

Exploring Opportunities for Change and Improvement in Acute Care Physical Therapy: Lessons from the Science of Health Care Improvement

Exploring Opportunities for Change and Improvement in Acute Care Physical Therapy: Lessons from the Science of Health Care Improvement

Combined Section Meeting 2009
Las Vegas, NV February 9-12, 2009


Roya Ghazinouri, PT, DPT, MS
Yvonne A. Michaud, RN, MS
Daniel W. Ovitt, MS, PT
Melanie Parker, PT

Acute Care Physical Therapy Landscape: Where are we and Where are we going?




Department of Rehabilitation Services

Roya Ghazinouri, PT, DPT, MS
Clinical Supervisor, In-Patient Physical Therapy,
Department Of Rehabilitation Services,
Brigham & Women's Hospital,
Boston, MA
Clinical Instructor, Adjunct Faculty,
MGH Institute of Health Professions





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Outline

- Acute Care Practice
- Current state of healthcare
- Change in complex systems
- Quality care and quality improvement





Acute Care: What are the characteristics?

- Care delivery:
 - Patient-centered
 - Context of illness/setting
 - Multidisciplinary care model
- Fundamental elements :
 - Collaboration
 - Accountability
 - Health care as a process/system
 - Leading, following and making changes





Health Care Landscape: Challenges Facing Hospitals

- Rising demand/costs of care
 - 30% increase
- Growing workforce shortage
 - Vacancy rate:
 - PT: 13.8%; PTA: 12.0%
- Downward pressures on payment rates
- Transparency
 - Financial
 - Quality outcomes



Top Health Industry Issues in 2009



- Back to basics approach
 - Deliver value and service
 - Innovation (do more with less)
- Focus on performance
 - Process improvement
 - Preventing “never events”
 - Adequate staffing
- Preventive care



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Practice/Change in Complex Systems:

- Structure of physical therapy
 - variable in numbers/roles,
 - Different documentation/productivity/system/guidelines
- Process of Physical Therapy
 - Consult service
 - Integration of medical/ rehabilitation goals
 - Short length of stay/ Older patients
- Outcomes

Practice/Change in Complex System: Quality Improvement

- Work force focused
 - Staff development/retention
- Work process focused
 - Systems and processes
- Patient centered
 - Evidence based practice
- Commitment to quality care
 - Align with hospital matrix
 - Manage by facts and not intuition
 - Continuous process
- Committed leadership
 - Engage and empower

Science of Quality Improvement



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Definition: Quality

- Institute of Medicine (IOM):
 “Quality of care” is the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge.



Reports in Health Care Quality

- Publishing of IOM reports with specific recommendations to congress: To Err is Human, 1999; Crossing the Quality Chasm, 2001
- CMS & Joint Commission’s Public Reporting on Quality Measures on Internet, 2002
- IHI 100,000 Lives Campaign, December 2004
- CMS P4P4, forthcoming

Reports on Health Care Quality/IOM

- Level A: Experience of patient
- Level B: “Microsystems”, small units of care delivery
- Level C: organizations that house the small units
- Level D: environment of policy, payment, regulations, accreditations.....

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Health Care Quality/IOM

- Basic Principles:
 - Knowledge based care
 - Patient-centered care
 - System minded care
- Message:
 - Work is a process
 - Process is the main source of quality defect (not human error)
 - Understand variability

IOM Specific Aims for Quality in Healthcare:

- Healthcare should be:
 - **Safe**
 - **Effective**
 - Evidence based
 - Patient-centered
 - Seamless between levels of care
 - Respect and compassion
 - **Timely**
 - Without delay
 - **Efficient**
 - Done without waste(resources, time, people)
 - **Equitable**

10 Simple Rules

- Care is based on continuous healing relationships
- Care is customized according to patients' needs and values
- The patient is the source of control
- Knowledge is shared freely
- Decision making is based on evidence
- Safety is a system property
- Transparency is necessary
- Needs are anticipated
- Waste is continuously decreased
- Cooperation among clinicians is a priority

Quality Improvement

- A planned, systematic, reliable approach to monitoring, analysis and improvement of performance

Comparison of QA & QI

	QA	QI
Focus	Catch "Bad Apples" or Detect Serious Problems	Improve Processes – Not Fault Finding
Goal	Meet Minimal Standards	On-going Process Improvement
Who Is Involved	Usually 1-2 individuals in SNF	Teams
Driven By	Regulation Accreditation	Organization
When Occurs	Monthly or Quarterly	Continuous

Quality Improvement Is...

- The philosophy that employees want to do their best
- Focused on improving systems and processes
- Based on measurement, data, and facts
- Dependent on teamwork and participation by all
- Supported by the facility's culture, practices, and shared values

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Quality Improvement Dimensions

Empowerment	Clinical management strategies	Quality management strategies	Monitoring	communication
<ul style="list-style-type: none"> ○ Define responsibility ○ Skill development ○ Evaluation and feedback ○ Recognition 	<ul style="list-style-type: none"> ○ Tools 	<ul style="list-style-type: none"> ○ Models ○ Guiding principles ○ Methods 	<ul style="list-style-type: none"> ○ Data collection ○ Data analysis ○ Data reporting 	<ul style="list-style-type: none"> ○ Priorities ○ Actions ○ Results

- ### FOCUS
- Find a process that needs improvement
 - Organize a team knowledgeable about process
 - Clarify the knowledge about the process
 - Understand the causes of variations in the process
 - Select the improvement

Thank You
Roya Ghazinouri, PT, DPT, MS
 rghazinouri@partners.org
www.brighamandwomens.org/rehabilitationervices


Department of Rehabilitation Services



Division of Trauma, Burn, & Surgical Critical Care

Culture of Change


American Physical Therapy Association (APTA)
 Combined Section Meeting 2009
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Yvonne A. Michaud, RN, MS
 Trauma and Burn Program Manager
 Brigham & Women's Hospital, Boston, MA
ymichaud@partners.org

- ### Objectives
1. Review key components of change th
 2. Discuss strategies to accelerate the ch
 3. Describe two steps in cultivating your change project

Lewin's Change Theory




Basis of many approaches applied today

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Lewin's Change Theory

- **Unfreezing**, when the change agent is accepted, the necessity understood and accepted
- **Moving** toward the change or "cognitive redefinition".
- **Refreezing** occurs when change is adopted

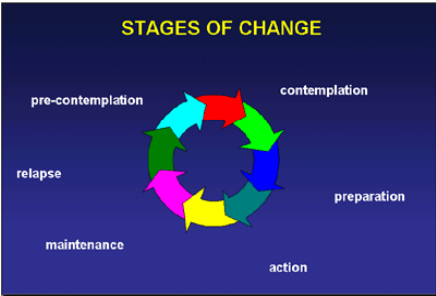


Stages of Change Model

- Prochaska and DiClemente model- developed more than 20 years ago
- Used in health care education
- Cycle of attitudes ranging from denial to solidly established commitment to change



Prochaska and Diclemente




STAGES OF CHANGE

pre-contemplation contemplation

relapse preparation


maintenance action




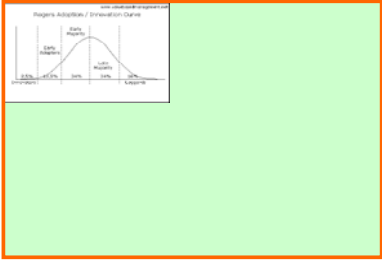
Rogers' Diffusion of Innovation

Most important elements effecting acceptance of new ideas:

1. Perception of value
2. Communication method of ideas
3. Sufficient time to understand, change attitudes, and make decision
4. Anticipating how people respond to change





Rogers' Diffusion of Innovations Model



Onion Patch

Lonely little petunia?

- Think big but stay close to your roots
- Select efforts within your control
- Be patient



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Take-Aways

- Identify your team early
- Communicate vividly
- Communicate regularly
- Strategies to “Hold the Gains”



Reorganization of In-Patient Physical Therapy Service: Service Based Care

Department of Rehabilitation Services





Daniel W. Ovitt, MS, PT
Lead Physical Therapist, Oncology Service,
In-Patient Physical Therapy,
Brigham & Women's Hospital, Boston, MA

CSM 2009
February 11, 2009
Las Vegas, Nevada



Dimensions of Quality

- Five Quality rights
 - The right care
 - For the right person
 - In the right place
 - At the right time
 - At the right price





Quality Improvement Is...

- The philosophy that employees want to do their best
- Focused on improving systems and processes
- Based on measurement, data, and facts
- Dependent on teamwork and participation by all
- Supported by the facility's culture, practices, and shared values





FOCUS

- **F**ind a process that needs improvement
- **O**rganize a team knowledgeable about the process
- **C**larify the knowledge about the process
- **U**nderstand the causes of variations in the process
- **S**elect the improvement



FOCUS

- **F**: physical therapy service delivery
- **O**: leadership, senior staff
- **C**: history of care delivery
- **U**: variations in response times, care
- **S**: redesign of structure of physical therapy in-patient service



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Applying Concepts of Quality to Delivery of Physical Therapy in Acute Care

- Quality design
 - Structure
 - Acute care in-patient physical therapy
 - Align organizational structure with hospital
 - Create a new staff role: "Lead Therapist"
 - Process
 - Case load management
 - Outcome
 - *Right* care at the *Right* time for the *Right* patient
 - Staff development, accountability
 - Interdisciplinary collaboration



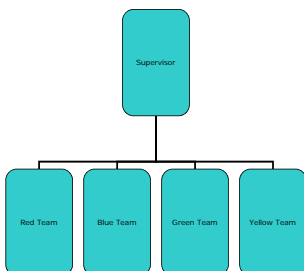
Structure:

- 747-bed acute care hospital/ academic teaching affiliate of Harvard Medical School.
 - Level I Trauma and Burn Care Center.
 - Comprehensive Cancer Center
 - Average Length of stay = 4.5 days



Structure:

- In-Patient rehabilitation department
 - Physical therapy
 - Leadership
 - Staffing
 - Staff level
 - Senior level
 - Clinical specialists
 - Roles and responsibilities
 - Occupational therapy

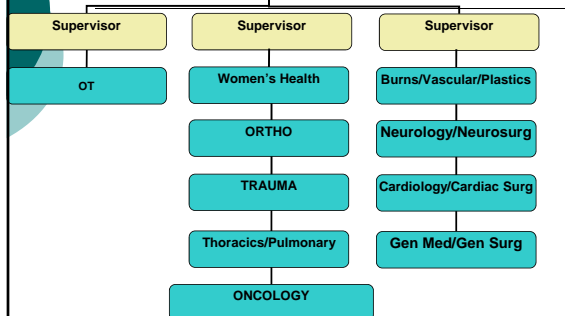


Structure: Improvement Plan

- Introduction of "Service Based Care"
 - Alignment of our practice with the hospital organizations' goals and service delivery model
 - Clustering of service lines into teams managed by "Lead Therapists"
 - Improved dissemination of information
 - Collaborative Supervision



Director



Process: Improvement Plan

- Transparency
- Staff driven
 - Program development
 - Staff mentoring/competencies
 - Standardizing care
 - Identify areas for improvement
- Resource allocation by leadership
 - Time
 - Space
 - "walk the talk"





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Process: Improvement Plan



- "Staff empowerment is achieved in a environment of interdependence and accountability."
- The goal is to create an environment consisting of mutual respect and unity within the staff and leadership.
- Every staff member should feel accountable for their individual efforts and expertise, taking professionalism to a new level.

Hayhurst,Chris. "Autonomous Practice Through Staff Empowerment". PT Magazine. Apr 2007.





Outcome: What was Improved?

- Efficiency and timeliness of care
- Interdisciplinary care
- Program development
- Staff clinical experience
- Staff retention
- Resource allocation



APTA Vision Statement for Physical Therapy 2020

...Guided by integrity, life-long learning, and a commitment to comprehensive and accessible health programs for all people, physical therapists and physical therapist assistants will render evidence-based services throughout the continuum of care and improve quality of life for society. They will provide culturally sensitive care distinguished by trust, respect, and an appreciation for individual differences. While fully availing themselves of new technologies, as well as basic and clinical research, physical therapists will continue to provide direct patient/client care. They will maintain active responsibility for the growth of the physical therapy profession and the health of the people it serves."



Thank You & Questions

Daniel W. Ovitt, MS, PT
dovitt@partners.org
www.brighamandwomens.org/rehabilitationservices



Department of Rehabilitation Services



Tools for Quality Improvement



Department of Rehabilitation Services

Roya Ghazinouri, PT, DPT, MS
Clinical Supervisor, In-Patient Physical Therapy,
Department Of Rehabilitation Services,
Brigham & Women's Hospital,
Boston, MA
Clinical Instructor, Adjunct Faculty,
MGH Institute of Health Professions





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Quality Care/Big Question


- How do we go from "the evidence that says this is the correct way to manage a patient' to "how can we make it happen consistently for each patient?"



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Outline


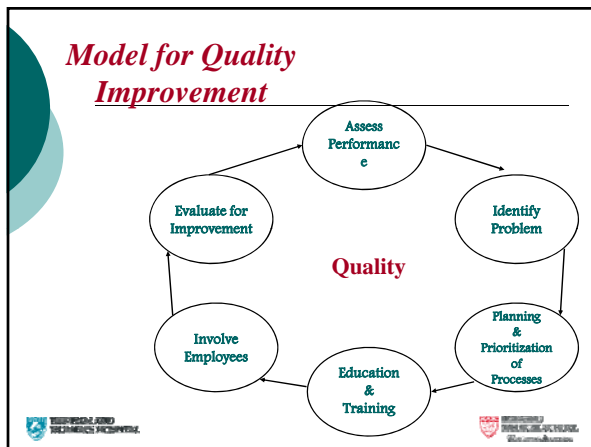
- Major improvement methodology
- Starting point for improvement projects
- Improvement tools
 - Plan-Do-Study-Act (PDSA)
 - Lean strategy
- Measuring quality



Dimensions of Quality


Pillars of healthcare quality

- Quality improvement**
(outcome management)
- Process improvement**
 - Quality assurance
 - Risk management
- Care management**
 - Utilization management
 - Safety and regulatory


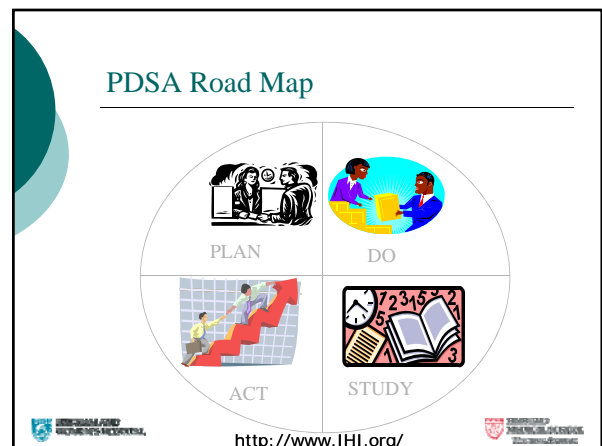
Key Steps: Starting a Quality Improvement Initiative

- Do background work
- Prioritize potential projects
- Prepare for the project
- Do an environmental scan
- Create a data collection system
- Create a data reporting system
- Change behavior
- Clarify expectations, responsibilities and accountability



Key Steps: Starting a Quality Improvement Initiative



- Well planned implementation process
- Sufficient resource allocation
- Checkpoints and deadlines
- Flexibility and autonomy to choose approach

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LEAN Method

- Driving out waste
- Looking at processes
 - Eliminating non-value added steps
 - Focusing on value





Lean Method: key Concept

- Leadership
- Culture
 - Interdisciplinary
 - Managers teach/enable
 - Seek ultimate performance
 - Root cause analysis
 - Rewards: groups
 - Share information
 - Customer focus
 - Process driven





Lean Method: Key Concepts

- Process
 - Available
 - Adequate
 - Valuable
 - Capable
 - Flexible
 - Linked to continuous flow



Lean Methodology



- 5S strategy:
 - Sort
 - What do we need? What can we remove?
 - Set in order
 - Better system, better organization, better work habits
 - Shine
 - Standardize
 - Document and communicate guidelines
 - Sustain



Measurement Guidelines



- Key measures should clarify the aim and make it tangible
 - Don't track too many process measures (vs outcomes)
 - Use sampling
 - Integrate measurement in daily routine
 - Plot data on measures over time
 - Visually display results

Successful measurement=successful improvement




What Should We Measure

- Outcome measures
 - Clinical outcomes
 - Impairment
 - Functional/QOL
 - Interdisciplinary care/ communication
 - Staff development/education
 - Hiring and retention rates
- Process measures
 - Patient flow/assignment/waiting lists
 - Organizational design
 - Referral response
 - Demand and resources





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Physical Therapy Following Trauma: Results from a Quality Improvement Program





Department of Rehabilitation Services

Melanie Parker, PT
 Senior Physical Therapist,
 Lead Physical Therapist, Trauma, Burns, Plastics Service
 In-Patient Physical Therapy Service
 Department Of Rehabilitation Services, Brigham & Women's Hospital
 CSM February 2009



Outline

- Creation of the Trauma Quality Improvement Initiative
- Improvement model
 - Plan-Do-Study-Act (PDSA)
- Results
- Lessons learned



Background

- BWH Trauma Service
- BWH Inpatient Physical Therapy Service
- Established care model

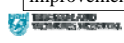

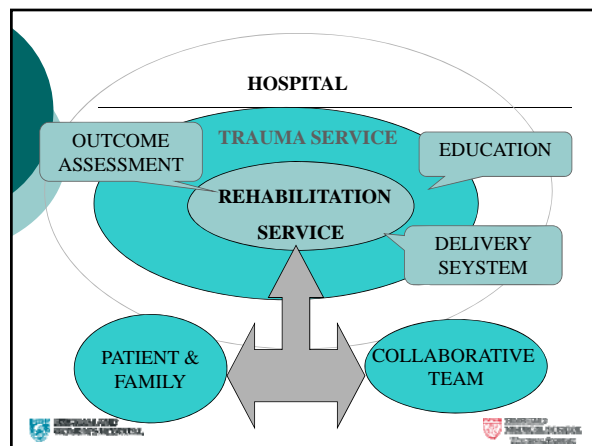
Bringing Evidence to Practice

- Pendleton et al. (2007) "Factors affecting length of stay after isolated femoral shaft fractures"
 - Patients seen by PT >1 day after surgery stayed an average of 1 day longer than patients seen by PT in 1 day or less.
- Chiang et al. (2006) "Effects of physical training on functional status in patients with prolonged mechanical ventilation"
 - Muscle strength improved significantly
 - Total BI and FIM scores increased significantly

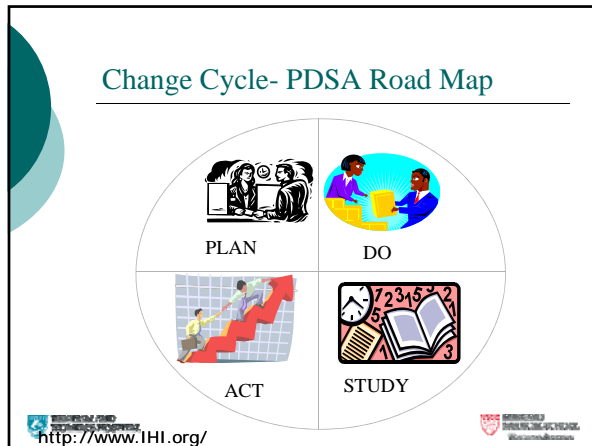



Improvement Model

What are we trying to accomplish?	➔	Aims: Integrate rehabilitation services into the interdisciplinary care model. Process improvement Standard of care
How will we know a change is improvement?	➔	Identify a measure to assess outcomes
What changes can we make that will result in improvements?	➔	Test changes and see if they are promising

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- ## Change Cycle- PDSA Road Map
- **PLAN**
 - Delivery system:
 - New order entry system
 - New departmental criteria for response to consults
 - **Within 24 hours of receiving consults**
 - Trauma team (physical and occupational therapists)
 - Education:
 - Hospital wide education and introduction of project
 - Departmental educational rounds
 - Emphasis on continuity of care
 - Outcome assessment:
 - Identification of an outcome measure tool

- ## Change Cycle- PDSA Road Map
- **DO**
 - From August-October 2006
 - Continuous monitoring of data and educational needs
 - **STUDY**
 - Data analysis
 - Ongoing re-evaluation
 - **ACT**
 - New referral response criteria
 - Expanded clinical practice

- ## Outcome Tool
- **Acute Care Index of Function (ACIF)**
 - Developed to standardize the assessment of functional status in patients with acute neurological impairment
 - Found to detect change in functional status in patients with lower extremity orthopedic problems
 - Established as a valid and reliable tool for patients with neurological deficit
- Roach KE, Van Dillen LR. Development of an acute care index of functional status for patients with neurologic impairment. *Phys Ther.* 1988; 68: 1102-1108.

DEMOGRAPHICS

Variable	Prospective (N=96)	Retrospective (N=67)
Age	Mean: 49.15 (SD 20.9)	Mean: 46.85 (SD 20.4)
Gender	F=22 (23%) M=74 (77%)	F= 24 (36%) M= 43 (64%)
Race	White= 71 (74%) Other= 25 (26%)	White= 49 (73%) Other= 18 (27%)


DEMOGRAPHICS

Variable	Prospective (N=96)	Retrospective (N=67)
ISS	11.94	14.67
GCS	12.79	13.56
LOS	8.02	9.45

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QUESTIONS


- How many patients were evaluated within 24 hours of admission
 - **Prospective data:**
 - 80 patients
- What was the difference between evaluation time in the prospective and retrospective data?
 - **Prospective :**
 - 2.19 days from admission
 - **Retrospective:**
 - 4.23 days from admission



Question


Who was appropriate for an early evaluation and who was not?

Variable	Within 24 hours	Greater than 24 hours
GCS	12.91	12.08
ISS	10.96	16.81* (p=0.0041)
Age	48.51	52.31
LOS	7.49	10.69




QUESTION

- What were the reasons for delayed evaluation by physical therapy?
 - Patients in OR/other procedures
 - Hemodynamically unstable
 - Rule out tests




Questions

- What is the frequency of physical therapy interventions and each therapeutic approach?
 - Prospective: Mean 4.5 days
 - Retrospective: Mean 3.3 days
- Frequency of type of interventions:
 - 57% therapeutic exercise
 - 63% Bed mobility
 - 58.7% transfer training
 - 43% gait training
 - 15% pulmonary therapy
 - 68.9% patient and family education
 - 19% splinting




Questions

- Does ACIF show change over time for patient outcomes?
 - At initial evaluation:
 - Mean ACIF score: 44.93
 - At discharge
 - Mean ACIF score: 65.01 * (p < 0.0001)
- What was the ACIF score of patients going home versus those going to rehab?
 - Home discharge:
 - Mean: 85.73
 - Rehab discharge:
 - Mean: 41.69



Discharge destination

	Chronic care	Home	Home with SVC	Jail	Morgue	NH/ SNF	Psych hosp.	Rehab
Pros	0	40 (41.6%)	19 (19.8%)	2 (2.1%)	1 (1%)	0	0	34 (35.4%)
Retro	1 (1.5%)	22 (32.8%)	17 (25.3%)	0	1 (1.5%)	2 (3%)	1 (1.5%)	23 (34.3%)



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Lessons learned

- **Process improvement**
 - Streamlining of consult
- **Quality care**
 - Early involvement of physical therapy was beneficial
 - Referral response criteria will be within 24 hours of admission
 - More frequent therapy was possible
- **Functional outcome assessment**
 - Use of the ACIF to assess change over time
- **Interdisciplinary collaboration & education**
 - Involvement in multidisciplinary rounds
 - Visibility of the role of physical therapy
 - Education of our own staff



Challenges along the way...

- Staff support
- Use of the order set
- Educational deficiencies
- Amount of data collected
- Data analysis
- Resource allocation



Catalysts for Success

- Sufficient planning
- Support from leadership
- Committed individuals
- Teamwork



Steps that Followed

- Continued PDSA cycle for adherence to improvement initiative
- Continued data collection on ACIF
- Evaluation of our interventions and assessment of the need to expand or improve our care
 - *Continued use of evidence for patient management*
- Development of other rehabilitation programs for patients following trauma:
 - *Mild TBI Program*



Thank You & Questions

Melanie Parker, PT

Email: mparker4@partners.org

www.brighamandwomens.org/rehabilitation-services



Department of Rehabilitation Services



Division of Trauma, Burn, & Surgical Critical Care

Tools for Assessing Outcome

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Yvonne A. Michaud, RN, MS
Trauma and Burn Program Manager
Brigham & Women's Hospital, Boston, MA
ymichaud@partners.org



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Other useful examples

- Solucient 100 Top Hospitals
 - <http://www.100tophospitals.com/>
- University Health Consortium
 - <http://www.uhc.edu/>
- National Trauma Databank
 - <http://www.facs.org/trauma/ntdb.html>
- National Burn Repository
 - <http://www.ameriburn.org/>





Data Can Help

- Powerful problem-solving tool
- Helpful in avoiding pitfalls
- Drills down understanding to a deeper level:
 - Process
 - Service
 - Product
- Efficient





Core Epidemiology Principles

- Study of how disease is distributed in populations.
- What factors influence or determine the distribution?
- Why does a disease develop in some and not others?
- Disease and illness is not randomly distributed.





Brigham and Women's Hospital Trauma Registry

- Established in 1991
- Nearly 21,000 cases
- Key members:
 - Medical director
 - Program manager
 - Data coordinator
 - Data abstractor
 - Partners in care
- Inclusion and exclusion criteria
- Sustainability





Data Elements

- Demographics
- Injury Events
- Phases of Care
- Surgeries and Procedures
- Disposition
- Outcomes



Core for Consistency




- Data dictionary
- Data validation
- Inter-rater reliability
- Forms to keep data collection and entry efficient
- Smaller is better



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How Will You Build It?

- Gather your team
- Interdisciplinary approach
- Creative Thinking models:
 - Concept Mapping
 - Twenty Questions
- Establish a realistic timeline





Why Concept Map?

- Enhances internalization of knowledge using multiple senses
- Allows one to experience connections or visualize inter-relationships
- Assists in the organization of information: “chunking”



Why Concept Map?



- Illustrates simple to complex concepts
- Creative and innovative thinking
- Promotes critical thinking



The 7 *Right* Question...



1. What do I look for?
2. What did I find?
3. What is most important?
4. What are the connections or relationships?
5. What outcomes do I want related to each diagnosis?
6. What interventions do I use?
7. Was my outcome met?

Glendon & Ulrich, (2004). Dear Mapped Out, *Nurse Educator*, 29(5), 178. See Figure 1.





Guide sheet

- Unlined paper
- Print
- Be creative
- Keep the flow of ideas going
- Write down everything you and your group comes up with; No criticism or editing

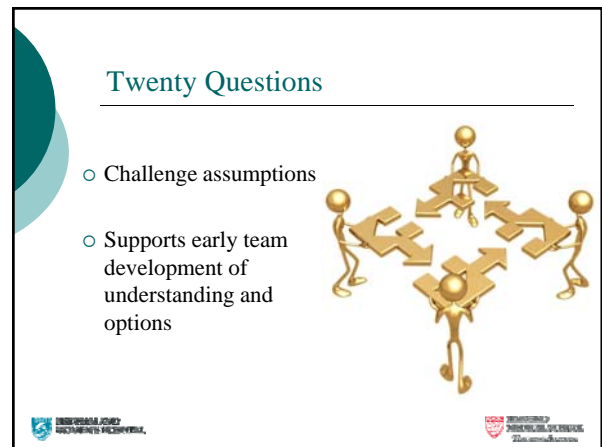
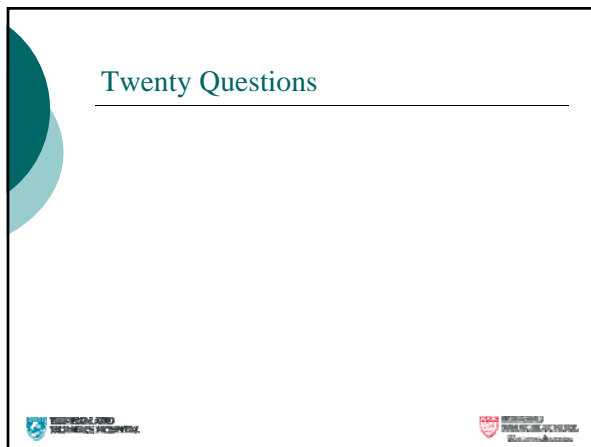
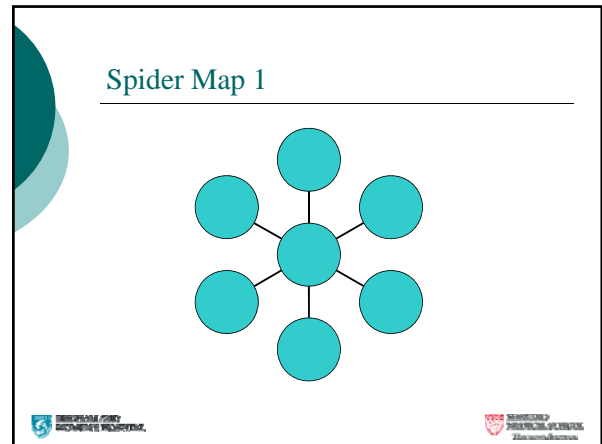
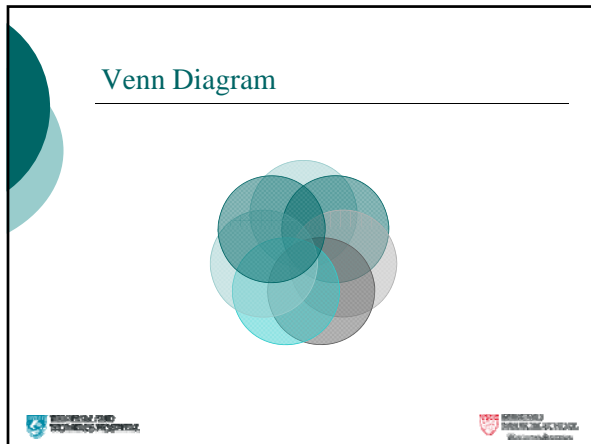


Guide sheet...

- Use colored markers/pencils
- Identify the most **general concepts** first; place @ the **top** of the map
- Identify the more **specific concepts**; place **below** the general concepts

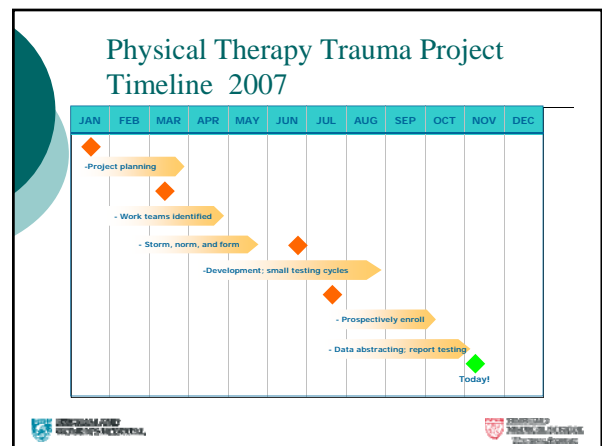


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Twenty Questions


	What	Where	When	Who	How
Current Method	What happens?	Where is it done?	When is it done?	Who does it?	Why is it done?
Reason	Why do it?	Why do it there?	Why do it then?	Why do it them?	Why do it this way?
Better Way?	Can we do some thing else	Can we do it some where else?	Can we do it some other time?	Can some body else do it?	Can we do it some other way?



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Does it fit into the budget?

Startup cost
Maintenance
Wiggle room



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Summary

- Reflected on the delivery of care using the scientific process.
- Reviewed key concepts of database construction.
- Applied two techniques to ensure success.

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