Paperless Registration

Dana Ostrow  
Senior Director of Clinical Systems, NYU Langone Health

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Senior Director, Health Information Management, NYU Langone Health
In the past, our registration process involved lots of paper.
In 2014, we had over 1.25 million paper registration documents signed and scanned into Epic.
Average registration time with PAPER took 10 minutes
3,897,690 pieces of paper were used, costing over $428,745.90
That’s about 527 trees.
And we spent over $93,986 annually on scanning services before paperless registration.
I thought NYU was digital?
We mapped the **Digital Patient Experience** to better understand the needs of our patients across the continuum of care
In the first half of 2017, over 1.3 million documents were digitally signed.
Paperless Implementation Org Chart

Operational Partners

Project Management
Nathan Gologgly

MCIT Steering Committee
Nancy Beale
Suresh Srinivasan
James Song
Suzanne Howard

MCIT/Clinical Systems Owner
Dana Ostrow

MCIT/Clinical Systems Application Leads
Ann Cote – OnBase
Elizabeth Brutti – EpicCare
Mary Ann Cox – Epic ADT/Cadence
Joe Shelmet – Hardware

Application/Training Team
Maureen Hickey - EpicCare
Vertil Gourgues - OnBase
Alex Mathew – ADT
Javier Ramos – ADT
Marie Laguerre - Training

Vendor Partners

Operational Partners

MCIT Partners

Hyland
Stacey Less – PM
Marypat Schrantz
Tom Buehner
Tony Turner
Susan de Cathelineau

Samsung
Timothy Gillis
Steven Hamilton
Ben Simmons

Desktop/Hardware/Wireless
Jamie Lynch
Sammy Lee
Rob Dennison
Fabian Clarke
Matt Zago
Matt Horany
Ian Gonsalves
Design + Implementation Timeline

September 2014 –
Discovery process for tool selection began
Guiding Principles for Tool Selection

- enable positive experience for both employee and patient
- integrate with Epic
- work seamlessly with other registration technologies such as Patient Secure
- offer a flexible platform that would allow for more than just paperless registration
- leverage existing partnerships if possible
We counted clicks to ensure that the registrar was in fact able to work faster.

We timed patients to ensure that registration was in fact quicker.
<table>
<thead>
<tr>
<th>Feature</th>
<th>Topaz</th>
<th>eCapture</th>
<th>Access</th>
<th>Welcome Kiosk</th>
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<tr>
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<tr>
<td>Can be used for Clinical Consents</td>
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</table>

We considered a wide variety of platforms and their capabilities.
We tested devices and platforms and found that some didn’t meet our needs.
Design + Implementation Timeline

September 2014 –
Discovery process for tool selection began

October – November 2014 –
Initial development in coordination with Epic, Samsung and Hyland
We chose to develop a paperless platform with these partners.
The QR Code – what makes our paperless platform dynamic.
**Paperless Registration Workflow**

1. **Patient Presents at Registration Desk**
2. **Registrar begins the Check-In / Admission in Epic**
3. **Registrar validates forms for the registration packet and creates barcode in Epic**
4. **Registrar Scans barcode using Tablet**
5. **Patient completes prepopulated form on Tablet**
6. **Forms saved to OnBase and then linked to Epic**
7. **Tablet is returned and Registrar confirms all forms have been received in Epic**
Testing

- Bi-monthly Iterative testing with each release for a week, including integrated end to end testing
- Usability with staff
- Usability with patients
- Trials with multiple types of tablets and styluses
Change Management

- Devices are enrolled in Airwatch, which allows us to manage them remotely.
- Updates can be pushed to devices through Airwatch.
- Airwatch Secure Launcher is installed on the devices which allows us to lock down the home screen of the device to the Paperless application.
Infection Control
Paperless Registration Timeline
Design + Implementation Timeline

- **September 2014** – Discovery process for tool selection began
- **October – November 2014** – Initial development in coordination with Epic, Samsung and Hyland
- **February 2015** – First Go-Live at NYU Langones Center for Womens Health
First Test Site – NYU Health: Center for Women’s Health
23 providers
Design + Implementation Timeline

September 2014 – Discovery process for tool selection began

October – November 2014 – Initial development in coordination with Epic, Samsung and Hyland

February 2015 – First Go-Live at NYU Langones Center for Womens Health

June 2015 – Rolled out to large ambulatory location – Huntington Medical Center – ensuring enterprise readiness
Design + Implementation Timeline

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- **June 2015 –** Rolled out to large ambulatory location – Huntington Medical Center – ensuring enterprise readiness
- **December 2015 –** Paperless registration rolled out to 95% of enterprise
Continuous Improvement

MyChart ID creation in registration

Multilanguage capabilities

Research Consents
Average registration time with TABLET – 5 minutes
Documents Digitally Signed Since Launch of Paperless Initiatives

Digitally Signed Documents
Time Saved by Patients Quarterly in Minutes

Over 1 million PATIENT minutes saved
Not using paper saved us nearly $450,000 a year.
Time Saved by the Registrars

- 5,613,115 minutes saved
- 93,552 hours saved
- 3,898 weeks saved
- 51.4 years saved
Soft savings of $1.7 million in FTE costs
Annual Costs

- Tablet Replacement budget - $30,000

- Software Maintenance - $30,000

- FTEs to Support - \( \frac{1}{2} \) an FTE in steady state. Additional support as needed for roll outs and forms in other languages

- Desktop FTEs to Support - \( \frac{1}{2} \) an FTE in steady state across all locations
Lessons Learned

- Ensure that documents format correctly on tablet and are not merely copies of paper documents
- Ensure that signature requests on electronic forms are in the appropriate place
- Turn on certain interfacing early enough to allow all pieces of the platform to function properly at go-live
- Create an FAQ document for go-live to easily address common questions
- Find secure locations for use of tablets to ensure that they are not taken
- Do not assume that registrars already have full understanding of the registration process before implementation
Next Steps

• In 2016 we signed more than 125,000 surgical/procedural clinical consents.

• By the first quarter of 2018 we will be fully digital with all consents.
Questions
Total Joint Arthroplasty Bundled Payment Care Initiative

Kathleen Mullaly, MSN, RN
Senior Director MCIT, Care Delivery Transformation, NYU Langone Health

Lily Pazand
Director, Managed Care Payment Reform Analytics, NYU Langone Health
Clinically Integrated Network – Risk Programs

- CARE Bundled Payment for Care Improvement (BPCI)
- NYUPN Commercial Shared Savings
- Medicaid IPA United
- Delivery System Reform Incentive Payment (DSRIP)
Clinically Integrated Network – Risk Programs

CARE
Bundled Payment for Care Improvement (BPCI)

NYUPN

Medicaid IPA United

Delivery System Reform Incentive Payment (DSRIP)
What We Considered

- Strong clinical leadership
- Defined, discrete clinical episodes
- Relatively predictable

Financial Opportunity

- High volume
- Procedure-based
- Attractive to Medicare

What We Selected

**Total Joint Replacement**
- 469-470 Major joint replacement of the lower extremity
  - 800 Medicare cases annually
  - 31 physicians; 55% employed / 45% voluntary

**Spinal Surgery**
- 459-460 Spinal fusion (non-cervical)
  - 235 Medicare cases annually
  - 18 physicians; 56% employed / 44% voluntary

**Cardiovascular Surgery**
- 216-221 Cardiac valve
  - 260 Medicare cases annually
  - 8 physicians, 100% employed
Cost Drivers Across Episode of Care

Internal Cost Reductions

Levers to reduce internal hospital cost:

- Reduce LOS
- Reduce implant, supply, and/or drug costs
- Reduce OR time

90-day Episode Spend Reductions

Levers to reduce 90-day episode spend:

- Reduce readmissions
- Alter discharge patterns (home-based vs. facility-based care)
- Decrease utilization (e.g. consults, ancillary tests)
- Reduce SNF LOS
### Baseline Metrics – Total Joint Replacement

<table>
<thead>
<tr>
<th>Initial Post-acute Setting</th>
<th>90 Day Readmission Rate</th>
<th>AVG 90-Day Episode Payment</th>
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</thead>
<tbody>
<tr>
<td>Inpatient Rehab</td>
<td>15%</td>
<td>$40,095</td>
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<tr>
<td>Skilled Nursing Facility</td>
<td>18%</td>
<td>$43,466</td>
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<tr>
<td>Home Health</td>
<td>10%</td>
<td>$23,462</td>
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<tr>
<td>Outpatient Therapy</td>
<td>18%</td>
<td>$27,267</td>
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</table>
Total Joint Replacement Pathway

Org Chart
Total Joint Replacement Pathway Development Governance

- Bundled Payment Initiative Steering Committee
- Total Joint Care Pathway Committee
  - Pre-hospital Team
  - Inpatient Team
  - Post Acute Team
- Epic Workflow
- MCIT Reporting
- Implementation
Total Joint Replacement Pathway Implementation Structure and Leads

Total Joint Care Pathway Committee

TJR Pathway Implementation Team

Physician / Res.: Slover
Surgical Care Coordinators: Frattini / Slover
Case Management / Social Work / Clinical Care Coordinator: Roesch / Presa
Inpatient: Comeau / Bovery
Physical Therapy / Occupational Therapy: Corcoran / Tafurt
Post Acute: Goldberg / Mullaly
Clinical Management Throughout the Pathway

Standardization

Systematization and standardizing are the foundations of good operational routines that can be measured and facilitate improvements, outcomes, and ever-greater efficiency.

Advantages of Standardization

1. Increases efficiency
2. Improves ability to monitor and study individual factors
3. Improves communication
4. Allows for identification of outliers or modifiable factors
Patient Navigation

Communication Modes:
- **Electronic**
  - EMR: My Chart
  - EMR Light: For providers without EMR

- **Telephonic**

- **Fax**
  - For providers without EMR or limited internet connectivity
Clinical Episode Documentation, including readmissions to outside hospitals (Outreach/Telephone Encounter)

Risk stratification to identify patients at risk for readmission

Schedule NYULMC occupational therapy home visit for high-risk patients

MyChart:
- History Questionnaire
- Care Team
- Test Results
- Messaging
- Conditions
- Educational Materials/Videos

BPCI Episode Technical Work

Physician Dashboard

OpTime Scheduling System

DRG Predictive Model

Bundled Payment Registry

Epic

Physicians

Patients

Medicare Claims Data

SNF Partners

HIE/Web Portal

Home Health Partners

Population Analytics

Physician and Surgical Coordinator

Clinical Care Coordinators

EDW

BPCI Episode Technical Work
Reporting and Monitoring Tools – Pre-Care Outcomes Improvement

- DRG Predictor
- Reporting
- Care Coordinator Dashboard
- High Risk Readmission Identifier
<table>
<thead>
<tr>
<th>Surgery Date</th>
<th>Pre-Testing Date</th>
<th>Patient Name</th>
<th>Patient Age on Surgery Date</th>
<th>Surgeon Name</th>
<th>Procedure</th>
<th>Home Phone</th>
<th>Email Address</th>
<th>Birth Date</th>
<th>Patient PCP Name</th>
<th>PCP Office Phone Num</th>
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<td>DOB 5</td>
<td>PCP 5</td>
<td>PCP 5</td>
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DRG Predictor - Scheduled procedure report kicks off outreach efforts pre-surgery
FYI Flags identify patients in the EMR
BPCI Epic – Patient Identification / Registry
EMR Care Coordination Tools and Patient Registries

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<tr>
<th>CCC</th>
<th>Patients</th>
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<tr>
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<td>All Patients by CCC</td>
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<th>Discharged by CCC</th>
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<td>Gail P Donchance</td>
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<th>High Readmission Risk</th>
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<th>Discharged Patients by Date</th>
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<th>Upcoming Pt Outreach</th>
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<table>
<thead>
<tr>
<th>Bundled Payment Totals</th>
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<table>
<thead>
<tr>
<th>Hospital Summary</th>
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<tr>
<th>Primary Surgeon</th>
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<td>ABOUZEID, MOHAMAD H</td>
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<td>SMITH, DEANE</td>
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<td>SWISTEL, DANIEL GEORGE</td>
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<th>Patient</th>
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# Clinical Care Coordinator Preadmission Assessment

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<tr>
<th>Living Environment</th>
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<td>Home Safety</td>
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<td>2/10/14</td>
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<td>Values/Beliefs</td>
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<td>1400</td>
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<td>Cognitive/Perceptual/Developmental</td>
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<td>Employment/Financial</td>
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<td>Functional Status Current</td>
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<td>IADL</td>
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<tr>
<td>Coping/Stress</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coping/Stress Caregiver</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discharge Needs Assessment</td>
<td></td>
<td></td>
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<tr>
<td>Anticipated Discharge Disposition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CCC Assessment Follow-Up</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BCARE Pre-Admit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risk Assessment and Prediction</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Living Environment
- Lives With: friend(s)
- Living Arrangements:
- Provides Primary Care For:
- Primary Care Provided By:
- Unique Family Situation:
- Quality Of Family Relationships: involved
- Able To Return To Prior Living: yes
- Living Arrangement Comments:

### Home Safety
- Feels Safe Living In Home: yes
- Potentially Unsafe Housing Conditions: no indoor...
### Readmission Risk Predictor Tool

<table>
<thead>
<tr>
<th>Patient</th>
<th>MRN</th>
<th>CCC</th>
<th>DOB</th>
<th>Age</th>
<th>Sex</th>
<th>Readm Risk - High?</th>
<th>Registries (Abbr)</th>
<th>Ind Adm Status</th>
<th>Index Adm Da</th>
<th>Surgery Date</th>
<th>Sched. Procedure</th>
<th>Procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anesthesia, Annabelle D</td>
<td>9980679</td>
<td></td>
<td>08/30/1980</td>
<td>33  y.o.</td>
<td>Female</td>
<td></td>
<td>Bundled Payment Total Joint</td>
<td>Discharged</td>
<td>12/10/2013</td>
<td>REPLACEMENT HIP TOTAL</td>
<td>REPLACEMENT TOTAL</td>
<td></td>
</tr>
<tr>
<td>Grimaldi, Cetest</td>
<td>9980705</td>
<td></td>
<td>09/04/1978</td>
<td>35  y.o.</td>
<td>Female</td>
<td></td>
<td>Bundled Payment Total Joint</td>
<td>Admission</td>
<td>9/6/2013</td>
<td>12/10/2013</td>
<td>REPLACEMENT HIP TOTAL</td>
<td>REPLACEMENT TOTAL</td>
</tr>
<tr>
<td>Surgery, Sicidy</td>
<td>9981083</td>
<td></td>
<td>01/01/1980</td>
<td>34  y.o.</td>
<td>Male</td>
<td></td>
<td>Bundled Payment Total Joint</td>
<td>Discharged</td>
<td>11/18/2013</td>
<td>11/20/2013</td>
<td>COLONOSCOPY</td>
<td>COLONOG</td>
</tr>
<tr>
<td>Care Coordination, Demo</td>
<td>9981390</td>
<td></td>
<td>01/01/1945</td>
<td>69  y.o.</td>
<td>Female</td>
<td></td>
<td>Bundled Payment Total Joint</td>
<td>Preadmission</td>
<td>4/15/2014</td>
<td>REPLACEMENT KNEE TOTAL</td>
<td>REPLACEMENT TOTAL</td>
<td></td>
</tr>
</tbody>
</table>
Patient Communication Tool – NYU Langone Health MyChart

MyChart at NYU Langone

You Might Want To...

View Test Results
For test results reviewed and released by your doctor, click here
*Some results may not be immediately available online*

Request Prescription Refill
To request a prescription refill, click here.
*For a new medicine or one prescribed by another provider please contact your doctor's office*
Inpatient Workflow + Order Sets – During-Care Outcomes Improvement

- Order Sets
- Epic Dashboard
- Reporting
**Inpatient Goal – Order Sets + Standard Workflow**

<table>
<thead>
<tr>
<th>Analgesic Pathway</th>
<th>POD Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pre-op Standard</strong></td>
<td></td>
</tr>
<tr>
<td>• Celebrex until day of surgery</td>
<td></td>
</tr>
<tr>
<td>• Continue opioids if there is pre-op use</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 250mg ropivacaine with epinephrine</td>
</tr>
<tr>
<td></td>
<td>• Ketorolac</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PACU/POD#0 Standard</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• EPCA or peripheral nerve catheter with +/- IV PCA</td>
<td></td>
</tr>
<tr>
<td>• APAP 1g IV upon PACU arrival and q6h ATC</td>
<td></td>
</tr>
<tr>
<td>• Ketorolac 30 mg IV q8h ATC</td>
<td></td>
</tr>
<tr>
<td>• Lyrica 50 mg bid</td>
<td></td>
</tr>
<tr>
<td>• Continue opioids if there is pre-op use</td>
<td></td>
</tr>
</tbody>
</table>
**Analgesic Workflow**

**Medications**

- **Adult PCA Drugs**
  - PCA Low Dose/Opioid Naive
  - PCA Average Dose
  - PCA Tolerance/High Dose/Opioid Tolerant

- **Pediatric PCA Drugs**
  - IV PCA (PEGS) Infusion (Intravenous, Continuous)

- **Pain medications starting PACU/Post operative Day 0**
  - For Patient Controlled Analgesia, please use PCA order set.
  - **Nursing Communication**
    - ONE TIME, Discontinue peripheral nerve catheter on POC 2 at 4 PM, Post-op
    - **Nursing Communication**
      - ONE TIME, Discontinue EPCA on POC 1 at 5 AM, Post-op
    - Ketorolac (TORadol) injection
    - 30 mg, Intravenous, Every 8 Hours PRN, Moderate pain, Post-op
    - Pregabalin (LYRICA) capsule
    - 50 mg, Oral, 2 Times Daily, Post-op

- **Pain medications starting Post operative Day 1**
  - Knee patients: Celebrex 200 mg oral twice daily or meloxicam 15 mg oral daily.

  Hip patients: Celebrex 100 mg oral twice daily or meloxicam 7.5 mg oral daily.

  Patients greater than 65 years old should receive Celebrex 100 mg oral twice daily.

  - Please select one of the following:
    - Celebrex (CELEBREX) capsule
      - 100 mg, Oral, 2 Times Daily, Starting 11/13/12, Post-op
    - Celebrex (CELEBREX) tablet
      - 7.5 mg, Oral, Daily, Starting 11/13/12, Post-op
    - **Opioids**
      - Acetaminophen (FEROCET) 5-325 mg per tablet
      - 1 tab, Oral, Every 4 Hours PRN, Mild pain, Starting 11/13/12, Post-op
      - **Opioids**
        - Acetaminophen (FEROCET) 10-325 mg per tablet
        - 1 tab, Oral, Every 4 Hours PRN, Severe pain, Starting 11/13/12, Post-op
**VTE Prophylaxis — Required**

**Anti-Platelet Agent**
*VTE prophylaxis using aspirin and foot pumps is not considered to be as effective as other prophylaxis modalities, but may be considered if the patient is at high risk for bleeding, undergoing high risk surgery, and not a candidate for IVC filter.*

- aspirin chewable tablet
  - 81 mg, Oral, Daily, Post-op

**Pharmacologic VTE Prophylaxis — Required**
*enoxaparin 30mg SQ Q12H is the preferred VTE prophylaxis for the Ortho Joint pathway
  - enoxaparin (LOVENOX) injection
    - 30 mg, SubCutaneous, Every 12 Hours, Post-op
  - fondaparinux (ARIXTRA) injection
    - 2.5 mg, SubCutaneous, Daily, Post-op
  - warfarin (COUMADIN) tablet
    - Oral, Post-op
- Reason for no Pharmacological VTE Prophylaxis

**Mechanical VTE Prophylaxis**
*Strongly consider placing mechanical VTE prophylaxis if pharmacologic prophylaxis contraindicated*

- Place Sequential Compression Device
  - Post-op
Acceptable According to Workflow
### Actual Patient Info

**Problem**
- Abdominal pain (Chronic)
- Osteoarthritis
- Needle hip arthroplasty

**Overview**
- Added by attending, P. N. P, inpatient, MD

**Active Lines/Drains/ Airways/Wounds**

<table>
<thead>
<tr>
<th>Name</th>
<th>Placement Date</th>
<th>Placement Time</th>
<th>Site</th>
<th>Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urethral Catheter Double-lumen</td>
<td>10/11/12</td>
<td>11:32</td>
<td>Double-lumen</td>
<td>5</td>
</tr>
<tr>
<td>Feeding Tube NG - Salem sump Left</td>
<td>10/11/12</td>
<td>11:33</td>
<td>Left sump</td>
<td>2</td>
</tr>
</tbody>
</table>

**Pain Control**
- Pain score (3)
- PI Satisfaction with Pain control and response to intervention (satisfied)

**VTE prophylaxis and planning**
- VTE risk score (4 = requires prophylaxis)
- Post-admission VTE prophylaxis planning (none)
- Post-admission VTE medication training (none)

**Therapy**
- Bed mobility -> rolling/tuming (Dependent)
- Bed mobility -> scooting bridging (Dependent)
- Bed mobility -> sit to supine (Dependent)
- Transfer Skill: Needs chair to bed (Dependent)
- Transfer Skill: Stand to sit (Dependent)
- Transfer Skill: Sit to stand (Dependent)
- Ambulation (0/96)
- Lower Extremity Dressing (not started)
- Toilet Training (not started)

**Discharge Plan**
- Discharge Disposition (discussed)
- Transportation (discussed)
- Discharge Summary Status (Follow up appointments made)
- Discharge Risks
  - lives alone, physical impairment, dependent with mobility/activities of daily living, financial support inadequate

**Most Recent Value**
- 5 - Five filed at 10/16/2012 10:07
- Pain medication is helping me filed at 10/16/2012 11:00
- Medication concerns [Pharmacy has Rx for Lovenox] filed at 10/16/2012 11:00
- Assistive person [brother trained to administer Lovenox] filed at 10/16/2012 11:00

**Most Recent Value**
- Moderate assist (25% patients effort) filed at 07/31/2012 07:00
- Maximum assist (25% patients effort) filed at 07/31/2012 07:00
- Unable to perform filed at 07/31/2012 07:00
- Unable to perform filed at 07/31/2012 07:00
- Unable to perform filed at 07/31/2012 07:00
- Maximum assist (25% patients effort) filed at 07/31/2012 07:00
- Maximum assist (25% patients effort) filed at 07/31/2012 07:00
- Maximum assist (25% patients effort) filed at 07/31/2012 07:00
- Maximum assist (25% patients effort) filed at 07/31/2012 07:00
- Taught hip precautions filed at 07/31/2012 07:00

**Most Recent Value**
- Rehabilitation facility [family has received list of options, van, wheelchair accessible][discussed with patient]
- NP has made pt appointments
## Bundled Payment Initiative Inpatient Census Report - Medicare Only

<table>
<thead>
<tr>
<th>Date</th>
<th>Surgery Date</th>
<th>Patient Name</th>
<th>MRN</th>
<th>Sex</th>
<th>Birth Date</th>
<th>Admission Date</th>
<th>Discharge Date</th>
<th>LOS to Date</th>
<th>ADT Patient</th>
<th>Actual Procedure Name</th>
<th>Surgeon</th>
<th>Service</th>
<th>Total Case Time</th>
<th>Payor</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>10/11/2013</td>
<td>Patient 1</td>
<td>MRN 1</td>
<td>Male</td>
<td>DOB</td>
<td>1</td>
<td>10/11/2013</td>
<td>10/11/2013</td>
<td>2.74</td>
<td>Inpatient</td>
<td>REPLACEMENT KNEE TOTAL</td>
<td>Surgeon 1</td>
<td>Ortho Total Joint</td>
<td>164.00mins</td>
<td>MEDICARE</td>
<td>71.00</td>
</tr>
<tr>
<td>10/09/2013</td>
<td>Patient 2</td>
<td>MRN 2</td>
<td>Male</td>
<td>DOB</td>
<td>2</td>
<td>10/09/2013</td>
<td>10/09/2013</td>
<td>4.74</td>
<td>Inpatient</td>
<td>REPLACEMENT HIP TOTAL</td>
<td>Surgeon 2</td>
<td>Ortho Total Joint</td>
<td>145.00mins</td>
<td>MEDICARE</td>
<td>85.00</td>
</tr>
<tr>
<td>10/10/2013</td>
<td>Patient 3</td>
<td>MRN 3</td>
<td>Male</td>
<td>DOB</td>
<td>3</td>
<td>10/10/2013</td>
<td>10/10/2013</td>
<td>3.76</td>
<td>Inpatient</td>
<td>REOP AVR</td>
<td>Surgeon 3</td>
<td>Cardiovascular</td>
<td>330.00mins</td>
<td>MEDICARE</td>
<td>69.00</td>
</tr>
</tbody>
</table>

Run Date: 10/14/2013
Homecare Workflow—Post-Care Outcomes Improvement

- Care Coordinator Post-Acute Documentation
- Transitional Care Document
- Analytics
# Real-Time Readmission, ED, Urgent Care Visit Report

<table>
<thead>
<tr>
<th>PATIENT CLASS</th>
<th>SERVICE</th>
<th>INDEX ATTENDING</th>
<th>MRN</th>
<th>PAT NAME</th>
<th>HOSP ADMSN TIME</th>
<th>HOSP DISCH TIME</th>
<th>CURRENT_DX DESCRIPTION</th>
<th>INDEX ADMIT DATE</th>
<th>INDEX DISCHARGE DATE</th>
<th>INDEX DRG NUM</th>
<th>INDEX DISCHARGE DISPOSITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inpatient</td>
<td>Medicine</td>
<td>Surgeon 1</td>
<td>MRN 1</td>
<td>Patient 1</td>
<td>10/13/2013</td>
<td></td>
<td></td>
<td>8/31/2013</td>
<td>9/5/2013</td>
<td>MS470</td>
<td>Skilled Nursing Facility</td>
</tr>
<tr>
<td>Observation</td>
<td>Surgery</td>
<td>Surgeon 3</td>
<td>MRN 3</td>
<td>Patient 3</td>
<td>10/14/2013</td>
<td>10/14/2013</td>
<td>Lymph edema</td>
<td>10/7/2013</td>
<td>10/11/2013</td>
<td>MS470</td>
<td>Home Health Care Svc</td>
</tr>
</tbody>
</table>

Yellow - Index Visit
Post Discharge Flow Sheet
Post Acute Care Provider Contact
Post Acute Care Provider Contact

The new "Contacted About" option in the Track Pt. Outreach section of the Outreach navigator is "PAC Provider Contact for Outreach".
Post Acute Goal –
Improved Outcomes and Patient Experience NYULMC Post-Acute Partners

Developed in collaboration with Partners
Standard Post Acute Pathways

- Focus on bi-directional exchange of information
- Twice weekly updates on high risk patients
- Interdisciplinary weekly call
- PAC Report card
- Quarterly PAC Committee Meeting
Criteria for Homecare

• Two Home Care Pathways
  • Standard Pathway
  • Enhanced Support Pathway

• VNSNY/TJR Enhanced Support Pathway Pilot Criteria
  • Single Joint replacement
  • Caregiver able to participate in therapy prior to DC
  • Stairs before discharge / No more that 1 flight in home
  • If private home bed/bath can't be longer than a flight of stairs
  • Eligible for SNF / Complex Needs

• Established risk profile to assist in determining appropriate disposition

• Focus on bi-directional electronic exchange of information
Transitional Care Document – Post-Care Outcomes Improvement

- Transfer Document
- Follow-up Form
- Continuity of Care Document
## Components of Transitional Care Communication Tool

### Transfer Document
Delivered at Discharge

- Demographics
- Type of surgery and date
- Care pathway
- Readmission risk
- Clinical Status
- Functional Status
- Patient Preferences / Comments
- Social History
- Knowledge Deficit
- Follow-up Appointments
- Hospital Contact Info
- VS/Smoking Status
- Education
- +CCD

### Follow-Up Form
Delivered Weekly

**Clinical Status**
- Pain
- VTE pro
- Surgical Wound
- Pressure Ulcer
- UTI
- Fever
- Diet
- Any new medications added
- Change in clinical condition
- Evaluated by MD/NP

**Functional Status**
- Number of PT/OT visits week
- Ambulation
- Stairs
- Transfers
- Falls

**Discharge Status**
- Anticipated Discharge Date
- Barriers to Discharge
- Patient on Target for Discharge
NYULMC EMR Lite
- NYU Clinical Care Coordinator readies documentation
- NYU clinician logs into system & completes Post Acute Transfer Form

NYULMC HIE
- Facilitates exchange of information between NYU and VNSNY systems

VNSNY Homegrown EHR
- Information received at VNSNY/Clinician notified
- Provider logs into system and accesses Post Acute Transfer Form and CCD

VNSNY nurse visits patient at home

Transitional Care Communication Workflow
Weekly Meeting with PAC partners to develop pathways understand information critical to transition

Meetings with PAC partners to develop workflow

Risk-Bearing Phase 2 Period begins

Testing NYU-VNSNY

Live with Risk Bearing Phase 2 Bundle Payment for Care Improvement Initiative

EMR-EMR transfer with VNSNY

Mar. - Nov 2012

Dec 2012

Jan, 2013

Jan – Mar 1, 2013

April 1st, 2013

Oct. 1st, 2013

Mar, 2014

Sept, 2014

Internal/external review of potential system solutions

Testing solution

Began training with VNSNY and NYU teams both individually and together
Made updates based on feedback from teams

Live with manual transitional care communication tool

Transitional Care Communication tool electronically sent to NYULMC HIE
We have exchanged over 7,000 forms with VNSNY
Bundle Payment Weekly Dashboard

Readmission Rate by First Discharge Setting - Primary Joint of the Lower Extremity

- Self Care: 8% (n = 3 out of 37 self care pts)
- HHA: 7% (n = 16 out of 231 HHA pts)
- SNF: 12% (n = 24 out of 194 SNF pts)
- IP Rehab: 5% (n = 3 out of 58 IRF pts)

Readmissions – Primary Joint of the Lower Extremity

<table>
<thead>
<tr>
<th># Readmissions</th>
<th>0-7 days</th>
<th>8-14 days</th>
<th>15-30 days</th>
<th>31-60 days</th>
<th>61-90 days</th>
<th>Total</th>
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<tbody>
<tr>
<td>Jan</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Feb</td>
<td>3</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Mar</td>
<td>5</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>13</td>
</tr>
<tr>
<td>Apr</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>May</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>June</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>Jul</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Aug</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>5</td>
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<td>Sep</td>
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<td>1</td>
<td>0</td>
<td>5</td>
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<tr>
<td>Nov</td>
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<td>0</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>4</td>
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<td>Jan 2014</td>
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<td>Feb 2014</td>
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<td>Total</td>
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<td>19</td>
<td>13</td>
<td>21</td>
<td>14</td>
<td>90</td>
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</table>
# Weekly Dashboard – Physician Level Reporting

<table>
<thead>
<tr>
<th>Discharge Disposition</th>
<th>90-Day Readmission Rate - Closed Episodes Only</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td># Patients (Closed Episodes Only)</td>
</tr>
<tr>
<td></td>
<td>Total</td>
</tr>
<tr>
<td># Patients Discharged</td>
<td># Readmissions (Closed Episodes Only)</td>
</tr>
<tr>
<td>Primary Joint of the Lower Extremity</td>
<td>779</td>
</tr>
<tr>
<td>HJD</td>
<td>733</td>
</tr>
<tr>
<td>DRG 469 - Primary Joint w MCC</td>
<td>17</td>
</tr>
<tr>
<td>Physician 1</td>
<td>4</td>
</tr>
<tr>
<td>Physician 2</td>
<td>4</td>
</tr>
<tr>
<td>Physician 3</td>
<td>2</td>
</tr>
<tr>
<td>Physician 4</td>
<td>2</td>
</tr>
<tr>
<td>Physician 5</td>
<td>1</td>
</tr>
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<td>Physician 6</td>
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<td>Physician 7</td>
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</tr>
<tr>
<td>Physician 8</td>
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</tr>
<tr>
<td>Physician 9</td>
<td>1</td>
</tr>
</tbody>
</table>
BPCI Discharge Disposition Patterns

Primary Joint Replacement – HJD / Tisch

Primary Joint Replacement – Lutheran

N = 1908, LOS: 4.79

N = 381, LOS: 4.57
BPCI 90-day Readmission Rate Trends

- TJR - NYU
- TJR - Lutheran

% Readmission

Time

BPCI Average Length of Stay

Time

Baseline
CY 2013
CY 2014
CY 2015
CY 2016
CY 2017

Length of Stay in Days

TJR - NYU
TJR - Lutheran
Lessons Learned

- Concept of bundle payment is still very new
- Continuous engagement requires reminders – re-education around reports, and data, new goals and targets, and regular discussion of performance
- Data is consumed and understood differently by different groups
- Leverage IT platforms (EMR, HIE, analytics) to identify population of interest at preadmission and during inpatient stay
- Early identification of BPCI patients is critical to success
- Place focused information in the hands of clinicians on a timely basis in order to facilitate care redesign
- Develop tools to risk stratify patients to allow targeted clinical intervention
- Developed and tested Care Coordination workflow manually
- Advance clinical and technical relationships with post acute partners to expand influence with care delivery
Questions