Automation of Pressure Ulcer Prevalence Database and its Impact on Patient Outcome

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  Information System
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  Information System
Memorial Sloan-Kettering Cancer Center

Academic medical center focusing on cancer treatment and research, located in NYC and Tri-state region

- Est. 1884 – The world's oldest and largest private cancer center
- 470 Inpatient Beds
- 520,000 Outpatient Visits
- 19,000 Surgical Cases
- 11,000 Employees
- 2,000 Nursing Staff
Objectives

Describe the technological change that can result from collaboration among Nursing, NI, QM & IS

1.

2.

3.

4.

5.

6.

Memorial Sloan-Kettering Cancer Center
Objectives

Describe the technological change that can result from collaboration among Nursing, NI, QM & IS

1. Discuss statistics associated with pressure ulcer prevalence
2. 
3. 
4. 
5.
Objectives

Describe the technological change that can result from collaboration among Nursing, NI, QM & IS

1. 

2. Describe the manual process using paper to collect pressure ulcer prevalence data

3. 

4. 

5.
Objectives

Describe the technological change that can result from collaboration among Nursing, NI, QM & IS

1.

2.

3. Define the process used to automate pressure ulcer prevalence data collection

4.

5.
Objectives

Describe the technological change that can result from collaboration among Nursing, NI, QM & IS

1. 

2. 

3. 

4. Describe how SDLC principles were applied to the software application design, development and evaluation

5. 

Memorial Sloan-Kettering Cancer Center
Objectives

Describe the technological change that can result from collaboration among Nursing, NI, QM & IS

1.

2.

3.

4.

5. Describe clinical benefits of using pressure ulcer database
Objectives

Describe the technological change that can result from collaboration among Nursing, NI, QM & IS

1.

2.

3.

4.

5.

6. Describe the data conversion process to send data electronically to NDNQI
Pressure Ulcer Incidence and Prevalence

- A 79% increase in pressure ulcers in hospitalized patients between 1993 and 2006 (Ayello & Lyder, 2009)

- Prevalence and incidence remain high across all health settings; costs in terms of human suffering and health care dollars.

- Represent a major quality indicator of nursing care and are now under the close watch of many regulatory agencies.
Pressure Ulcer Prevalence Data Collectors

- Pressure ulcer survey team
  - 3 wound care specialized nurses
    (1 CWOCN and 2 treatment room nurses)
  - 2 data collectors (RN) from each inpatient nursing unit

- Perform the survey each month
Analysis Phase:  
Paper based pressure ulcer survey work flow

<table>
<thead>
<tr>
<th>Work flow- Paper based</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data collectors</td>
</tr>
<tr>
<td>Transcript Pt</td>
</tr>
<tr>
<td>Demographic information</td>
</tr>
<tr>
<td>Assess Pts and</td>
</tr>
<tr>
<td>review nursing</td>
</tr>
<tr>
<td>documentation</td>
</tr>
<tr>
<td>Complete form</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>Complete form</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>Review and validate</td>
</tr>
<tr>
<td>collected data</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CWOCN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prepare and distribute</td>
</tr>
<tr>
<td>forms to data collectors along with Pt Census info</td>
</tr>
<tr>
<td>Review and validate</td>
</tr>
<tr>
<td>collected data</td>
</tr>
<tr>
<td>Send forms to QM</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>QM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Review and validate</td>
</tr>
<tr>
<td>collected data</td>
</tr>
<tr>
<td>Enter data into</td>
</tr>
<tr>
<td>QM DB</td>
</tr>
<tr>
<td>Review and validate</td>
</tr>
<tr>
<td>data</td>
</tr>
<tr>
<td>Enter data into</td>
</tr>
<tr>
<td>NDNQI DB</td>
</tr>
<tr>
<td>Review and validate</td>
</tr>
<tr>
<td>data</td>
</tr>
</tbody>
</table>
Analysis Phase:
Paper based pressure ulcer survey work flow

Work flow - Paper based

<table>
<thead>
<tr>
<th>Data collector</th>
<th>Transcript Pt Demographic information</th>
<th>Assess Pts and review nursing documentation</th>
<th>Complete form 1</th>
<th>Complete form 2</th>
<th>Review and validate collected data</th>
</tr>
</thead>
<tbody>
<tr>
<td>CWOCN</td>
<td>Prepare and distribute forms to data collectors along with Pt Census info</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>QM</td>
<td>Review and validate collected data</td>
<td>Send forms to QM</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Review and validate collected data</td>
<td>Enter data into QM DB</td>
<td>Review and validate data</td>
<td>Enter data into NDNQI DB</td>
<td>Review and validate data</td>
</tr>
</tbody>
</table>
Analysis Phase: Need Assessment – PIECES

- PIECES framework consists of 6 categories developed by James Wetherbe for classifying problems

- Performance, Information, Economics, Control, Efficiency and Service
Request To Nursing Informatics

Can we automate our paper process of collecting pressure ulcer prevalence in order to:

- Improve accuracy of data
- Improve time management
- Improve utilization of resources
- Analyze data in real time to make the greatest impact on patient care outcomes
- Allow for collection of internal and external data to improve patient outcomes and utilization of resources
- Allow for better protection of patients and organizational sensitive material
Stakeholders

- Pressure ulcer data survey team
- Nursing informatics department
- Quality management department
- Information system department
- Nursing leadership
- Nursing staff at MSKCC
- Patients at MSKCC
Scope of Pressure Ulcer Data Base (PUDB)

- Build database with data entry driven logic
- Ability to download the current patient census
- Secure driven access on any unit clinical work station
- Develop automatic queries that analyze data collection and provide summarized information for data collectors post survey
- Allow data to electronically map to quality management database
PUDB – 5 Logical Flows

The logic of Pressure Ulcer (PU) Database

Main data collection form

Skin Inspection → Yes → Braden Score >18 → Yes → Pt has PU → Yes

Skin Inspection → Yes → Braden Score >18 → No → Pt has PU → No

Prevention/Treatment form

Pu Prevention Document → Pu Treatment Document → Pu Assessment Document

Save

Save and Go to Next Record
Comparison Workflow
Paper vs Automated

Paper based
- CWO CN prepare forms day prior to survey day
- CWO CN distribute forms to users on survey day
- Each data collector transcribes PUDP demographic info to forms
- Collectors assess PIs and review nursing documentation
- Form 1 completed validated by data collectors
- Form 2 completed validated by data collectors
- Form 1 reviewed for completeness by CWO CN
- Survey forms sent to QM
- Survey transcribed

Automated
- Data collectors assess PIs and review nursing documentation
- Data entered validated into PUDP by data collectors
- Queries for real-time decision making by teams
- Data converted in XML file and validated by IS
- Data sent to NDNQI by QM

6MONTHS

Few hours
System Development Life Cycle

- Analysis: 09-10/2009
- Developing/Testing: 10-12/2009
- Training: 01-02/2010
- Pilot: 02-05/2010
- Evaluation/Ongoing Management: 05/2010

Go Live
Evaluation

- **Financial indicators**
  - Time study
  - Indirect costs (office supply)

- **Clinical indicators**
  - Improved decision support by faster extracting/utilizing of pressure ulcer data
  - Improved internal and external quality reporting
  - Efficient evaluation of current treatment protocols on nursing units
  - Improved users’ satisfaction
Clinical Benefits

Identification of hospital-wide and unit pressure ulcer specific patterns:

- Pressure ulcer identification/locations
- Staging/Diagnosis issues
- Prevention measures initiated
- Treatment appropriateness/preferences

Analysis of hospital-wide and unit specific data:

- Prevalence of Braden risk assessment subscale factors
- Pressure ulcer prevention and treatment outcomes
- Pressure ulcer prevention and treatment product utilization
Clinical Benefits

Interventions in real time:

- Corrections in staging/diagnosis
- Implementation of prevention measures
- Adjustments in treatments to improve outcomes

Evaluation of hospital-wide and unit specific outcomes:

- Pressure ulcer education
- Comparison of prevalence between units and benchmarked against NDNQI NCI and teaching hospital cohorts
- Skin/wound/pressure ulcer product performance
Monthly Pressure Ulcer Prevalence Rate at MSKCC

PUDDB was implemented
Skin Inspection Form

<table>
<thead>
<tr>
<th>Patient Name</th>
<th>Room</th>
<th>MRN</th>
<th>Age</th>
<th>Gender</th>
<th>Unit Name</th>
<th>Year</th>
<th>Month</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jane Doe</td>
<td>15</td>
<td>1</td>
<td>60</td>
<td>Male</td>
<td>UCC</td>
<td>2011</td>
<td>3</td>
</tr>
</tbody>
</table>

**Skin Inspection:**

- Done
- Patient refused
- Patient off unit
- Unsafe for patient condition
- Patient actively dying
- Discharged

Main Menu
# Assessment Form

<table>
<thead>
<tr>
<th>Patient Name</th>
<th>Room</th>
<th>MRN</th>
<th>Age</th>
<th>Gender</th>
<th>Unit Name</th>
<th>Year</th>
<th>Month</th>
</tr>
</thead>
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<td>1</td>
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<td>UCC</td>
<td>2011</td>
<td>3</td>
</tr>
</tbody>
</table>

## Skin Inspection

- **Done**:

## On Admission

- **Admission Date**: 3/1/2011
- **Skin Assessment Document w/24hrs of admission**: Yes
- **Braden Score**: 23

## Ongoing Assessment

- **Braden Score w/ Last**: > 0 to 12 hours
- **Skin Assessment Document w/ 24hrs**: Yes
- **Braden Score**: 23
- **Pt has Pressure Ulcer**: No
- **Restrain in Use**: Mylar Feb 2011

*If admitted w/ last 24-48 hours, repeat Admission Braden Score.*
## Prevention Care Plan Form

<table>
<thead>
<tr>
<th>Patient Name</th>
<th>Room</th>
<th>MRN</th>
<th>Age</th>
<th>Gender</th>
<th>Unit Name</th>
<th>Year</th>
<th>Month</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jane Doe</td>
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<td>1</td>
<td>60</td>
<td>Male</td>
<td>UCC</td>
<td>2011</td>
<td>3</td>
</tr>
</tbody>
</table>

### Pressure Ulcer (PU) Prevention

**Prevent Care Plan Initiated**: Yes

Prevention Measures are documented within last 24 hours:

- **Prevention Measure(s) w/ 24hrs**: Yes
- **Nutritional Support**: Patient refused
- **Redistribution surface**: Yes
- **Moisture Management**: Yes
- **Specialty Bed**: Unnecessary for patient
- **Chair Cushion**: No
- **Repositioning**: Yes
- **Increased Mobility Plan**: Documented contraindication
Treatment Plan Form

Patient Name: Jane Doe
Room: 15
MRN: 1
Age: 60
Gender: Male
Unit Name: UCC
Year: 2011
Month: 3

Pressure Ulcer (PU) Document

PU Flowsheet Initiated: Yes
PU Treatment Plan Initiated: Yes
Wound Care Consult: NA

* For Stage 3, 4, Unstageable, and Deep Tissue Injury
## PU Assessment Form

<table>
<thead>
<tr>
<th>Patient Name</th>
<th>Room</th>
<th>MRN</th>
<th>Age</th>
<th>Gender</th>
<th>Unit Name</th>
<th>Year</th>
<th>Month</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jane Doe</td>
<td>15</td>
<td>1</td>
<td>60</td>
<td>Male</td>
<td>UCC</td>
<td>2011</td>
<td>3</td>
</tr>
</tbody>
</table>

### Pressure Ulcer (PU) #1

- **Stage:** Stage 1
- **Location:** Rt. Sacrum
- **CAPU:** Yes

### Pressure Ulcer (PU) #2

- **Stage:** Stage 2
- **Location:** Rt. Ischial Tuberosity
- **CAPU:** No
- **HAPU:** Yes
- **UAPU:** No
- **From which Unit:** ICU

### Documentation of Treatment:

**Stage 1:**
- **Outcomes:** No Change
- **Treatment 1:** Normal Saline moist dressing
- **Treatment 2:** Dakin's impregnated gauze
- **Treatment 3:** Other Antimicrobial Dressing

**Stage 2:**
- **Outcomes:** Deteriorated
- **Treatment 1:** Normal Saline moist dressing
- **Treatment 2:** Hydrocolloid
- **Treatment 3:** Ointments

---

*CAPU: Community Acquired PU, *HAPU: Hospital Acquired PU, *UAPU: Unit Acquired PU*
# Data Review Form

**Find Record**

<table>
<thead>
<tr>
<th>Total Number of Unit Census in DB:</th>
<th>1</th>
</tr>
</thead>
</table>

**Main Menu**

| Number of Patients Completed Survey: | 1 |

### Patient Information

- **Pt Name:** Jane Doe
- **MRN:** 1
- **Age:** 60
- **Gender:** Male
- **Unit Name:** UCC
- **Room:** 15

### Skin Assessment

- **Skin Inspection Done:** Done
- **Admission Date:** 3/1/2011
- **Admission Braden Score:** 23
- **Admission Skin Assessment:** Yes

### Pressure Ulcer Management

- **Prevent Care Plan Initiated:** Yes
- **Prevent on Measure W/last 24hrs:** Yes
- **Redistribution surface:** Yes
- **Specialty Bed:** Unnecessary for patient
- **Increased Mobility Plan:** Documented contraindication
- **PU Flowsheet Initiated:** Yes
- **Wound Care Consult:** NA

### Pressure Ulcer Details

#### Stage 1

- **Stage 1 Category:** No
- **Location:** Pt. Sacrum
- **1 Treatment 1:** Normal saline moist dressing
- **1 Treatment 2:** Other antimicrobial dressing

#### 1 CAFU

- **1 CAFU:** Yes
- **1 HAPU:** No
- **1 Documentation of Treatment:** Yes
- **1 Treatment 2:** Dakin's impregnated gauze
- **1 Outcomes:** No Change
### Data Report Form

#### Survey Data Collection Analysis Report

<table>
<thead>
<tr>
<th>Year: 2013</th>
<th>Month: 3</th>
<th>Unit: UCC</th>
<th>Date: 3/2/2011</th>
<th>Time: 2:55 PM</th>
</tr>
</thead>
</table>

1. Unit census: 1
2. Number of patients surveyed: 1
3. Number of patients with pressure ulcers: 1
4. Number of patients who developed Pressure Ulcer while admitted to MSKCC (HAPU): 1
5. Number of patients with Unit Acquired Pressure Ulcer (UAPU): 0
6. Total number of Pressure Ulcer: 2
7. Total number of HAPU: 1
8. Total number of UAPU: 0
9. Number of patients admitted MSKCC with Pressure Ulcer (CAPU): 1
10. Number of patients who had CAPU and HAPU: 1
11. Number of patients with no documented Admission Braden Score: 0
12. Number of patients with no documented Admission Skin Assessment: 0
13. Number of patients with a Braden Score of 12 within 48 hours of Prevention Care Plan: 0
14. Number of patients with a Pressure ulcer without Flow Sheet initiated: 0
15. Number of patients with a Pressure ulcer without Treatment Plan initiated: 0
16. List of Pressure Ulcers by stage, location, CAPU, HAPU, and treatment plan:

<table>
<thead>
<tr>
<th>Stage</th>
<th>Location</th>
<th>Form</th>
<th>Treatment(1)</th>
<th>Treatment(2)</th>
<th>Treatment(3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 1</td>
<td>Mt. Serrum</td>
<td>CAPU</td>
<td>Normal Saline moist dressing</td>
<td>Dakin’s impregnated gauze</td>
<td>Other Antimicrobial Dressing</td>
</tr>
<tr>
<td>Stage 2</td>
<td>Mt. Serrum Tuberculosis</td>
<td>HAPU</td>
<td>Normal Saline moist dressing</td>
<td>Hydrocolloid</td>
<td>Ointments</td>
</tr>
</tbody>
</table>

17. The type and number of Specialty beds:

18. The type and number of Treatment options:

<table>
<thead>
<tr>
<th>Treatment Options</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal Saline moist dressing</td>
<td>2</td>
</tr>
<tr>
<td>Other Antimicrobial Dressing</td>
<td>1</td>
</tr>
<tr>
<td>Ointments</td>
<td>1</td>
</tr>
<tr>
<td>Hydrocolloid</td>
<td>1</td>
</tr>
<tr>
<td>Dakin’s impregnated gauze</td>
<td>1</td>
</tr>
</tbody>
</table>

19. Number of patients who have HAPU and “No” Specialty Bed: 0
20. Number of patients who have HAPU and “No” Repositioning: 0
21. Number of patients who have HAPU and “No” Nutritional Support: 0
22. Number of patients who have HAPU and “No” Moisture Management: 0
Pressure Ulcer Survey Data Flow

1. **Nursing Dept.**
   - Collect data
   - MSK XML file
   - PU data in XML format
   - NDNQI
   - PUDB Data: reformat and rename fields, add NDNQI field relationship logic

2. **Information Systems Dept.**
   - PU data in XML format
   - e*Gate
   - NDNQI XML Validator
   - No
   - Validated
   - Yes
   - Convert data into DEL format
Query PU Data Output

**dbo_PatientPressureUppers**

<table>
<thead>
<tr>
<th>Age</th>
<th>Gender</th>
<th>AdmissionD</th>
<th>SkinInspect</th>
<th>AdmissionBS</th>
<th>AdmissionSkin</th>
<th>BSwithinLas</th>
<th>DailyBS</th>
<th>PreventCare</th>
<th>PreventionA</th>
<th>SkinA</th>
</tr>
</thead>
<tbody>
<tr>
<td>76</td>
<td>Female</td>
<td>9/14/2010</td>
<td>Done</td>
<td>16</td>
<td>Yes</td>
<td>12 to 24 hours</td>
<td>15</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>74</td>
<td>Male</td>
<td>8/17/2010</td>
<td>Done</td>
<td>18</td>
<td>Yes</td>
<td>12 to 24 hours</td>
<td>20</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>75</td>
<td>Male</td>
<td>8/15/2011</td>
<td>Patient refused</td>
<td>20</td>
<td>Yes</td>
<td>&gt; 12 to 24 hours</td>
<td>20</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>69</td>
<td>Male</td>
<td>9/14/2011</td>
<td>Patient off unit</td>
<td>21</td>
<td>Yes</td>
<td>&gt; 12 to 24 hours</td>
<td>21</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>60</td>
<td>Female</td>
<td>10/19/2010</td>
<td>Done</td>
<td>20</td>
<td>Yes</td>
<td>&gt; 12 to 24 hours</td>
<td>20</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>72</td>
<td>Male</td>
<td>9/7/2010</td>
<td>Done</td>
<td>20</td>
<td>Yes</td>
<td>12 to 24 hours</td>
<td>21</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>77</td>
<td>Female</td>
<td>8/6/2010</td>
<td>Patient active</td>
<td>22</td>
<td>Yes</td>
<td>&gt; 0 to 12 hours</td>
<td>21</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>44</td>
<td>Male</td>
<td>8/25/2011</td>
<td>Done</td>
<td>21</td>
<td>Yes</td>
<td>&gt; 0 to 12 hours</td>
<td>20</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>72</td>
<td>Female</td>
<td>9/19/2011</td>
<td>Done</td>
<td>21</td>
<td>Yes</td>
<td>&gt; 0 to 12 hours</td>
<td>20</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>76</td>
<td>Male</td>
<td>9/10/2011</td>
<td>Done</td>
<td>20</td>
<td>Yes</td>
<td>&gt; 0 to 12 hours</td>
<td>20</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**xGenderFID xRecencyHoursFID xPressureUcerRiskAssessmentFID xPressureUcerRiskAssessmentOnAdmission xUcerRiskAssessmentScoreOnAdmission xUcerAtRiskLastAssessmentFID xUcerRiskAssessmentHDLastScale xUcerRiskAssessmentScoreLast TotalUcerCount HospAcquiredCount**

<table>
<thead>
<tr>
<th>Gender</th>
<th>RecencyHours</th>
<th>PressureUcerRiskAssessmentFID</th>
<th>PressureUcerRiskAssessmentOnAdmission</th>
<th>UcerRiskAssessmentScoreOnAdmission</th>
<th>UcerAtRiskLastAssessmentFID</th>
<th>UcerRiskAssessmentHDLastScale</th>
<th>UcerRiskAssessmentScoreLast</th>
<th>TotalUcerCount</th>
<th>HospAcquiredCount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>&gt; 12 to 24 hours</td>
<td>Yes</td>
<td>Yes</td>
<td>Braden</td>
<td>22</td>
<td>No</td>
<td>Braden</td>
<td>20</td>
<td>0</td>
</tr>
<tr>
<td>Female</td>
<td>&gt; 12 to 24 hours</td>
<td>Yes</td>
<td>Yes</td>
<td>Braden</td>
<td>20</td>
<td>No</td>
<td>Braden</td>
<td>19</td>
<td>0</td>
</tr>
<tr>
<td>Female</td>
<td>&gt; 12 to 24 hours</td>
<td>Yes</td>
<td>Yes</td>
<td>Braden</td>
<td>18</td>
<td>Yes - based on risk</td>
<td>Braden</td>
<td>18</td>
<td>0</td>
</tr>
<tr>
<td>Female</td>
<td>&gt; 12 to 24 hours</td>
<td>Yes</td>
<td>Yes</td>
<td>Braden</td>
<td>20</td>
<td>No</td>
<td>Braden</td>
<td>23</td>
<td>0</td>
</tr>
<tr>
<td>Female</td>
<td>&gt; 12 to 24 hours</td>
<td>Yes</td>
<td>Yes</td>
<td>Braden</td>
<td>20</td>
<td>No</td>
<td>Braden</td>
<td>20</td>
<td>0</td>
</tr>
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<td>Yes</td>
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<td>No</td>
<td>Braden</td>
<td>19</td>
<td>0</td>
</tr>
<tr>
<td>Female</td>
<td>&gt; 12 to 24 hours</td>
<td>Yes</td>
<td>Yes</td>
<td>Braden</td>
<td>18</td>
<td>Yes - based on risk</td>
<td>Braden</td>
<td>18</td>
<td>0</td>
</tr>
</tbody>
</table>
PU Data in XML Format

<table>
<thead>
<tr>
<th>Gender</th>
<th>Hours</th>
<th>Has Absent</th>
<th>Has Sicks</th>
<th>Has Blanks</th>
<th>Predictor Value</th>
<th>Risk Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>≤ 0 to 24 hours</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>&lt;br&gt;Male = 0</td>
<td>1.0</td>
</tr>
<tr>
<td>Female</td>
<td>≤ 0 to 24 hours</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>&lt;br&gt;Female = 1</td>
<td>1.0</td>
</tr>
<tr>
<td>Male</td>
<td>&gt; 24 to 48 hours</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>&lt;br&gt;Male = 0</td>
<td>1.0</td>
</tr>
<tr>
<td>Female</td>
<td>&gt; 24 to 48 hours</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>&lt;br&gt;Female = 1</td>
<td>1.0</td>
</tr>
<tr>
<td>Male</td>
<td>&gt; 48 to 72 hours</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>&lt;br&gt;Male = 0</td>
<td>1.0</td>
</tr>
<tr>
<td>Female</td>
<td>&gt; 48 to 72 hours</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>&lt;br&gt;Female = 1</td>
<td>1.0</td>
</tr>
</tbody>
</table>
NDNQI Data Submission Work Flow

MSK NDNQI Quarterly Submission Work Flow

NDNQI deadlines:
- Q1: 5/15
- Q2: 8/15
- Q3: 11/15
- Q4: 2/15

Key
- Nursing group
- Interface group

1. Provide PU file
2. Provide 1 month Bsi test file
3. Provide 1 month PU test file
4. Provide Falls file
5. Data correction
6. PU testing
7. PU & Falls XML format
8. Download NDNQI update
9. Update I/F mapping

3/8/2011
Special Thanks

- Mary Lakaszawski, MSN, RN CWOCN
- Helina Beninati, RN
- Tracey Liucci, RN
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- Kevin Browne, MSN, RN CCRN, Director of Nursing
- Patricia Mctague, MS, RN Nurse Leader
- Brenda Soto Mercado, Data Management Assistant
- Joanne Bulfin, Data Management Coordinator
- Jing Yan, MS, Integration Programmer Analyst
- Jordan Winsten, Senior Systems Analyst

Memorial Sloan-Kettering Cancer Center
QUESTIONS?
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