Pursuing Excellence in Care  
Transitions – Enhancing Safety in Kidney Patient Care  

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Geisinger Medical Center  
Geisinger Health System
Disclosures

- Nothing to disclose
Objectives

- To understand the need for transitions of care
- To demonstrate examples of transition programs that have made a clinical impact
- To suggest opportunities that dialysis caregivers can have in their patients' transitions of care
Why Implement Changes?

- > 75% of Medicare spending occurs in patients with 4 or more chronic diseases. (CBO)
- 25% of Medicare beneficiaries consume 85% of the Medicare expenditures. (CBO)
- ESRD population (0.7% of the Medicare population) consumes 7% of Medicare spending. (USRDS)
Why Implement Changes?

- 70% of American adults believe there is a need for major reform (CMWF 2011)
  - Inadequate access to care
  - Poorly coordinated care
  - Excessive cost
  - Administrative burdens
Why Implement Changes?

- Many of the defects in the current health care system stem from its disorganization (Millbank Q.)
- Poorly coordinated, fragmented care tends to be:
  - Inefficient
  - Ineffective
  - Error-ridden
  - Costly
- An entity charged with coordinating care clearly could have a major impact on the quality of health care
Why Implement Changes?

- Focus of CMS
- CMS’s Triple Aim
  - To improve the patients experience of care
  - To improve the health of the population
  - To reduce the per capita cost of health care
Examples of Transitions of Care That Have Made a Clinical Difference
What is Geisinger?

- Largest Rural Health Care System in the U.S.
- Approximately 3 million people in service area
  - > 48,000 inpatient admissions/year
  - > 2.0 million outpatient encounters/year
- 900+ Physicians, 450+ Advanced Practitioners
- 60+ Community Practice sites
- 6 Hospitals
- 270,000+ member health plan
- Healthcare IT and Informatics
  - EPIC in Ambulatory Clinics since 1996
  - EPIC in Inpatient Arena since 2007
Geisinger ProvenHealth

- Five Core Components
  - Patient-centered Primary Care
    - Chronic disease optimized via HIT
  - Integrated Population Management
    - Population segmentation and risk stratification
  - Medical Neighborhood
    - 360 degree care systems – SNF, ED, hospital, clinic, etc
    - Embedded case manager
Geisinger ProvenHealth

- Quality
  - Comprehensive chronic disease bundled metrics
  - Value-based Reimbursement
Geisinger ProvenHealth

- **Embedded Case Manager**
  - Facilitates Transitions of Care
    - Between hospital, ED, SNF, clinic, etc
  - Links health care team to patient/family
  - Focuses on high risk patients
  - Not disease management focused
  - 125-150 patients per Case Manager
## Results for Nursing Home

<table>
<thead>
<tr>
<th>Nursing Home</th>
<th>Baseline Readmissions 2008</th>
<th>PY 1 Readmissions 2009</th>
<th>Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>34%</td>
<td>18.5%</td>
<td>- 45.5%</td>
</tr>
<tr>
<td>B</td>
<td>18.5%</td>
<td>14.5%</td>
<td>- 21.6%</td>
</tr>
<tr>
<td>C</td>
<td>27%</td>
<td>9%</td>
<td>- 66.6%</td>
</tr>
<tr>
<td>D</td>
<td>44%</td>
<td>33%</td>
<td>- 25%</td>
</tr>
<tr>
<td>E</td>
<td>42.5%</td>
<td>31%</td>
<td>- 27%</td>
</tr>
<tr>
<td>F</td>
<td>27.5%</td>
<td>24%</td>
<td>- 12.7%</td>
</tr>
</tbody>
</table>
Medicare Readmissions

Risk Adjusted Readmissions/1000

- **2006:**
  - 0 sites: 43
  - 3 sites: 47

- **2007:**
  - 3 sites: 41
  - 13 sites: 46

- **2008:**
  - 25 sites: 31

- **2009:**
  - 25 sites: 34
  - 37 sites: 44

- **2010:**
  - 37 sites: 42

Legend:
- Blue bars represent PHN sites.
- Yellow bars represent Non-PHN sites.
- Black dot represents 44 Current PHN Sites.
ER stays flat in PHN while un-managed increases
Cumulative percent difference in spending attributable to PHN in the first 21 PHN clinics for calendar years 2005-2009. Dotted lines represent 95% confidence interval. $P = < 0.003$
## Clinical Results

### Claims Data 2005-2009

<table>
<thead>
<tr>
<th>Condition</th>
<th>Odds Ratio</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amputation</td>
<td>0.178</td>
<td>0.04-0.66</td>
</tr>
<tr>
<td>ESRD</td>
<td>0.688</td>
<td>0.51-0.91</td>
</tr>
<tr>
<td>MI</td>
<td>1.067</td>
<td>0.99-1.14</td>
</tr>
<tr>
<td>CVA</td>
<td>0.966</td>
<td>0.94-1.02</td>
</tr>
</tbody>
</table>
The ESRD Population and Transitions of Care
Why Transitions of Care is Needed

- ESRD patients are complex
  - ESRD patients at Geisinger
    - Average age 65.9 years
    - 57% male, 43% female
    - See 6.7 different classes of medical providers per year
    - Have 12.7 different prescriptions (not including those given at dialysis)
Readmission Rate – GMC 2010

![Bar chart showing readmission rates for different services and conditions over 30 and 90 days. The chart includes categories for All Pts Medicine Service, ESRD, and CKD4.]
Reasons for Admission

Top 10 Causes of Hospital Admission for ESRD Demo Patients

- Complication of device implant or graft
- Congestive heart failure, nonhypertensive
- Diabetes mellitus with complications
- Hypertension with complications and secondary hypertension
- Septicemia (except in labor)
- Pneumonia (except that caused by tuberculosis or sexually)
- Nonspecific chest pain
- Fluid and electrolyte disorders
- Coronary atherosclerosis and other heart disease
- Acute myocardial infarction

~ 60% of admissions are in “avoidable” categories
Reasons for Readmission – GMC

- ESRD – 30 days (69 patients; 100 readmissions; 13% of all readmissions)
  - 1. CHF (13%), 2. Sepsis (12%), 3. Access (10%), 4. Arrhythmia (7%), 5. Diabetes (7%) – 49%
- ESRD – 90 days (94 patients; 166 readmissions; 12% of all readmissions)
  - 1. Access (14%), 2. Sepsis (12%), 3. CHF (12%), 4. Electrolyte (8%), 5. General Symptoms (8%) – 54%
Transition Opportunities

- Vascular access
  - Patients with CVC for access have approximately a 3 fold increase in annual mortality
  - Patients with CVC for access have an approximately 10 fold increased risk of bacteremia over those with an AVF
  - 3X Increased risk in first year of HD
Transition Opportunities

- **Vascular access**
  - There is a significant decline in patients who will agree to an AVF or graft if on HD for 2 weeks with a catheter and have not had a surgery evaluation for AVF/graft

- **Fluid overload**
  - #1 cause of readmission for ESRD patients at GMC
  - #2 cause of readmission for ESRD patients in LDO-CMS Demonstration Project
Transition Opportunities

- Medication-related problems
  - Transitions of care/communication
- Dietary-related problems
  - #4 cause of readmission for ESRD at 90 days at GMC
- End-of-Life Care
  - Advanced Care planning
ESRD/CKD Medical Home Documented Results

- LDO/CMS Demonstration Project
- Utilizing a Transition of Care Team
  - 60% reduction in catheters
  - 25% higher medication compliance
  - 35% fewer access related admissions
  - 15% fewer re-admissions
  - 8% lower Non-dialysis costs
LDO/CMS Demonstration Project

Hospital Admissions PMPY (ESRD Demo)

- New program: 11/07
- 12 mos. to 4/08: 1.82
- 12 mos. to 4/09: 1.58
- P = .018

FFS Trend
Clinical Results

- ESRD Readmission Rates
- GMC Nephrology Group
  - CMI 2.0
  - 30 Day Readmission Rate 12.8%
  - 90 Day Readmission Rate 38.3%
- All Other Providers
  - CMI 2.01
  - 30 Day Readmission Rate 33.0%
  - 90 Day Readmission Rate 49.9%
Transitions of Care

Opportunities for the Dialysis Care-givers
Current Model of Care

Nephrologist

Facility-Based Team Dialysis

Hospitalization

Primary Care
Coordination of Care – New Model

*RN Case Manager*

Hospitalization

Facility-Based Team (Dialysis)

Nephrology

Primary Care
Programmatic Design

- A Case Manager(s) would be employed to act as the focal point for transitions of care for ESRD patients.
- The Case Manager will be trained by and provided clinical supervision by the Nephrology practice.
- Case management services will be provided to optimize medical management while patient hospitalized and to ensure proper care coordination with all appropriate arenas after discharge.
Objectives of Program

- To reduce unnecessary re-admissions and emergency department visits driven by unmanaged and poorly coordinated transitions for patients with ESRD
- Enhance patient and provider satisfaction
- Enhance communication surrounding ESRD patients across the care continuum
- Reduce medical costs by decreasing hospital and emergency department utilization
Coordination of Care – New Model

*RN Case Manager*

Hospitalization

Facility-Based Team (Dialysis)

Nephrology

Primary Care
ESRD Case Manager Pilot

- 50 patients enrolled
- Baseline data – 1.02 admissions/pt/year
- Initial data of program (4 months) –
  - 0.61 admissions/pt/year – 41% improvement from baseline
  - No readmissions within 30 days
  - 1 readmission within 90 days
QIO-Network 4 Collaborative

- Care Transitions Project
  - Between hospitals, nursing homes, and dialysis units
  - Focused on 4 counties in Western Pennsylvania
    - Two hospitals in project
  - Ten dialysis providers in area (2 in project)
  - 430 dialysis patients
    - 51% older than age 65
    - 8.8% older than age 85
QIO-Network 4 Collaborative

- Care Transitions Project
  - To reduce medication and treatment errors
  - To avoid inaccurate or missing rest results
  - To avoid inaccurate or missing physician orders
  - To reduce 30-day readmission rates
- Success dependent on:
  - Breaking down long-established “silos” of care
  - Deepening existing relationships and developing new community partners
Workgroup identified three major quality care management barriers

- Cross-setting transition workflow gaps between providers
  - Providers were not completely aware of the cross-setting needs of their patients.

- Communication disconnects
  - Providers were not aware of the patient specific information required for safe, dignified, efficient care.

- Lack of standardized, evidence-based documentation across providers
Cross-setting transition workflow gaps

“Hospital staff...had assumed they knew what information was needed by the next care provider to transition care for the ESRD patient. However they learned that their assumptions were short-sighted...”
Transition Communication Forms were developed specific to the ESRD patient
- For communication from hospital (or nursing home) to dialysis unit
- For communication from dialysis unit to hospital (or nursing home)
- Eight week pilot was conducted
Results of the Pilot

- Staff adjusted very quickly to the use of the Transition Communication Forms.
- Staff found the Transition Communication Forms very valuable in the enhancement of care of the ESRD patient.
- Staff wanted the Transition Communication Forms to be a permanent component of their clinical practice.

Network 4 Web Site Link –

- http://www.esrdnetwork4.org/facres
# Dialysis Unit to Hospital Transfer Summary

**Patient Name / ID:**

**DOB:**

**Primary Renal Dx:**

**Hepatitis B:**
- Antigen: [ ]
- Antibody: [ ]
- Date: 

**Chronic Dialysis Unit Name:**

**Dialysis Unit Phone:**

**Reason for Admission:**

## Allergies:

<table>
<thead>
<tr>
<th>Current Vascular Access</th>
<th>Access Location</th>
<th>Vascular Access Infection</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRIMARY</td>
<td>Access Surgeon</td>
<td>(within last 30 days):</td>
</tr>
<tr>
<td>SECONDARY (if any)</td>
<td></td>
<td>[ ] NO [ ] YES</td>
</tr>
<tr>
<td>AV/F</td>
<td>Needle Size:</td>
<td>Positive Blood cultures:</td>
</tr>
<tr>
<td>AV/G</td>
<td>Average bleeding time:</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>Buttonhole cannulation:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>[ ] NO [ ] YES [ ] Other, Details:</td>
<td></td>
</tr>
</tbody>
</table>

## Dialysis Prescription

<table>
<thead>
<tr>
<th>TX per week:</th>
<th>Duration:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schedule:</td>
<td></td>
</tr>
<tr>
<td>Dialysate =</td>
<td>Ca:</td>
</tr>
<tr>
<td>DFR rate:</td>
<td>BFR Rate:</td>
</tr>
<tr>
<td>Dry Weight:</td>
<td></td>
</tr>
</tbody>
</table>

## Dietary Order

<table>
<thead>
<tr>
<th>Na:</th>
<th>K:</th>
<th>Phos:</th>
<th>Fluid restriction:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Anemia Management

<table>
<thead>
<tr>
<th>ESA therapy:</th>
<th>IV Iron Therapy:</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Venetoclax® Ferelect®</td>
</tr>
<tr>
<td>Epogen® Aranesp® Procrit®</td>
<td>Ferremix® Infrum®</td>
</tr>
<tr>
<td>Dosage: Route:</td>
<td>Last Dose/Date Received:</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Routine Dialysis Medications

## Attachments

- [ ] Last 3 HD flow-sheets
- [ ] Medication list
- [ ] Care Plan
- [ ] Other (list below)

**Form Completed By:**

- Signature: 
- Date: 

---

Notes:
### Hospital to Dialysis Unit Transfer Summary

**Patient Name / ID:**

**Hospital:**

**Admission Date:**

**Discharging Physician:**

**Inpatient Attending Nephrologist(s):**

**DOB:**

**Primary Renal DX:**

**Hepatitis B:**
- Antigen: _____
- Antibody: _____
- Date: __________

**Allergies:**

<table>
<thead>
<tr>
<th>Current Vascular Access</th>
<th>Any changes this admission</th>
<th>Vascular Access Infection</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Turned catheter</td>
<td>- Clotting</td>
<td>- NO □ YES □</td>
</tr>
<tr>
<td>- AV/F</td>
<td>- Declotting</td>
<td>- Positive Blood cultures:</td>
</tr>
<tr>
<td>- AV/G</td>
<td>- Revision</td>
<td>- NO □ YES □</td>
</tr>
<tr>
<td>- Other</td>
<td>- New Placement</td>
<td>- If yes- name antibiotic(s)given:</td>
</tr>
<tr>
<td></td>
<td>(describe)</td>
<td></td>
</tr>
</tbody>
</table>

**Anemia Management**
- Administration of ESA’s during the Admission: None
- EpoGen®/Faraesp®/Procrit®
- Last Dose/Date Received:

**Iron Therapy:**
- Ferinject®
- Feraheme®
- Infed®
- Darfurim®
- Other
- Last Dose/Date Received:

**Miscellaneous**
- Date of last HD prior to discharge:
- Changes to EDW:
- Treated for other infections: (list)

**Medication Changes:**

**Discharge Dialysis Prescription Orders**
- TX per week: __________ K:
- Duration:
- Schedule:
- Dialysate = Na: __________ Ca:
- Biobart setting:
- DFR rate: __________ BFR Rate:
- Dry Weight:

**Discharge Instructions**
- Telephone report to the Chronic HD unit
- Report any changes in access placement or function
- Verify that transportation arrangements have been made through Social Service

**Fax Medical Records:**
- Last three HD treatment sheets
- Medication list
- Recent lab work-(Chemistries, CBC, Cultures)
- H&P, Nephrology consult, Radiology/Scan reports, Discharge Notes

**Form Completed By:**

Signature: __________

Date: __________
Observations of Pilot

- Cross-setting collaboration is not always easy – but it is possible and extremely important for our ESRD population.
- Cross-setting collaboration takes shared vision, time, flexibility and commitment.
- It is important that all participants have a voice in the development of cross-setting communication tools.
Summary

- The ERSD population is extremely complicated and in need for improved Transitions of Care.
- Successful Transitions of Care Programs have been performed in the ESRD population.
- Opportunities exist for all of us, as dialysis care-givers, to assist in improved Transitions of Care.
Acknowledgements

- Suzanne M. Kirschbaum, RN, CNN – ESRD Network 4
- Judy A. Stevenson, MSN, CPHQ – ESRD Network 4
- Quality Insights of Pennsylvania
- Network 4 Web Site Link –
  - http://www.esrdnetwork4.org/facres
Thank You
Questions?