University of Michigan
Industrial and Operations Engineering 481
Special Projects in Hospital Systems
Project Proposal Outline
“Cost/Quality” of Care Analysis

DRAFT

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Cost/Quality of Care Analysis

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II. INTRODUCTION AND BACKGROUND

A. Description of Project – “Cost/Quality of Care Analysis”
Manipulate health care data in either a UHMS or another database with the goal of producing reports that help identify opportunities to improve the cost and quality of care at UMHS hospitals.

B. Background
There are two “problems” under "Cost/Quality of Care Analysis"
1. Merging the TQ (Transition for Quality) and TSI (Transitions Systems Inc.) databases to better understand patient delays and their relation to costs. Inherent problems involve capturing, recording, and entering data into database.
2. Improving process flow of department reports in order to create more time for analysis. Reports are rushed, leaving little time for analysis.

III. PROJECT PLAN

A. Involved and affected departments, operating entities, and/or parties –
1. University of Michigan Hospitals and Health Centers
2. University Of Michigan Hospitals, Management Systems - Program and Operations Analysis
3. Office of Clinical Affairs – Clinical Information and Decision Support Services
4. Practice Management
5. University Of Michigan College of Engineering, Industrial and Operations Engineering Department, course IOE 481 – Special Projects in Hospital Systems

B. Key issues and/or alternatives affecting project
1. Scope of project
2. Role of project team

C. Scope of project
1. Broad Objectives
   • Learn and document the data in TQ
   • Integrate data from TQ with TSI
   • Running reports, analysis – produce and design reports
• Evaluation of quality of data in database

2. Specific Objectives for IOE 481 Project Team (Proposed)
   PRIMARY:
   • Accuracy of data - Audit TQ database to validate data coding for one or two DRG (e.g. 105 or 106)
   • Process - Document and validate process flow to evaluate accuracy and consistency of capturing, recording, and entering of data

SECONDARY:
   • Provide solutions for data process improvement and greater data accuracy
   • Analyze cost and quality impact of patient delays
   • Improve cost and quality associated with patient delays

D. Approach
1. Key Steps (Based on project proposed by Roy More during January 27 meeting)
   • Meet with all parties involved (OCA-CIDDS, Practice Management, Case Managers, etc.)
   • Choose one DRG to focus on.
   • Audit data capture - Outline the process of this DRG with and without delays.
   • Define what a delay is and interview case managers to determine whether or not the definition is consistent among all case managers (Consistent capture of data).
   • Document the system and validate vs. standard procedures
   • Use patient records to develop time lines and see where delays occur.
   • Validate capture and coding of data.
   • Validate accuracy of data (type and magnitude).
   • Evaluate information and determine possible process changes or look for ways to eliminate or minimize delays.
   • Analyze economic impact of patient delays
   • Develop solutions to improve cost and quality associated with patient delays

2. Proposed methodology
   • Database management and information processing techniques
   • Flowcharting
   • Random sampling observation
   • Statistical and economic analysis
E. Expected impact and/or outcomes

1. Identification of problems/bottlenecks in capturing, recording, entering data, which will lead to solutions to these problems and an create accurate, consistent data process
2. Improved analyzability of data, which will allow greater cost and quality improvements

III. PROJECT TEAM AND EXPERIENCE

Names of Program and Operations Analysis staff and their roles:

- Client Manager: Vinita Bahl, DMD, Clinical Director, who is responsible for maintaining coordination with the corporate officers and relating the particular project to the overall corporate goals and priorities.

- Project Coordinator: Roy More, Senior Management Systems Coordinator, who is responsible for client relations and the day-to-day coordination and direction of the project and the student project team.

- Project Directors/Staff: Brian Ebarvia, Christopher Gralewski, Pai-Ake Jomket, Program and Operations Analysts, who are responsible for successful completion of the project and also to perform the following functions:

  1. Maintain regular coordination with the clients, managers, and physicians in the related department or operating entities.
  2. Schedule project activities and staff to accomplish the project.
     - Direct and control project activities.
     - Review performance of all staff on the project.
     - Report and present the findings, conclusions, and recommendations of the project in a manner suitable to the audience.
  3. Keep the clients and Program and Operations Analysis director informed of project activities, status, problems, and need for assistance.

Related Experience of project team members (IOE courses taken relevant to project):

IOE 310 (Optimization)   IOE 477 (Facilities Layout)
IOE 315 (Probability)   IOE 449 (Material Handling)
IOE 365 (Statistical Analysis)   IOE 451 (Engineering Economics)
IOE 322 (Project Management)   IOE 460 (Decision Analysis)
IOE 373 (Information Processing)   IOE 466 (Statistical Process Control)
IOE 421 (Work Organizations)   IOE 474 (Simulation)
IOE 441 (Production and Inventory Control)
IV. SUPPORT REQUIRED FROM OPERATING ENTITIES

A. Names, positions, and roles of staff from operating entities involved with project:

- Ellen Bunting, MA, Clinical Date Analyst, who is providing information about TQ (Transition for Quality) and TSI (Transition Systems Incorporated), and assisting the project team with access to the actual database.
- Heather.....?

B. Types of support they will provide for project:

1. Providing access to TQ (Transition for Quality) database and patient’s information.
2. Providing the delay, especially DRG 105/106, information and summary.
3. Clarifying definitions of some terminologies used in Office of Clinical Affairs.
4. Evaluating the project team’s performance.

V. BUDGET AND SCHEDULE

A. Available Times of Each Group Member

Brian Ebarvia
Monday: 10:45-1:00 PM
Tuesday: 10:30-1:00 PM
Wednesday: 12:00-3:30 PM
Thursday: Not Available
Friday: 10:45-12:00 PM (up to 3:00 PM if necessary)

Christopher Gralewski
Monday: Before 12:00 PM
Tuesday: 11:00-12:30 PM
Wednesday: Before 12:00 PM and after 4:30 PM
Thursday: 11:00-4:00 PM
Friday: Anytime

Pai-Ake Joe Jonket
Monday: Before 1:00 PM
Tuesday: Before 10:00 AM and after 3:20 PM
Wednesday: Before 11:00 AM
Thursday: Before 10:00 AM and after 3:20 PM
Friday: Anytime
B. Project Schedule

1. Project initiation (Friday January 22, 1999)
2. Reviews and progress meetings (Weekly meetings w/ coordinator Roy More on Wednesdays at 11:00 AM scheduled through February 24, 1999 — Meetings with Vinita Bahl weekly or as needed)
3. Proposal outlines and Gantt schedules (Monday February 1, 1999)
4. Project proposal draft for Roy More (Wednesday February 3, 1999)
5. Project proposal (Monday February 8, 1999)
6. Progress/interim reports (Monday March 8, 1999)
7. Draft of final project report (Monday April 12, 1999)
8. Project completion (Monday April 19, 1999)

C. Project Steps (Based on project proposed by Roy More during January 27 meeting)

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5. Document the system and validate vs. standard procedures
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7. Validate capture and coding of data.
8. Validate accuracy of data (type and magnitude).
9. Evaluate information and determine possible process changes or look for ways to eliminate or minimize delays.
10. Analyze economic impact of patient delays
11. Develop solutions to improve cost and quality associated with patient delays