The Team

• Division
  – CS & E Participant - Carlayne Jackson, MD
  – CS & E Participant - Nicole Buenning, MHA
  – Team Member - Alisha Chini, RN
  – Team Member - Amanda Bryant
  – Team Member - Delia Villarreal
  – Team Member - Ladonna Adams
  – Facilitator – Amruta Parekh, MD, MSPH

• Sponsor Department
  – President / CEO UT Medicine - Thomas Mayes, MD, MBA
What We Are Trying to Accomplish?

OUR AIM STATEMENT

The goal of this project is to improve Clinical Staff Competency in our outpatient UT Medicine clinics by July 15, 2009.
Project Milestones

- Team Created: March 2009
- AIM statement created: March 2009
- Weekly Team Meetings: March - August
- Background Data, Brainstorm Sessions: March - April
- Workflow and Fishbone Analyses: March – April
- Interventions Implemented: April - May
- Data Analysis: June - August
- CS&E Presentation: August 28, 2009
Background

• Blue Ribbon Tours – February / March 2009
  – Provider Satisfaction

• EpicCare Implementation
  – Increased Intake Times

• Inconsistent Medical Assistant training and experience
How Will We Know That a Change is an Improvement?

• Visit Length
  – Time from MA Intake to Checkout

• Pre and Post Training Test Scores

• Provider, Medical Assistant and Technician Feedback (Survey Monkey)
Selected Process Analysis Tools

• Brainstorming
  – Clinic Managers
  – Medical Directors
  – Medical Assistants on Project Team

• Fishbone Diagram
Decrease in Clinical Staff Competency

**Fish Bone Diagram**

- **Medical Assistant**
  - Lack of control
  - Rising expectations
  - Varying expectations
  - Supervisor variability
  - Lack of communication / teamwork
  - Inadequate staffing

- **Education**
  - Varying education levels
  - Lack of cross-training
  - Scheduled with different physicians
  - Certification variability
  - Varying MA training and externships
  - Physician protocols

- **Technician**
  - Limited physician contact
  - Small workspaces
  - Varying workflows
  - "Keep physicians happy"

- **Physician**
  - Frequent schedule changes
  - Poor communication
  - EMR – lack of training
  - Lack of leadership / involvement
  - Administrative assistant use
  - Staff vacancies
  - Overbooking

- **Environment**
  - Culture change
  - Template access
  - Overbooking

**Decrease in Clinical Staff Competency**
Neurology Dept Standard Office Visit 7/07/2008

Front Desk
- PSR/Front Desk Staff Arrives Pt in Epic
- Greet Pt & Collects Questionnaire, Files in MR

Future Appt Made, Directed to Ancillary Services

Patient
- Pt Brings Completed Neurology Questionnaire to Appt

Nurse/MA
- Views Pt's Arrival on Schedule Screen in Epic
- Escorts Pt to Intake Area to take Pt Weight
- Escorts Pt to Exam Rm for Vitals: BP, P, HT
- Documents or confirm Vitals, Medical/Surgical HX & Meds, taking in MR, ROS
- If applicable: Internal PFT's Performed; Discreet Data Entered into RT Form, File in MR
- MD Notified Pt in Exam Rm
- MD Reviews Questionnaire and Documents in appropriate Neurology Form
- Interviews Pt and Documents Information
- Physician Performs Physical Exam or procedure

Physician
- Completes Orders Gives to Nursing Staff, close encounter
- Sends Pt to Front Desk with discharge instructions (i.e. AVS, Orders, etc)

*** Staff Mails Neurology and HA Questionnaire Packet to New Pts When the Initial Appt is Made
Selected Decision Making Tools

- Histogram
- Paired T-Test
- Statistical Process Control
- Survey
# Background Data

## SPRING 2009 BLUE RIBBON SCORECARD

<table>
<thead>
<tr>
<th>Scale: 5=exceptional  4=good  3=fair  2=needs work  1=unacceptable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exceeds Target</td>
</tr>
<tr>
<td>Within Target Range</td>
</tr>
<tr>
<td>Below Target</td>
</tr>
<tr>
<td>Clinic Manager</td>
</tr>
</tbody>
</table>

### Provider-Related Issues

#### Daily Operations

- Clinics with less than 4 responses grayed out
- Adequate staffing
- Chart availability for pre-scheduled patients
- Chart completion- labs, reports, etc.
- Readiness of Exam Rooms
- Ability to complete work without interruption

#### Process Ratings

- Messaging follow-up
- Lab/test result follow-up
- Notification of no-shows
- Referral/consult note return
- Overall Provider satisfaction score

<table>
<thead>
<tr>
<th></th>
<th>Responses</th>
<th>Avg rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adequate staffing</td>
<td></td>
<td>4.5</td>
</tr>
<tr>
<td>Chart availability</td>
<td></td>
<td>4.5</td>
</tr>
<tr>
<td>Chart completion</td>
<td></td>
<td>4.5</td>
</tr>
<tr>
<td>Readiness of Exam Rooms</td>
<td></td>
<td>4.5</td>
</tr>
<tr>
<td>Ability to complete work without interruption</td>
<td></td>
<td>4.5</td>
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<table>
<thead>
<tr>
<th></th>
<th>2008 Overall UT Medicine</th>
<th>2009 Overall UT Medicine</th>
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<tbody>
<tr>
<td>58</td>
<td>95</td>
<td></td>
</tr>
<tr>
<td>3.8</td>
<td>4.0</td>
<td></td>
</tr>
<tr>
<td>3.8</td>
<td>3.7</td>
<td></td>
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<tr>
<td>3.8</td>
<td>4.1</td>
<td></td>
</tr>
<tr>
<td>3.8</td>
<td>3.6</td>
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</table>

<table>
<thead>
<tr>
<th></th>
<th>Avg rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Messaging follow-up</td>
<td>4.0</td>
</tr>
<tr>
<td>Lab/test result follow-up</td>
<td>4.0</td>
</tr>
<tr>
<td>Notification of no-shows</td>
<td>4.5</td>
</tr>
<tr>
<td>Referral/consult note return</td>
<td>4.0</td>
</tr>
<tr>
<td>Overall Provider satisfaction score</td>
<td></td>
</tr>
</tbody>
</table>
Clinical Training Pre-Test Statistics

<table>
<thead>
<tr>
<th>Metric</th>
<th>Number / Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Pre-Tests Completed</td>
<td>100</td>
</tr>
<tr>
<td>Number of Employees who scored less than 80%</td>
<td>18</td>
</tr>
<tr>
<td>Pre-Test Completion Rate</td>
<td>95%</td>
</tr>
<tr>
<td>Pre-Test Average Score</td>
<td>88%</td>
</tr>
<tr>
<td>Pre-Test Pass Rate</td>
<td>80%</td>
</tr>
</tbody>
</table>
Intervention
Plan

• Who – All medical assistants and technicians employed in UTM outpatient clinics

• What – Provide classroom training on the following topics:
  – Universal Precautions
  – Sterile Technique
  – Vital Signs
  – Point of Care Testing
  – Medication Administration
  – Medical Documentation / Training
Intervention Plan

• When – 2-3 hour sessions during April and May 2009

• How – Curriculum and exam developed by UTM RN Clinic Managers, Helena Crosby and presented by Alisha Chini, RN
Implementing the Change

Do

• Pre-test was distributed online and participants were asked to take the exam prior to their classroom and hands-on training.

• 12 sessions were held involving 76 Medical Assistants and 28 technicians.

• Post-test was administered immediately following the training session.
Implementing the Change

Do

• Participants not scoring 80% on the post-training exam were offered a second training session. 2/2 employees participated in remedial training and passed.

• A survey was sent to the clinic staff and providers to assess impact of the training.

• Total visit length in the Neurology clinic was assessed pre- and post-training.
# Results/Impact

## Check

### Clinical Post-Training Results

<table>
<thead>
<tr>
<th>Metric</th>
<th>Number / Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Post-Tests Completed</td>
<td>103</td>
</tr>
<tr>
<td>Number of Employees who scored less than 80%</td>
<td>18</td>
</tr>
<tr>
<td>Post-Test Completion Rate</td>
<td>94%</td>
</tr>
<tr>
<td>Post-Test Average Score</td>
<td>88%</td>
</tr>
<tr>
<td>Post-Test Pass Rate</td>
<td>82%</td>
</tr>
</tbody>
</table>
Histogram of (post - pre) test
(with 95% t-confidence interval for the mean)
Paired t-test and CI: post-test vs. pre-test scores

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>StDev</th>
<th>SE Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>post-test</td>
<td>95</td>
<td>0.874629</td>
<td>0.093502</td>
<td>0.009593</td>
</tr>
<tr>
<td>pre-test</td>
<td>95</td>
<td>0.860040</td>
<td>0.089717</td>
<td>0.009205</td>
</tr>
<tr>
<td>Difference</td>
<td>95</td>
<td><strong>0.014589</strong></td>
<td>0.116839</td>
<td>0.011987</td>
</tr>
</tbody>
</table>

95% lower bound for mean difference: -0.005324

_t-test of mean difference_ = 0 (vs > 0): _t-value_ = 1.22

_p-value_ = 0.113
Actual Visit Length - 30 min Appts (mins)

Individual Values

-150.0
-100.0
-50.0
0.0
50.0
100.0
150.0
200.0
250.0
300.0
350.0
400.0

UCL = 207.0
CL = 58.7
LCL = -89.6
<table>
<thead>
<tr>
<th></th>
<th>Number of Completed Surveys</th>
<th>62</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Learning Environment</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environment promoted learning</td>
<td></td>
<td>4.0</td>
</tr>
<tr>
<td>Environment encouraged instructor/student interaction</td>
<td></td>
<td>4.1</td>
</tr>
<tr>
<td>Environment supported question and answer time</td>
<td></td>
<td>4.1</td>
</tr>
<tr>
<td><strong>Instructor</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instructor was well prepared and knowledgeable</td>
<td></td>
<td>4.1</td>
</tr>
<tr>
<td>Instructor thoroughly explained training material</td>
<td></td>
<td>3.8</td>
</tr>
<tr>
<td>Instructor made the learning environment fun and educational</td>
<td></td>
<td>4.0</td>
</tr>
<tr>
<td>Answered questions clearly and concisely</td>
<td></td>
<td>4.1</td>
</tr>
<tr>
<td><strong>Course Material</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relevant to my daily work</td>
<td></td>
<td>3.6</td>
</tr>
<tr>
<td>Ease of applying material to daily work</td>
<td></td>
<td>3.8</td>
</tr>
<tr>
<td>Beneficial to my job growth</td>
<td></td>
<td>4.0</td>
</tr>
<tr>
<td>Increased my level of understanding</td>
<td></td>
<td>3.9</td>
</tr>
<tr>
<td>Questions were relevant to my job position</td>
<td></td>
<td>3.5</td>
</tr>
<tr>
<td>Material was clear and concise</td>
<td></td>
<td>3.9</td>
</tr>
<tr>
<td>Material was applicable to every day work environment</td>
<td></td>
<td>3.6</td>
</tr>
<tr>
<td><strong>Examination</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adequate time to complete examination</td>
<td></td>
<td>4.0</td>
</tr>
<tr>
<td>Level of difficulty</td>
<td></td>
<td>3.6</td>
</tr>
</tbody>
</table>

**Metric rated 4.0 or higher**

**Metric rated 3.9 or less**
## Provider Survey Results

<table>
<thead>
<tr>
<th>Provider Survey Item</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Surveys</td>
<td>70</td>
</tr>
<tr>
<td>Chart Completion</td>
<td>3.5</td>
</tr>
<tr>
<td>Exam Room Readiness</td>
<td>3.8</td>
</tr>
<tr>
<td>Messaging follow-up</td>
<td>3.6</td>
</tr>
<tr>
<td>Lab/test result follow-up</td>
<td>3.5</td>
</tr>
<tr>
<td>Medical Documentation</td>
<td>2.5</td>
</tr>
<tr>
<td>Medical Terminology</td>
<td>3.5</td>
</tr>
<tr>
<td>Safety Precautions</td>
<td>3.9</td>
</tr>
<tr>
<td>Medication Administration</td>
<td>3.8</td>
</tr>
<tr>
<td>Point of Care Testing</td>
<td>3.8</td>
</tr>
<tr>
<td>Vital Signs</td>
<td>3.9</td>
</tr>
<tr>
<td>Sterile Technique</td>
<td>4.0</td>
</tr>
</tbody>
</table>
Implementing the Change

Do

• Lessons Learned
  – Administer all examinations in person to avoid “open book” or “group” testing.
  – Increase duration of training and provide in no longer than 1-2 hour modules.
  – Provide more time for “hands on” training and assessments.
Expansion of Our Implementation

Act

• Emphasize “hands-on training” – especially for injection administration and casting

• Develop more “clinic-specific” training in conjunction with Clinic Managers and Medical Directors
  – Medications
  – Disease-specific “emergencies”
  – Procedures
Expansion of Our Implementation

Act

• Expand training to call center staff in order to further improve messaging and documentation and to develop emergency procedure workflow Visio diagram.

• Explore requirements for Medical Assistant certification and ensure that all employees retain active certification.

• Continue annual training on “the basics” with all pre and post-training examinations monitored.
Conclusions

• Competency training is critical to improve messaging, documentation, patient safety, clinic efficiency and patient / provider satisfaction.

• Improvements in competency following training could not be objectively documented. Reasons may include:
  – “Cheating” on pre-test
  – Poor curriculum / teaching techniques
  – Insufficient training period
  – Additional variables affecting visit times
What’s Next?

• Clinic-specific competency training with monitored pre- and post-training examinations
• Blue ribbon inspection December 2009 to evaluate issues / concerns of providers / staff which might be addressed with additional training.
• Customer service training
Potential Barriers

• Funding/protected time for Clinical Operations staff and Clinic Managers to develop and conduct training sessions.
• High staff turnover.
• Limited EPIC staff to provide EMR optimization and follow-up training.
• Limited feedback from faculty.
• Absence of teamwork/scheduled “reflection” times
QUESTIONS?