** an information technology, reporting and performance improvement platform that enables a PPS to realize value in a short time frame.

4. **Provide specific examples of the kinds of data a PPS needs to integrate** into an Enterprise Data Warehouse for measures reporting, performance improvement, population health, analytics and data visualization to support delivery system transformation, clinical improvement and population-wide projects.
Benefits Realized for the Value of Health IT

The Value STEPS™ anticipated to be realized through the DSRIP Program and supporting IT:

- **Satisfaction**
  - DSRIP Goal: Reduce avoidable hospital use by 25% over the next 5 years

- **Electronic Secure Data**
  - Data consolidation from disparate inpatient and ambulatory sources to:
    - Report clinical quality measures
    - Improve population health
    - Realize cost benefits from secure cloud computing

- **Patient Engagement and Population Management**
  - Improved quality of care for Staten Island Medicaid population
  - Preparation for Value Based Purchasing program objectives

- **Savings**
  - Avoid higher costs by effectively managing high-risk patients
  - Understand areas within a population where service utilization can be optimized and costs (can be) reduced
Staten Island Performing Provider System

• **SIPPS is a limited liability corporation formed by Richmond University Medical Center and Staten Island University Hospital.** Our mission is to engage partners and stakeholders in the planning and implementation of DSRIP as we move towards a value-based payment model for Medicaid in New York State.

• **Goal: Implement DSRIP on Staten Island** and improve the quality of healthcare for Staten Island's approximately 130,000 Medicaid recipients and 50,000 uninsured residents.

• **Funding: SIPPS is expected to bring over $218 million** to Staten Island over 5 years if it is successful in transforming the care delivery system.

• **Partners: Over 60 healthcare agencies and community-based organizations** are partnering with SIPPS to undertake DSRIP.
SI PPS and New York State DSRIP
Delivery System Reform Incentive Program (DSRIP)

• Purpose: Restructure the health care delivery system in New York State by reinvesting in Medicaid
• New York is the 7th state to implement DSRIP, 5 year funding commitment from CMS
• Goal: Reduce avoidable hospital use by 25% over the next 5 years.
• Move Practices to PCMH
• Improve Overall Population Health of Community
• Prepare for Value Based Purchasing
• Funding: $6.42 billion dollars
• Current NYS Spending for Medicaid is $52 BILLION per annum!
The New York State Experience

What does $50 Billion of Medicaid Buy?

The Need for Change

‘New York Has Fared Poorly on Several Measures of Avoidable Hospital Use and Costs’
- NYS Health Foundation, “Getting More Bang for the Buck: The Quality Question”

<table>
<thead>
<tr>
<th>New York State Ranked 50th for Potentially Avoidable Hospital Use and Cost of Care</th>
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<tr>
<td>Hospital Admissions for pediatric asthma per 1000 children</td>
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<td>Percent of adult asthmatics with ED or urgent care visit in past year</td>
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<td>Percent of home health patients with a hospital admission</td>
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<td>Hospital Care Intensity Index based on inpatient days and inpatient visits among Chronically Ill Medicare beneficiaries in the last 2 years of life</td>
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SI PPS IT and Performance Analytics Strategy
Bringing the Power of Health Analytics to Program Development and Performance Monitoring to Program Administration

- DSRIP is a value based pay for performance model, all participants have “skin-in-the-game”

SI PPS requires scalable, efficient, robust Platform to effectively focus clinical programs, recruitment of new partners and refine nature of Community Based Organization relationships

Extensive analytic using data from multiple sources to direct programmatic efforts, Hot-Spot prevalence by condition in geographic locations

Capability to manage diverse variables including claims data, real-time institutional clinical data, country of origin, school fitness-gram, economic status, etc.

- Business relationship with IT partner created a powerful and affordable solution
Connecting the Dots.....

Performing Provider Systems (PPS): Local Partnerships to Transform the Delivery System

Partners should include:
- Hospitals
- Health Homes
- Skilled Nursing Facilities
- Clinics & FQHCs
- Behavioral Health Providers
- Home Care Agencies
- Other Key Stakeholders

Responsibilities must include:

- Community health care needs assessment based on multi-stakeholder input and objective data.
- Building and implementing a DSRIP Project Plan based upon the needs assessment in alignment with DSRIP strategies.
- Meeting and reporting on DSRIP Project Plan process and outcome milestones.

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11 DSRIP Projects Actively Underway - Each Have Unique HIT Requirements for Success

<table>
<thead>
<tr>
<th>Behavioral Health</th>
<th>Long Term Care</th>
<th>Primary Care</th>
<th>Care Transitions / Home Care</th>
<th>Community Projects</th>
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<td>Integration of Primary Care and Behavioral Health Services (3.a.i)</td>
<td>Care Transitions Intervention Model to Reduce 30 day Readmissions (2.b.iv)</td>
<td>Strengthen Mental Health &amp; Substance Abuse Infrastructure (4.a.iii)</td>
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<td>Development of Withdrawal Management Services (3.a.iv)</td>
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<td>Health Home At-Risk (2.a.iii)</td>
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<td>Patient Activation Activities (2.d.i)</td>
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How Does Data Inform Population Health?

• Using Disease Registries to Monitor Longitudinal Progress
• Hotspot Disease Patterns
• Identify Access and Performance Opportunities
• Predictive Modeling – Risk Mitigation
• Engage Public Officials
Population-based Disease Registries

- Enable the health care team to proactively manage their most at-risk populations
- Create effective care transitions, manage gaps in care, reduce preventable admissions and prevent readmissions

2.a.iii : Health home at risk
3c.i.: Diabetes management
2b. iv : Care Transition to reduce 30 day readmissions
3g.ii.: Integration of Palliative Care into Nursing Homes
2b. vii: INTERACT
High-level Data Management Overview

**TIER 1 – State Investments**
- SHIN-NY
- State-wide MPI
- MAPP – Analytics tool (claims based data)
- Salient Interactive Miner (SIM)

**TIER 2 – PPS Investments**
- Clinical Data Warehouse & Analytics
- RHIO & HIE Connectivity
  - Alerts
  - Secure Messaging
- Care Management System
- Provider & Patient Engagement

**TIER 3 – Partner Investments**
- Software investments - EMR or other electronic platforms
- Hardware investments - PCs, laptops, network, security, other devices
- Operational Costs such as training and staff

**Key Definitions:**
- **State MPI** = Master Patient Index
- **RHIO** = Regional Health Information Organization
- **HIE** = Health Information Exchange
Staten Island PPS Health IT Services

Data Warehouse & Analytics
- Longitudinal records
- Patient stratification by risk
- Predictive analytics and Utilization Management
- Disease-based Patient Registry

PMO Functions
- DSRIP reporting
- Provider performance management & evaluation
- PPS Partner Management

Provider & Patient Engagement
- Learning Management
- Care Mgmt/Coordination
- Tele-health
- Provider-level dashboards

RHIO and HIE Connectivity
- Enterprise Master Patient Index (eMPI)
- Bidirectional data sharing
- Interoperability
- Alerts & Messaging
IT Assessment
Oct, 2015
Among 26 SI-PPS partners responded
• 92% had EHR platform or in the process of getting one.
• 14 different EHR vendors.
• 2 nursing homes had no EHR.
• 3 out of 6 Health Home At-Risk Providers are connected to GSI.
Implementation Plan: Major Risks & Mitigation Strategies

PPS partners not fully comprehending the IT requirements

• Mitigation Strategy:
  - Engage in community-based partner education
  - Develop education materials by provider type to state expectations and requirements

Consent process may inhibit ability to access and share patient data

• Mitigation Strategy:
  - (1) Community-wide consent model.
  - (2) Continue to coordinate with GNYHA, other PPSs, RHIOs and stakeholders to drive policy change and consent education for patients through providers

State proposed solutions and services do not meet PPS needs or adhere to proposed timelines and standards

• Mitigation Strategy:
  - Continue to engage State, KPMG, RHIOs and directly with Salient to understand and continually re-evaluate top risks
  - Continue to drive “Plan B” strategy until demonstrable/tangible performance of State solutions is evident and consistent
SI-PPS Data Integration Map

**Domain 1: Performance Tracking (AE)**
- Create SI-PPS master patient index (MPI)
- Clinical Data Warehouse
- Hotspotting
- Build patient registry

**Data Source 1, 2, 4, 5, 8**
- Create SI-PPS master patient index (MPI)
- Clinical Data Warehouse
- Hotspotting
- Build patient registry

**Data Source 3**
*Project 2.d.i*
- Monthly data quality report and feedback to SIPPS partners

**Data Source 1, 5, 7, 8, 9**
*Project 2.d.i*
- 2.a.iii: Health home at risk
- 2b. iv: Care Transition to reduce 30 day readmissions
- 2b. vii: INTERACT
- 3c.i.: Diabetes management
- 3g.ii.: Integration of Palliative Care into Nursing Homes

**Data Source 9**
*MAX Series*
- MAX series to identify super utilizer

- **SIUH File Extract**
- **GSI**
- **DOH Member Roster**
- **RUMC File Extract**
- **Insignia/PA M**
- **Salient**
- **High Risk Patient Roster from EMS**
- **Actively Engaged Roster from SI-PPS partners**
- **Performance Logic (AE & Dom 1 Metrics)**
- **SIUH File Extract**
- **DOH Member Roster**
- **Insignia/PA M**
- **Salient**
- **High Risk Patient Roster from EMS**
- **Actively Engaged Roster from SI-PPS partners**
- **Performance Logic (AE & Dom 1 Metrics)**

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Health IT Capabilities
Supporting Diverse Project Implementation Needs
Overarching Mission for SI PPS’ Health IT Partner

- Address SI-PPS needs in an expeditious manner understanding various limitations we will face
- Align the IT strategy and execution with SI-PPS goals
  - Year 1&2: Actively Engaged Patients
  - Years 3-5: Value Based Purchasing Payment Structure
- Identify “High Risk” and “High Cost” patients that are leading to significant utilization and costs
- Improve Population Health
- Evaluate partner performance
- “Do Our Best” to ensure that SI-PPS receives their Bonus Payments
SI PPS IT & Performance Reporting Platform

Performing Provider System
- Hospitals
- Medical Providers
- Behavioral Health Providers
- Health Homes
- Skilled Nursing Facilities
  - Executives
  - Care Coordinators
  - Care Teams

PPS Secure Cloud-based Hosting Site
- Application Suite
  - Measures Database
  - Reporting Tools
  - Predictive Modeling/Data Analytics
  - Data Visualization

Enterprise Data Warehouse
- Hospital Data Warehouse
- NYS DOH Medicaid Data Warehouse
- Medicaid Claims Data

Data Migration
- EHR Data from PPS Providers
- HIE RHIO
- C-CDAs via DIRECT Protocol

Local Server
- Interim Data Repository
- SIUH File Extract
- Performance Logic
- Insignia/PAM
- High Risk Patient Roster
- Workforce/Finance Datasets

Supplement Data Sources

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DSRIP Platform Building Blocks

Source Data

- HCAHPS
- Meds
- ADT
- EMR
- Labs
- Amb.
- HIE
- Custom
- Claims

Enterprise Data Warehouse

Measures Calculation and Reporting

Performance Improvement & Visualization

Predictive Modeling and Simulation

Improving Population Health
Addressing Security Challenges

- Before receiving data from NYS DOH, each PPS must adhere to provisions in 18 SSP workbooks and also submit audit-evidence
  - Workbooks benchmark a common baseline of security policies to ensure there are no security breaches related to sharing PHI
  - Each workbook addresses a separate family of security controls
  - Participating PPS must fill out workbooks & resubmit to DoH in phases
  - Data encrypted at rest and in transit, and transmitted via secure FTP
- In addition, access to PHI in the PROD environment will be controlled via two-factor authentication (2FA)
  - Allows designated users only have access to the information they need
Data Sources

Direct Data from Partners
- Lead Providers Clinical Data
- Other Partners Clinical/Billing Data
- Care Management Partners
- Actively Engaged roster

Public Data
- Uninsured population
- Foreign-born data
- NYC FITNESSGRAM

DOH Data Sources
- DOH Claims Data
- DOH Medicaid Member roster
- Salient Interactive Miner (SIM)

Other Feeds
- Patient Activation Measures (PAM)
- Healthix Data Sources
Measures Reporting to Support DSRIP

- Supports the NYS DSRIP Project metrics
- Brings in new measures or change existing measures quickly as they evolve, for selected for the specific Strategy Projects
- Can define custom measures for performance management and reporting.

Measures to Monitor and Improve Performance with Clinical, Billing, and other real time data sources

NYS DOH DSRIP Measures

- DSRIP Measures Tracking

Measures Definition, Calculation and Reporting Tool

Quality/Cost Analytics

Population Analytics
Platform Roles

**Executives**
- Enterprise-Wide Performance Summaries by Domains, Projects and Measures
- Performance Comparisons
- Review measures before submission
- Access submitted files for audit and compliance

**Providers**
- Performance Score Cards
- Track patients in aggregate and drill down to view gaps in care, utilization, demographics, payers

**Informaticist**
- Analyze Patient-level details
- Drill down to address rejections
- Recommendations to improve performance

**Submitters**
## Improving Population Health

- Collect data from multiple providers and data feeds
- Integrate data to create longitudinal records including Behavioral Health
- Apply population risk assessment models to predict high and increasing risk patients
- Identify patients for inclusion in disease registries
- Monitor and improve efficacy of exchange based interventions
- Alert for gaps in care
- Coordinate patient care across different settings
- Identify and flag patients to include in health transformation projects
SI-PPS Roadmap & Implementation Timeline

April 1, 2015

Pre Opt-out Phase

Set up standalone server and EDW

Integrate RUMC Medicaid Member data DOH summary data (Salient, Insignia)

Risk stratify RUMC Medicaid Members for Readmission

Integrate SIUH Medicaid Member data

Integrate NYS Medicaid claims data

Risk stratify entire SI-PPS Member population

POC for Healthix Integration

Geo-mapping attributed members

Configure EDW in cloud hosted environment

Dynamic Patient Registries

Build DSRIP Measures & Dashboards

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SI-PPS Roadmap & Implementation Timeline

**DY1**
- Consolidate EDW from standalone server with cloud hosted EDW
- Integrate provider EHR data via Healthix

**DY2**
- DSRIP Measure Performance Dashboards & Reporting
- Integrate & exchange provider care plan data via Healthix
- Integrate Performance Logic project status data
- Begin export of MDF data to DOH

**DY3**
- Care Alerts & Notifications to providers via Healthix
- NYS Medicaid VBP Measure Performance Dashboards

Post Opt-out Phase
- April 1, 2016
- Operational Phase
- April 1, 2017

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Managing Populations with Healthcare Hot Spotting and Geomapping
Evidence from epidemiological studies on the causes of ACSCs suggests that not all the causal factors are “under primary care] provider control.” Factors outside direct physician control include ”Social Determinants”

- low socioeconomic status,
- cultural background,
- older age,
- availability of care providers, or
- geographical factors (eg, distance to hospital).

Selected ACSC

- Diabetes
- COPD
- Asthma
- CHF

Staten Island Population Health Data Points Used For Program Development

- Asthma
- Obesity
- Diabetes
- Alcoholism
- Overall Behavioral Health
- Opioid Abuse
- Cancer
- Hypertension
Staten Island Health Disparity

Medicaid Recipients

Data Source(s):
DOH Medicaid member roster - Salient database
Staten Island PPS PHIP Initiative

Medicaid Recipients

Data Source(s):
- DOH Medicaid member roster
- Salient database
- NYC Fitnessgram
- New York State Cancer Registry
Cancer Incidence by United Hospital Fund Neighborhood and Gender, 2008-2012
Geomapping: Nation of Origin Overlay

Data overlay with Age, Nation of Origin & Gender

Diabetes: 19-64 years - Unique Medicaid Claimants per 1000 Beneficiaries in 2014

Total Claims: 40,439

Neighborhood

- West New Brighton-New Brighton-St. George
  - Mexico 43%
- New Brighton-Brighton Lake
  - Mexico 20%
- Port Richmond
  - Mexico 20%
- Grymes Hill-Clifton-Fox Hills
  - China 25%
  - Lithuania 17%
  - Nigeria 19%
- Todt Hill-Emerson Hill-Heartland Village-Lighthouse Hill
  - Korea 19%
  - Ukraine 11%
  - Italy 14%
  - China 21%
- Grasmere-Arrochar-Ft. Wadsworth
  - Italy 14%
- Old Town-Dongan Hills-South Beach
  - Ukraine 18%
  - Italy 18%
  - China 11%
- Stapleton-Rosebank
  - Ecuador 11%
  - Philippines 13%
  - Mexico 26%
  - China 18%

2011-2013 NYC Department of Planning Foreign Born Data. Sourced 11/2/2015
Measures Reporting to Support DSRIP

Measures Definition, Calculation and Reporting Tool

NYS DOH DSRIP Measures

Real-time DSRIP Measures Tracking

Measures to Improve Performance Real-time Data

- Quality/Cost Analytics
- Population Health Analytics
Key Takeaways

• Data needs to be turned into Business Intelligence
• Diverse IT capabilities of partners requires innovative strategy
• Plan for IT adoption will vary by provider type & role
• Everyone needs prompt, accurate performance feedback
• Partners will need to make some IT investments in order to connect into the State, local RHIO (Healthix) & Staten Island PPS Health IT platforms
• Health IT partner facilitating data aggregation, real-time measures calculation and population health
Summary of Benefits to be Realized for STEPS™ Categories

- **Satisfaction** - Reduce avoidable hospital use

- **Electronic Secure Data** - Data consolidation to:
  - Report clinical quality measures
  - Improve population health
  - Realize cost benefits from secure cloud computing

- **Patient Engagement and Population Management**
  - Improved quality of care for Staten Island Medicaid population
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- **Savings**
  - Avoid higher costs by managing high-risk patients
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Questions

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