



Workflow Mapping to Drive Idealized Processes

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Objectives

- Describe the purpose and benefits of:
 - Workflows
 - Spaghetti diagrams
- Identify a workflow/spaghetti diagram application that could directly impact efficiency in your organization.



Introduction

- WellSpan Health is an integrated health system serving the greater Adams-York County region. As a community-based, not-for-profit organization, WellSpan is dedicated to improving the health and well-being of the people it serves.
- One of WellSpan's broader initiatives is to expand post-acute and orthopedic services
 - Wellspan will enter the Acute Inpatient Rehabilitation market with the construction of the 73 bed WellSpan Surgery and Rehabilitation Hospital to be completed in early 2012.

The WellSpan Surgery & Rehabilitation Hospital

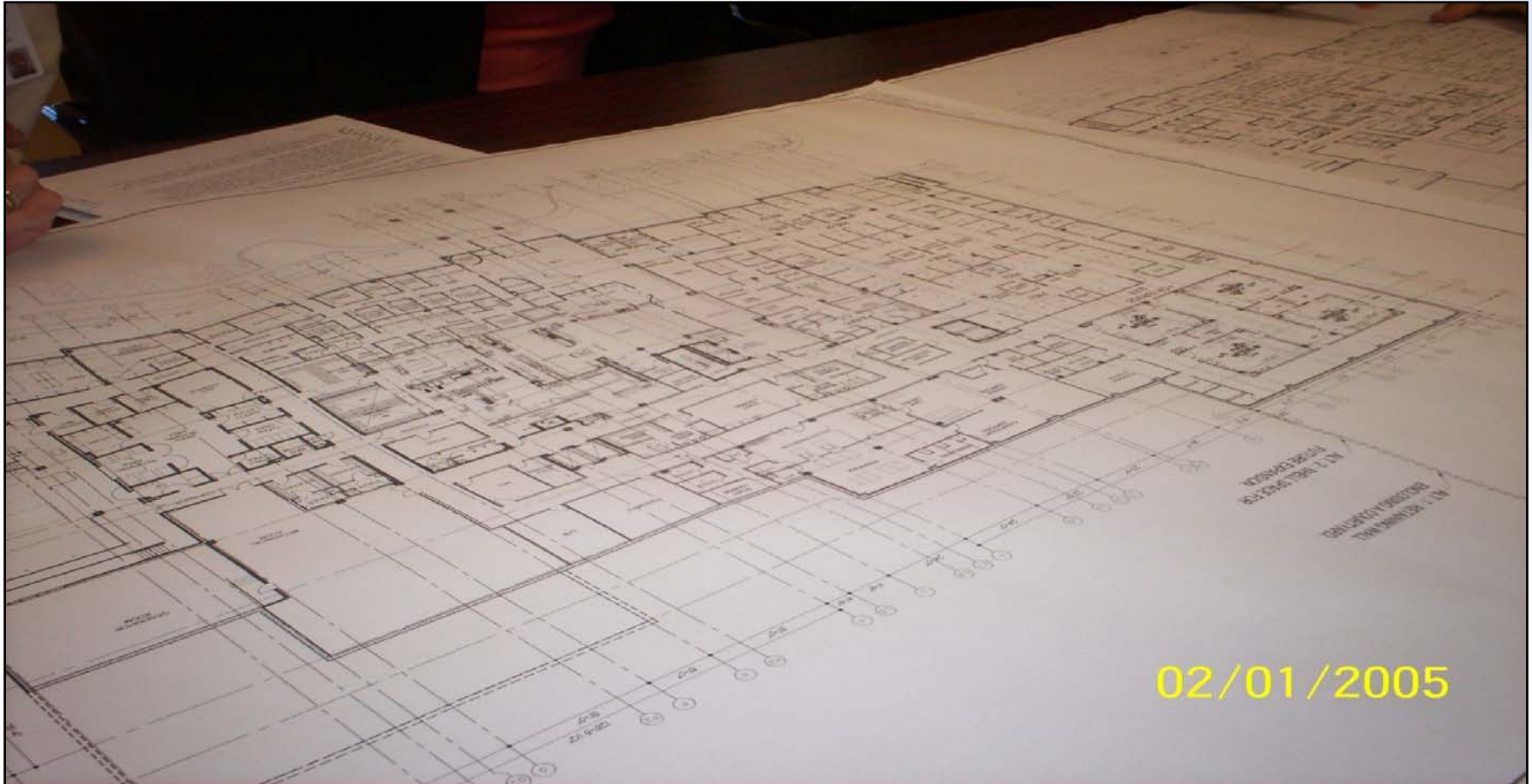
Opening in early 2012



- 40 general rehabilitation beds
- 8 bed secured brain injury unit
- 25 post surgical inpatient beds
- 3 observation beds
- 146,000 square feet



Building a State of the Art Hospital Utilizing Evidence Based Design Concepts



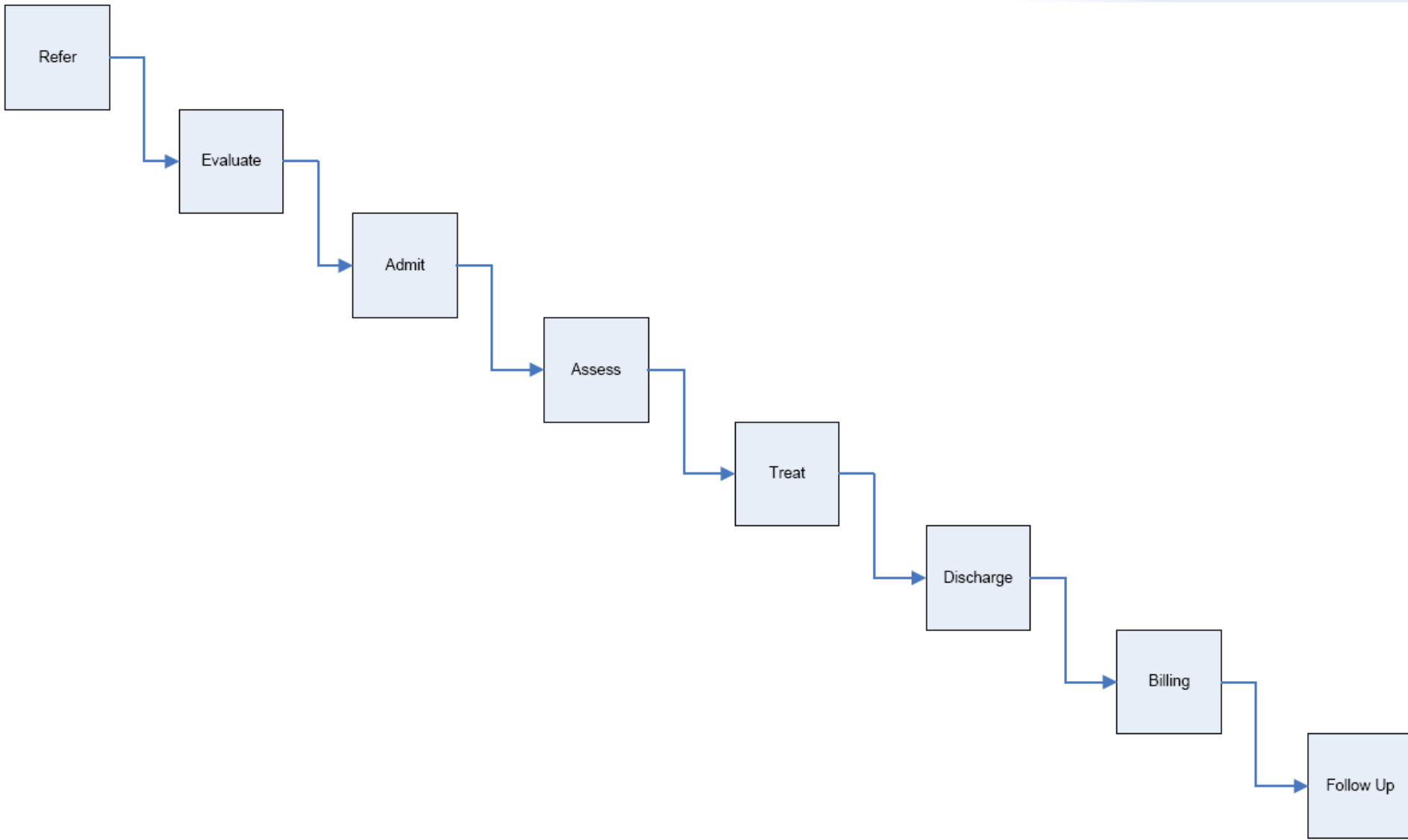
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What is a Workflow?

- High-level Processes – shows how the process components fit together (e.g., the department road map)
- Swimlanes – a role-based, visual timeline of a process which helps clinicians visualize their part in the process
- Information Flows – documenting what information is used today (paper forms, equipment, interfaces, etc.), what information is created (paper documents, interfaces, etc.), as well as by whom and when

High Level Workflow





Patient	
Nursing	
Therapy	
Physician	
Information	

Workflow Design

- Workflows are documented to reflect the “ideal” state to include:
 - Best Practice Implementation
 - “Paper-Light” / Electronic Processes / IT Systems
 - Use of Unified Communications among all staff members
 - Patient Centered Processes
 - Interdisciplinary Handoffs
 - Red Rules
 - Patient Education
 - Use of Safety Reporting System
 - CPOE – Computer Provider Order Entry
 - Questions Regarding Current State Processes

Patient

RN

Physician

Information



Unified Communications System

Can the Nurse and Physician document together so that information populates into both forms?



Cerner Millennium

Why Document Workflows?



- *Classify* Roles, Processes and Information
- *Validate* with front-line staff
- *Identify* problems and opportunities with current state
- *Design* and document To-Be state without initial constraint
- *Prepare* staff- coordinate with IT education and distribution of process documentation
- *Utilize* Lean tools to optimize processes
 - Value added
 - Time and resource allocation



Lessons Learned

- Take an in-depth look at current processes
- Be willing to change
- Document completely
- Workflow ideal process without constraints (initially)
- Present to staff for additional feedback
- Utilize information technology where appropriate
- Utilize basic lean principles
- Finalize workflow
- Build and Test



Workflow Uses

- Visual method for completing orientation
- Adjunct to policies and procedures
- Helps to identify necessary competencies and training
- Building block of founding culture and displaying visually how the team can better work together
- Education
- Identify needs for IT support



Lean Thinking

- “Lean is about one thing: doing more of what matters by eliminating what doesn’t.” – Matthew May, *The Elegant Solution*

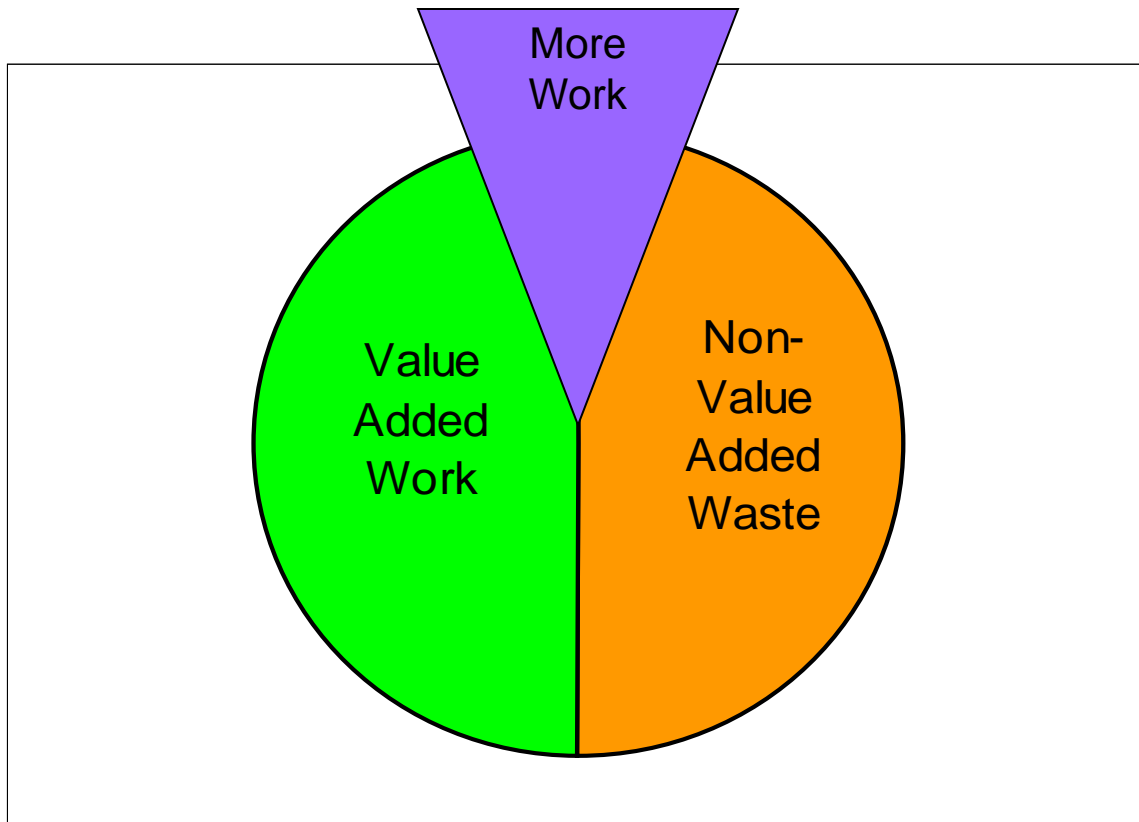


8 Forms of Waste

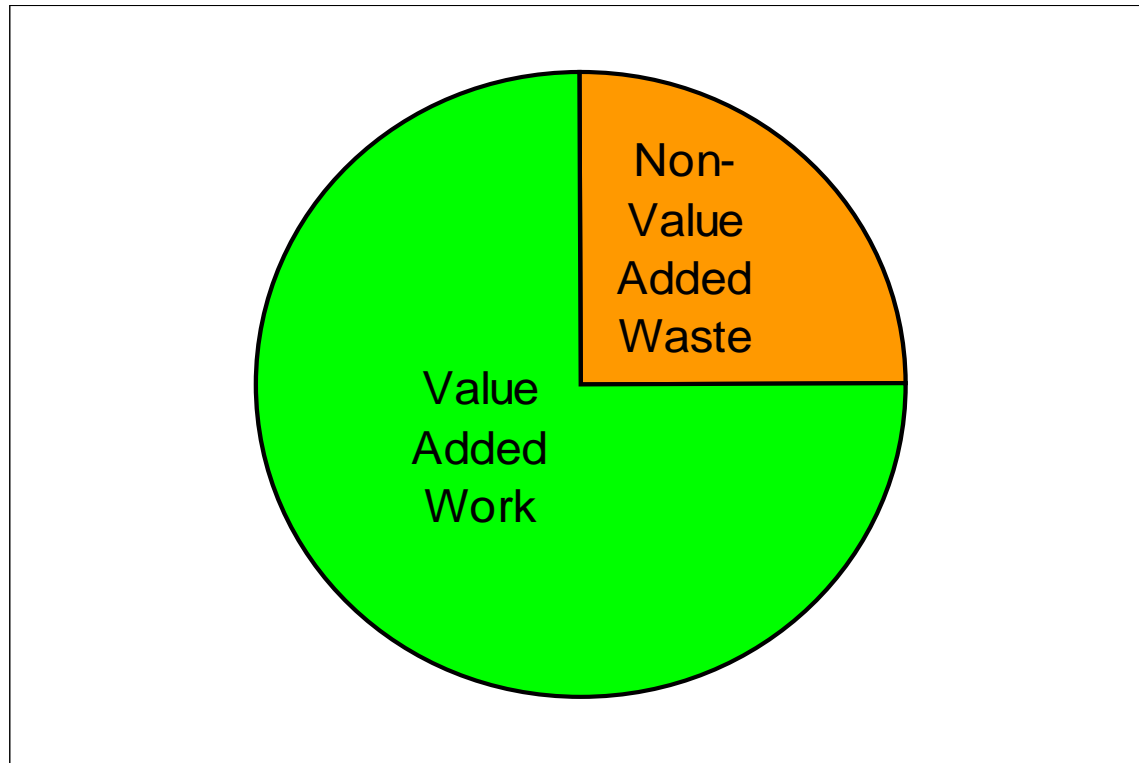
- **Defects**
- **Overproduction**
- **Waiting**
- **Not Utilizing Employee Knowledge**
- **Transport**
- **Inventory**
- **Motion**
- **Extra Processing**

Forms of Waste	Definition	Examples	Causes	Why is it Waste?
Defects	Work that contains errors or lacks value	Medication errors Rework Variable outcomes Incorrect billing	Out of control/incapable processes Lack of skill and/or training	Adds cost Reduces customer confidence Interrupts the schedule Consumes resources
Overproduction	Redundant work	Duplicate charting Multiple forms with same information	Poor communication between depts No clear specification of who needs what Lack of customer focus	Costs money Creates inventory Consumes resource ahead of plan Hides inventory/defect problem
Waiting	Idle time created when information, people, equipment, or materials are not at hand	Patients waiting for appointments/care Waiting for other workers	Poor accountability delivering on time Compounding delays Poor understanding of time required to perform a task	Stop/start production Poor workflow continuity Causes bottlenecks Long lead times
Not Utilizing Employee Knowledge	Not sharing best practices, not engaging the process experts	Fixing the same problem over, and over again	Lack of communication No outlet to discuss ideas	Reduces employee morale Benefits of sharing best practices not seen Contributes to the other wastes
Transportation	Unnecessary movement between processes	Leaving exam room for supplies Moving patient to receive services	Poor value stream flow Sharing of equipment Complex flows Badly designed process	Poor communication Consumes resources Increases production time
Inventory	More materials on hand than are required to do the work	Overstocked - supplies - vaccines - forms	Supply/demand not well understood Personal preferences catered, duplicated Inaccurate forecasting Large batching	Adds cost Extra storage space required Hides shortages & defects Shelf life expires
Motion	Movement of people that does not add value	Looking for: - information - materials - people	No standard operating procedure Inadequate training Scheduling that creates workarounds Poor housekeeping	Interrupts flow Increases production time
Extra Processing	Activities that do not add value from the patient/customer perspective	Clarifying orders Redundant information gathering	Attitude "Always done like this" Multiple/complex forms Work area doesn't promote flow Complex flow	It's work above and beyond specification Consumes resources Increases production time

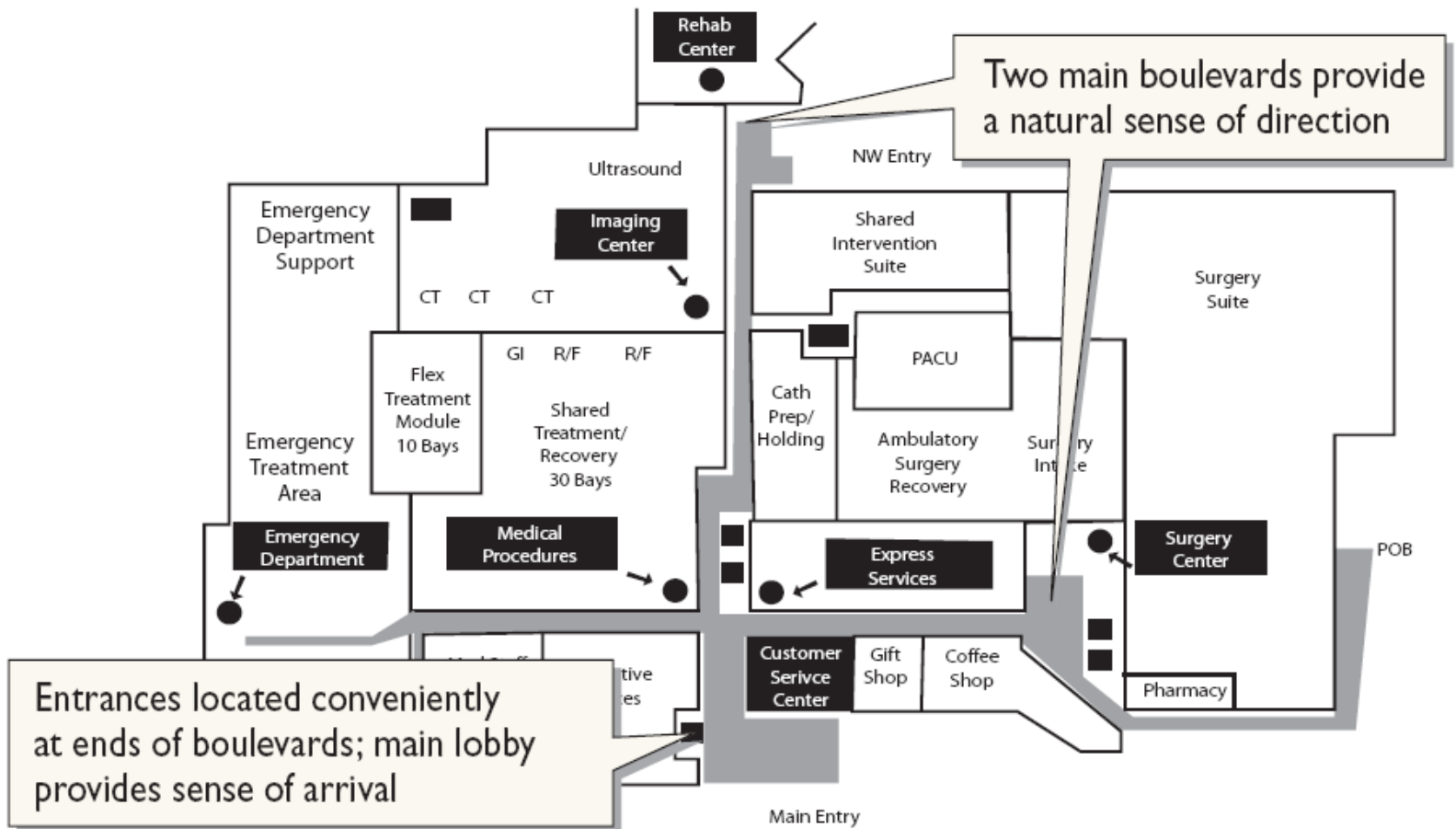
Traditional Thinking



Lean Thinking

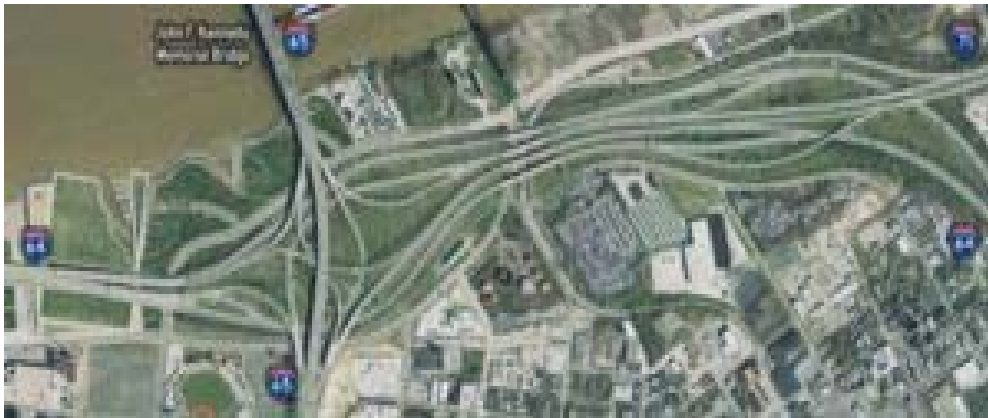


Building Layout & Proximity of Services



Spaghetti Diagrams

- Another way of mapping the current and improved state of a process.
- Show the movement of people, material, or transactions in a process.
- Make visible the work flow and facilitate questions on why things are where they are.



Spaghetti Diagrams



- Steps for Completion of a Spaghetti Diagram
 - Sketch or Obtain a layout of the area being observed.
 - As the Patient or Staff moves, draw lines to all the locations they go to.
 - Record the start and stop time during the process observation.
 - Sum the number of feet walked during the observation
- Rule of thumb: One step equals about 3 feet or one second of time.
- Begin asking the question “why?”

Spaghetti Diagram: Example

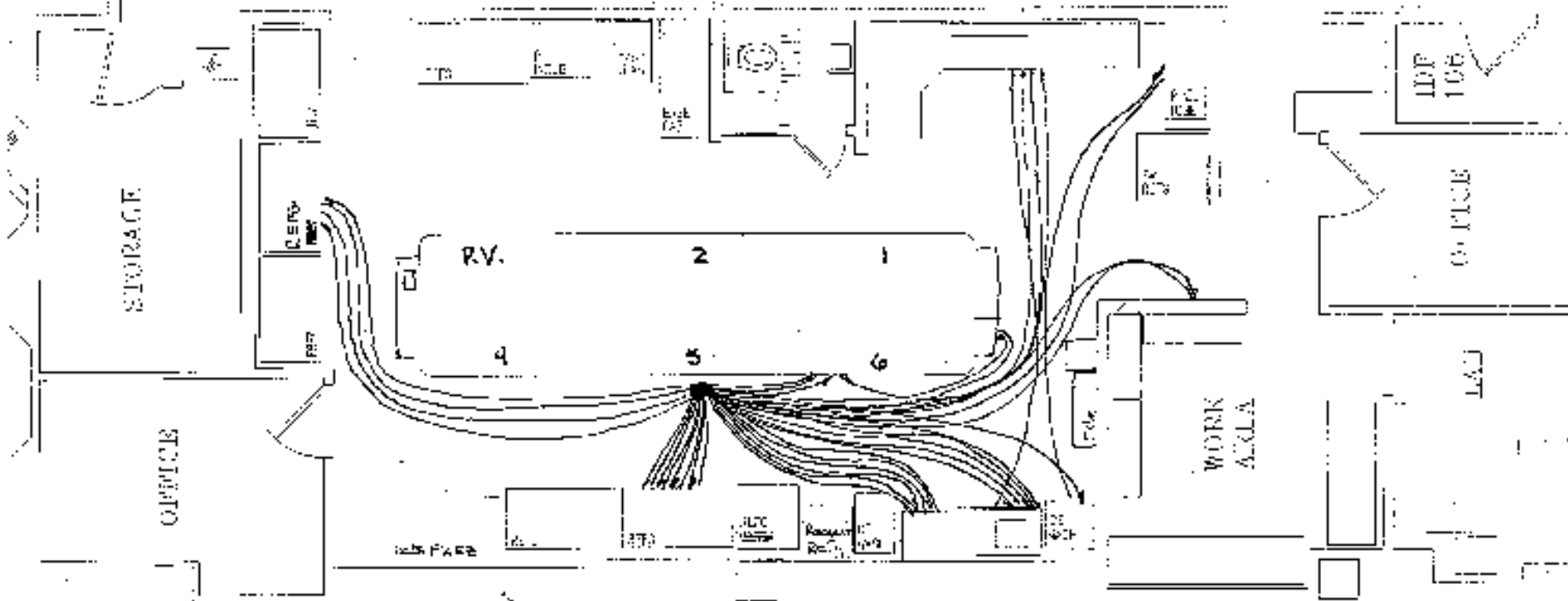


BEFORE

Blood Bank - Spaghetti Diagram

Process Name: Manual St. - Test spec. & Test spec. for cross match
Work St. Number: #5
Date: 10/13/09 - 2nd shift

Total Estimated
Distance Travelled: 576'
≈ 40min. observed time



Basic Process Steps

1 - Get specimen

2 - Get blood out of fridge & scan it

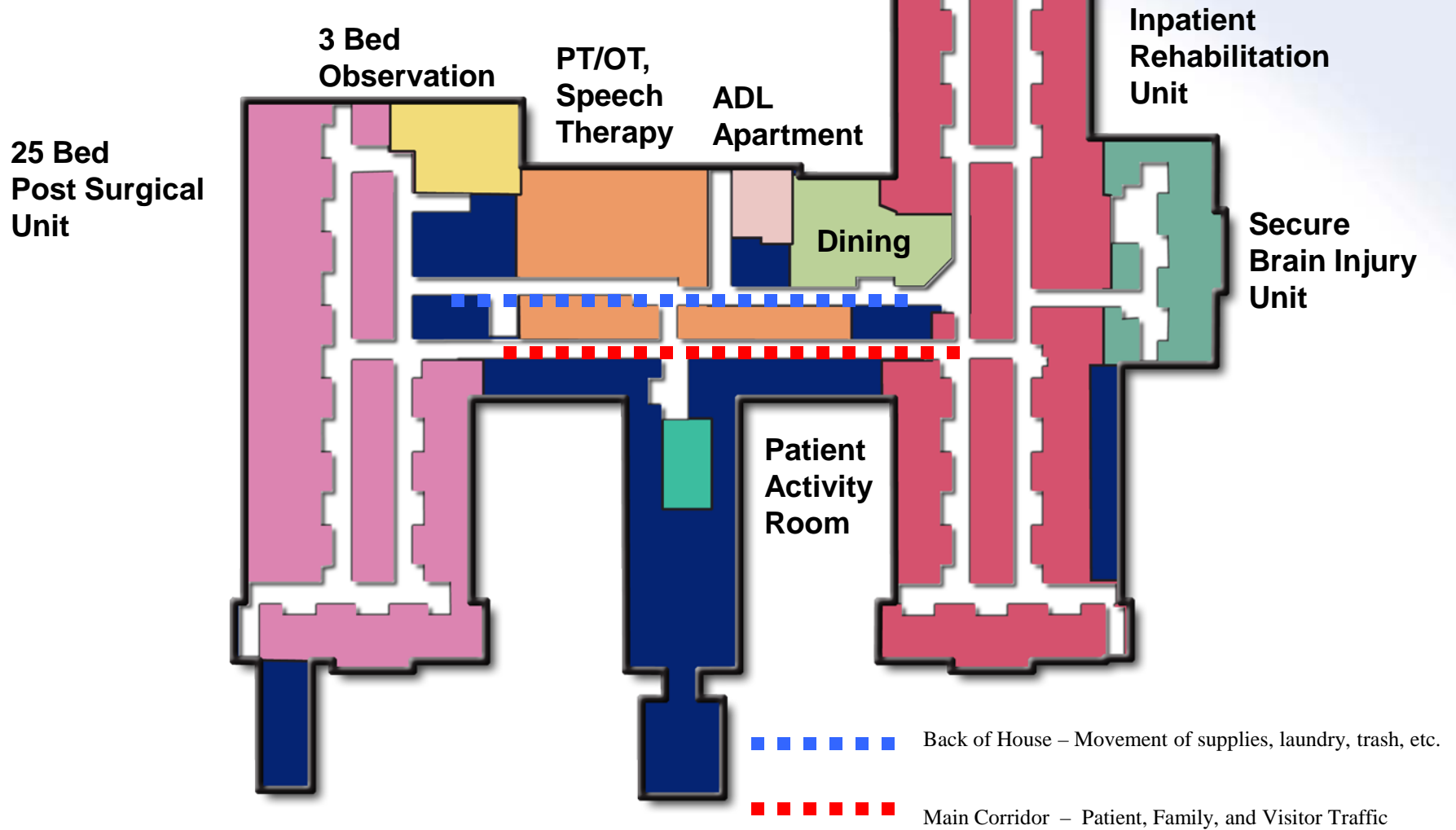
Life Sized Spaghetti Diagrams

An Opportunity to Call out Bottlenecks





WSRH Second Floor



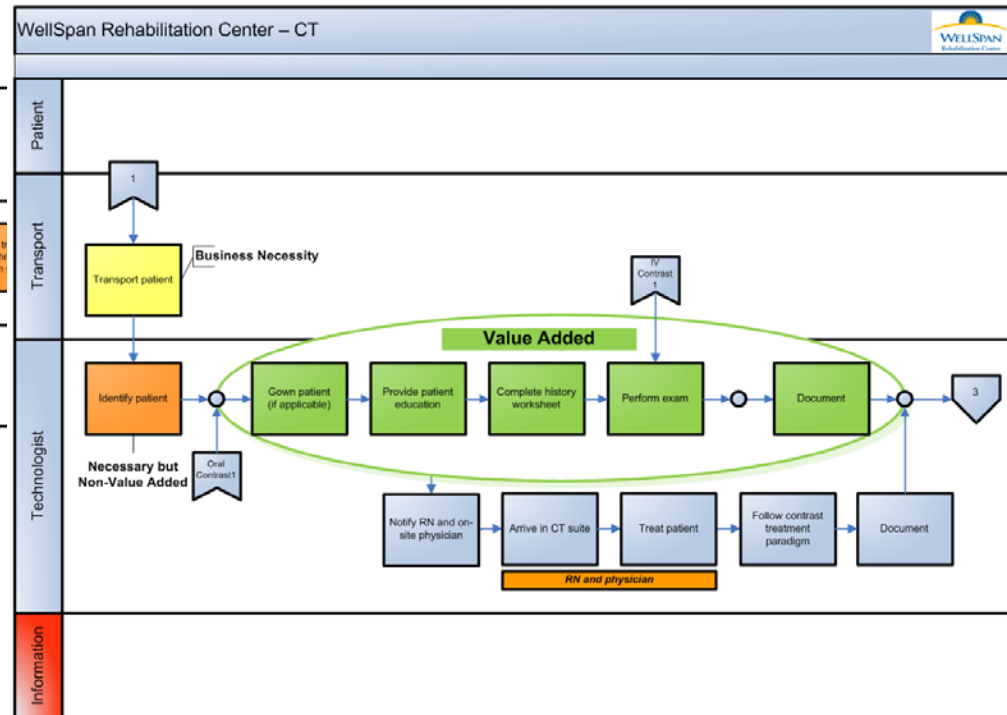
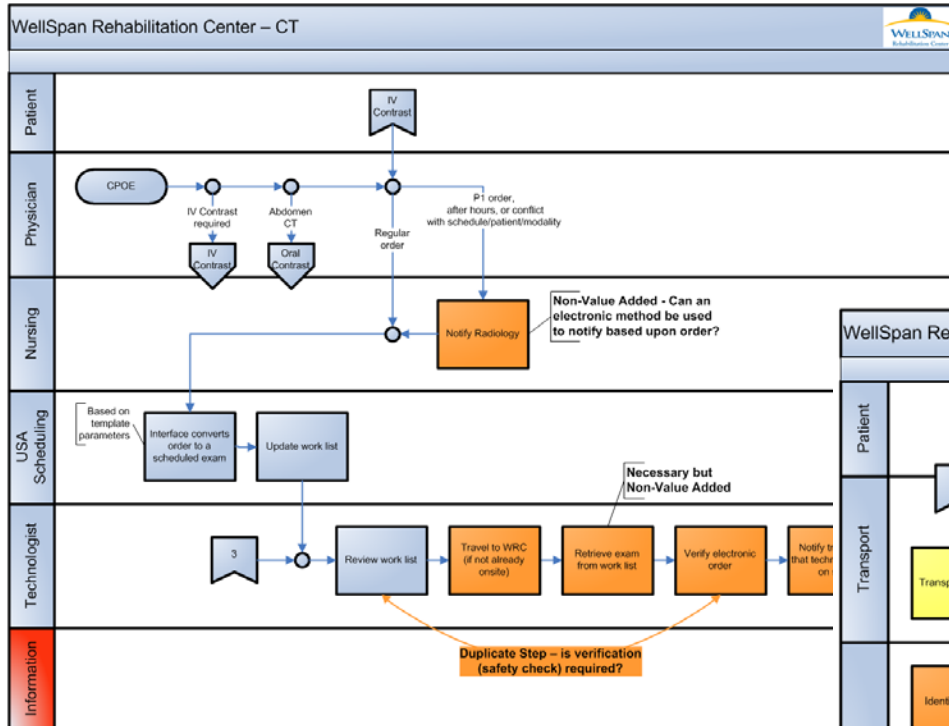
Outcomes from Spaghetti Diagrams



- Information technology design & system requirements
- Building Design
- Modification of Roles
- Workflow Readjustment

LEAN Process Approach

Workflow Design





Group Discussion

- Identification/discussion of workflow application for potential improvement in processes in your organizations
 - Anything immediately come to mind?



Questions?

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