



Oncology
Roundtable

Redesigning Cancer Care Delivery for the Era of Accountability, Part I

National Meeting Excerpt

Road Map

1

The Era of Accountability

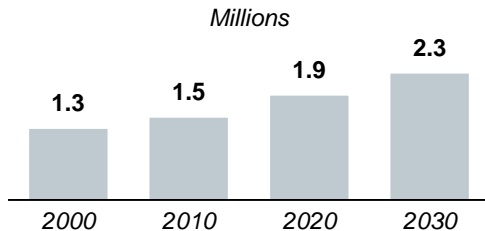
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Redesigning Cancer Care

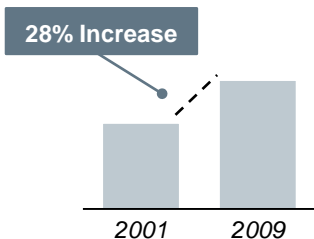
A Familiar Story

Increasing Volumes, Acuity, Treatment Complexity

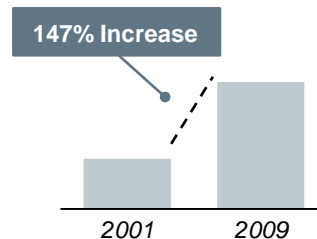
Projected Number of Annual U.S. Cancer Cases



Number of Physician Visits per Patient per Year



Number of Infusion Room Visits per Patient per Year

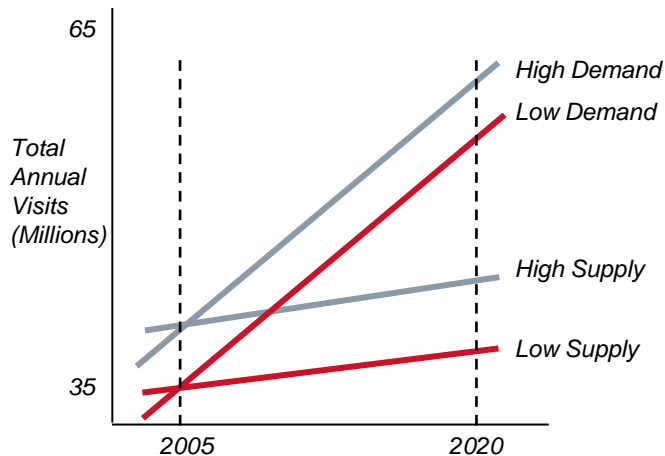


Source: SEER available at seer.cancer.gov; Shulman, L. et al., "Cancer Care and Cancer Survivorship Care in the United States: Will We Be Able to Care for These Patients in the Future?" *Journal of Oncology Practice*, 5(3): 119-123; Oncology Roundtable interviews and analysis.

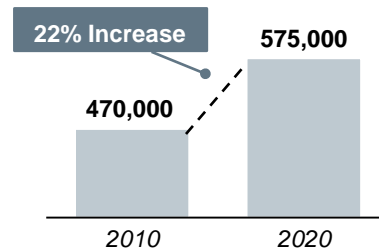
A Looming Shortage

Demand for Services Will Soon Outstrip Supply

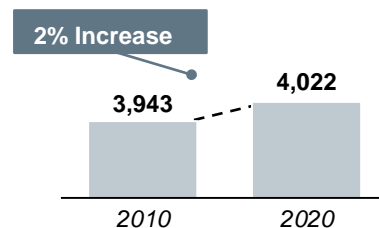
Projected Supply and Demand of Medical Oncologists



Number of Radiation Patients



Number of Full-Time Radiation Oncologists¹

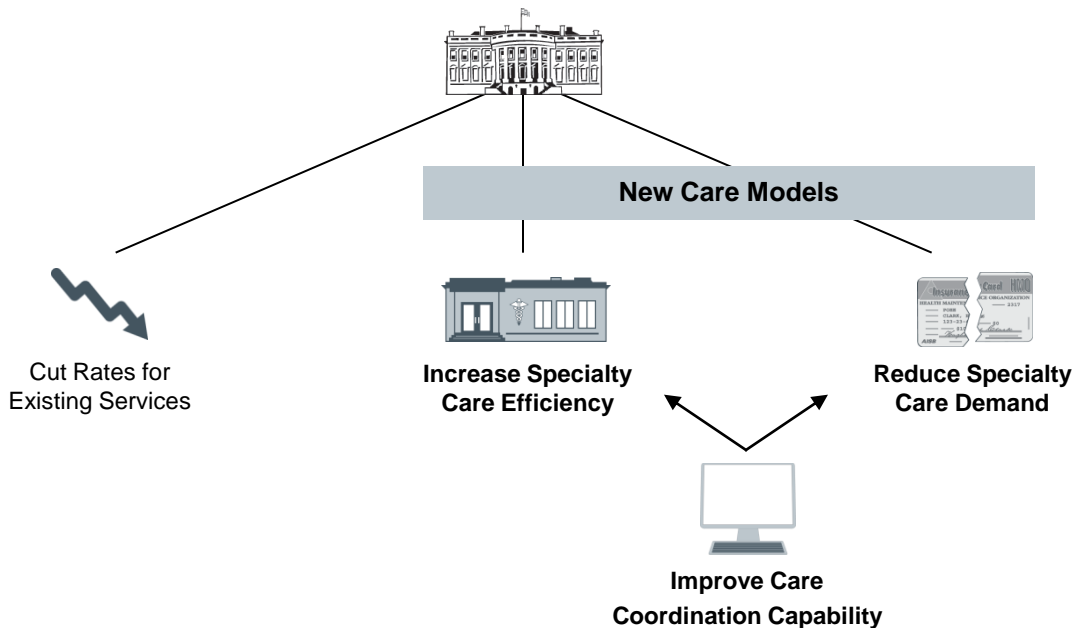


Source: AAMC Center for Workforce Studies, "Forecasting the Demand for and Supply of Oncologists," March, 2007, available at: <http://www.asco.org/ASCO/Downloads/Cancer%20Research/Oncology%20Workforce%20Report%20FINAL.pdf>, accessed March 17, 2011; Smith, BD, et al., "The Future of Radiation Oncology in the United States From 2010 to 2020: Will Supply Keep Pace with Demand?" *Journal of Clinical Oncology*, 2010; Oncology Roundtable interviews and analysis.

1) Assuming that the current graduation rate of 140 residents per year remains constant.

Reorganizing Care Delivery to Bend the Cost Curve

Specialty Care in the Crosshairs of Reformers



Commitment to Continuous Incremental Improvement

Yields Inspiring Results

The Virginia Mason Story



Strategies range from small ideas tested and implemented immediately to long-range planning and designing of spaces and processes



2002

2009

1

Became first health care organization to fully adopt tools of Lean manufacturing and continuous improvement



Completed 850th improvement event involving staff, patients, and guests



5.9%

Operating margin in 2009

\$11 M

Savings in capital expense due to more efficient use of space

35%

Reduction in professional liability insurance costs due to patient safety record¹

Top 1%

Among hospitals nationally in terms of quality and cost²

1) From 2007 to 2009.

2) According to analysis conducted by the Leapfrog Group.

Source: Kenney CK, "Transforming Health Care: Virginia Mason' Medical Center's Pursuit of the Perfect Patient Experience," New York: CRC Press, 2011; Oncology Roundtable interviews and analysis.

Waste Elimination Drives Value

Requiring a Change in Mindset

Seven Types of Waste

Type	Example
Time	Patients waiting at reception for clinic appointment
Motion	Nurses walking miles per day to and from supply closet
Inventory	Expired supplies (e.g. medication) that must be disposed of
Processing	Compiling a report that is no longer needed or acted upon
Defects	Poor handwriting making a physician order illegible
Transportation	Patients walking over a mile from parking to clinic to lab and back
Overproduction	Performing unnecessary diagnostic procedures

Redesigning Cancer Care

Advancing Performance Under Fee For Service

Redesigning Workflows

1

Clinic

1. **Clockwork Visit Prep**
2. Patient-Directed Care Plans
3. **Patient-Centric Service Flow**

2

Infusion Center

4. Data-Driven Patient Scheduling
5. **Drug Order Readiness Campaign**
6. **Rapid Infusion Protocols**

3

Radiation Therapy

7. **Streamlined RT Treatment Planning**
8. Same-Day RT Palliation
9. Patient Safety Timeouts

Process Improvement Playbook

Assembling the Care Team

4

Staffing

10. Value-Driven Clinic Staffing Model
11. Acuity-Based Infusion Center Staffing

2011 Roundtable Staff Benchmarks

Redesigning Cancer Care

Laying the Foundation to Succeed Under Payment Reform

Rightsizing Utilization

5

Patient Engagement

- 12. New Patient Onboarding
- 13. Oral Chemo Double Checks
- 14. Personalized Chemo Education
- 15. Automated Medication Reminders

6

Symptom Management

- 16. Nurse Triage Phone Line
- 17. Multidisciplinary Symptom Management Clinic

Road Map



1

The Era of Accountability

2

Redesigning Cancer Care



Clinic

Redesigning Workflows

- **Tactic #1: Clockwork Visit Prep**
- **Tactic #2: Patient-Directed Care Plans**
- **Tactic #3: Patient-Centric Service Flow**

The Future of Patient Service?

Compensating Patients for Waiting

Physicians Reimburse Patients for Wait Time



\$5

If waiting for more than 15 minutes

\$50

If physician cancels appointment



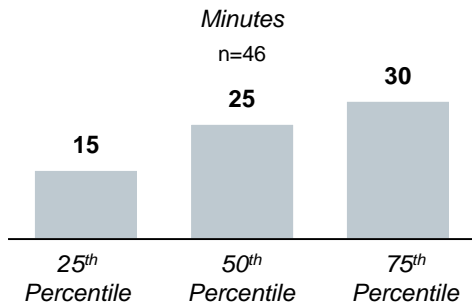
Study in Brief: Thank You for Waiting

- According to a 2010 Press Ganey study, wait times in U.S. physicians' offices average about 24 minutes
- After receiving patient complaints about long waits, several physicians have started paying patients or offering them small gifts if they are waiting longer than a certain period of time

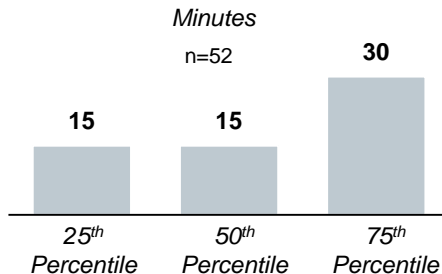
Time Is Money

Putting a Dollar Value on Clinic Delays

Medical Oncology Clinic Wait Times



Radiation Oncology Clinic Wait Times



Applying Fees to a Typical Oncology Clinic



\$20 per hour
 x 0.33 hours (average wait time)
 x 10,000 (average visits per year)

= \$66,000 per year

You're on Candid Camera

Videotaping Patients' Footsteps

Videotaping



Staff videotaped 20 patients' footsteps from registration to checkout



Physicians Interrupted



Tape revealed physicians frequently leave exam room during patient visit



Investigation



Physicians leave to ask MAs and RNs to retrieve missing supplies and medical charts



Redefining the Value of Face Time

“Every second the physician is out of the room, he is not with the patient, and he is adding waste.”

*Clinic Manager, Cancer Center
Artesa Healthcare Services¹*

You're on Candid Camera (cont.)





Case in Brief: Artesa Healthcare Services¹

- Eight-hospital health system based in the Southwest
- As part of a project to increase efficiency of a medical oncology clinic, clinic staff videotaped 20 patients moving through the clinic
- Found when patients were in exam room, physicians came in and out of room often, looking for missing supplies and medical chart information
- To prevent future interruptions, clinic standardized types and number of supplies in each exam room and information in each patient's medical chart

1) Pseudonym.

Addressing the Source of Interruptions

Standardizing Supplies and Patient Charts

Interruption	Solution
	Stock each exam room with 10 gowns, 2 boxes of gloves, and 3 supply carts
	Implement chart review checklist; ensure chart includes pathology reports, imaging, lab tests, and progress notes from referring physician

Other Candidates for Standardization

- Nurses' station supplies
- New patient intake process
- Patient registration process
- Lab draw process
- Communication of lab test results



Need to Have or Nice to Have?

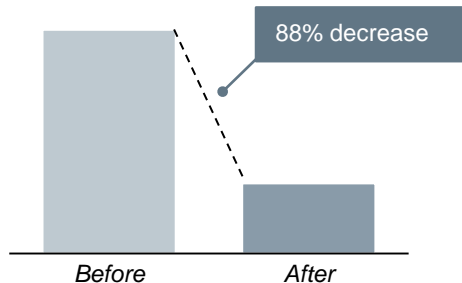
“Many programs just allow physicians to say ‘I need 3 RNs, 2MAs, and 1 receptionist.’ Often physicians don’t need those staff, but instead use those staff for workarounds. Instead, the question should be ‘When you go into your exam room, what do you need?’”

*VP, Oncology Service Line
Hospital in the South*

Maximizing Patient Face Time with Physicians

Freeing Nurses to Focus on Higher Level Tasks

Amount of Time Physicians are Outside Exam Room During Appointment



Other Benefits of Standardization

- RNs and MAs are able to spend more time on direct patient care
- Clinicians can rotate work stations
- Helps to optimize inventory levels



Creating More Time

“A nurse who is hunting for supplies is doing it to serve the needs of patients. Nurses may not see this as wasted time, and may not stop to wonder why those supplies aren’t where they need them every time they need them. But if the supplies were always readily available, the time nurses spend hunting for them would instead be devoted to something more appropriate to their skills and expertise.”

IHI, 2005

Supply Standardization Principles

Standardization Process

1. Review

- What is needed?
- What is not needed?

2. Remove

- What can you get rid of or move to storage?

3. Prioritize

- What is used most frequently?

4. Standardize

- Make consistent across work areas
- Ensure everyone is aware of standards

5. Monitor

- Ensure standards are upheld

Guidelines for Storing Items Based on Frequency of Use

Frequency of Use	Storage Proximity
Hourly	Within arm's reach
Every shift	Within a short walk
Daily	Further away
Monthly	Department storage
Annually	Hospital storage

Factors to Consider When Determining Supply Storage Volumes

- ✓ Average use or demand for supply
- ✓ Frequency of considering reordering
- ✓ Vendor time for replenishing supply
- ✓ Safety concerns; considering variation of usage, variation in replenishment time, and cost of stocking

New Facility Provides Blank Slate

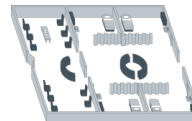
Patient-Driven Design Process

Brainstorming Session



Multi-disciplinary staff mapped out and measured patient steps in current clinic process

Designing Facility



Team designed a concept of care that consolidates steps and conserves patient energy

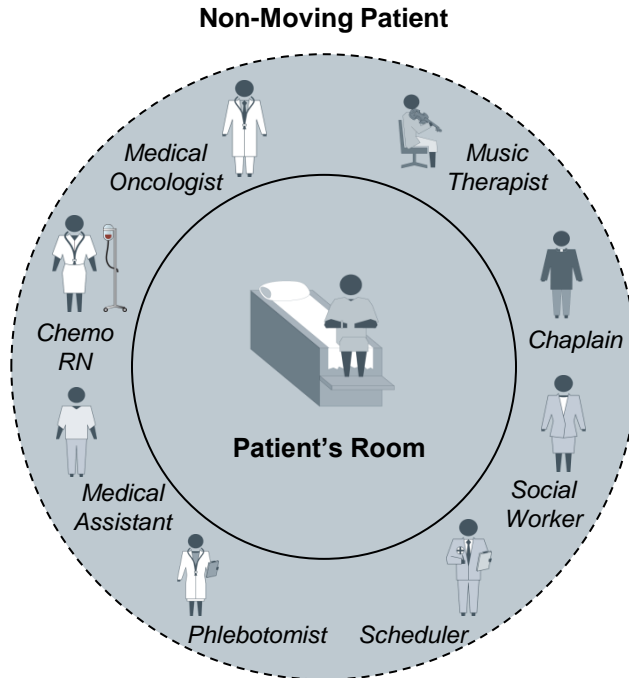


Case in Brief: Park Nicollet Methodist Hospital

- 426-bed hospital located in St. Louis Park, Minnesota
- In 2005, began planning new Park Nicollet Frauenshuh Cancer Center facility by taking patient perspective
- In 2009, opened facility with a “non-moving patient” care model; instead of requiring patients to move from location to location within the cancer center to receive care, patients remain in one room while staff and physicians come to them; services performed in patient’s room include lab draws, nursing assessment, physician exam, IV therapy administration, scheduling of future appointments, and additional supportive services

Placing Patients at the Center

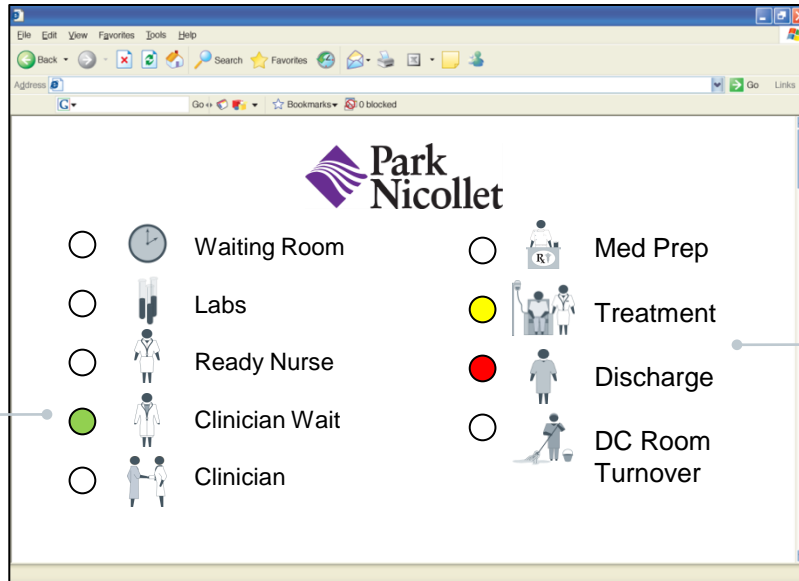
Cancer Center Staff Bring Care to the Patient's Room



Choreographing Staff Flow

EMR Provides Real-Time Information on Patient Status

Electronic Medical Record Patient Locator



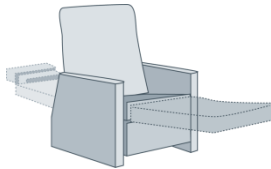
Nurse finishes, advances icon, physician is notified, goes to patient room

Set timeframe for each stage; color changes to indicate when patient has been waiting beyond limit

Designing Equipment to Realize the Vision

Chair Accommodates Exam, Infusion, Procedure

The Multipurpose Chair



- Park Nicollet staff could not find desired equipment for non-moving patient care model
- Worked with a furniture manufacturer to design chair
- Multipurpose chair heats, reclines, and converts into a standard 32" exam table, which is stable enough to conduct bone marrow biopsies



Conserving Energy For Steps that Matter

“The phlebotomists, schedulers, nurses and providers all come to the patient’s exam/treatment room. This allows patients to conserve energy, which decreases the amount of patient walking when they do not feel well.”

*Administrative Director
Park Nicollet Frauenshuh Cancer Center*

Key Takeaways

1 Patients Equate Efficiency with Quality

Many patients perceive service quality issues, such as long wait times or unclear communication, as unsafe incidents. Consequently, cancer programs' efforts to improve operations has the potential not only to improve the patient experience but also to increase patients' confidence in the quality of their care.

2 Clinician Time is Valuable

Many physicians have learned to rely on nurses and medical assistants to retrieve supplies, gather medical chart information or perform other non-clinical tasks. While these activities are ostensibly performed in service to patients, they could be avoided altogether through workflow redesign and supply standardization. Doing so would not only reduce interruptions to the patient visit but also increase the time clinical staff spend on higher-value activities.

3 Behind the Scenes Work Allows for Seamless Patient Experience

When redesigning clinic workflows, consider the processes involved in both direct and indirect patient care. Often fixing operations that occur "behind the scenes" has the greatest impact on patients' time with the care team.

4 Standardization and Personalization are Not Mutually Exclusive

Standardizing operations does not preclude individualized care; rather, it sets the stage for a productive patient interaction as it ensures clinicians have everything at hand to deliver high quality and timely care.



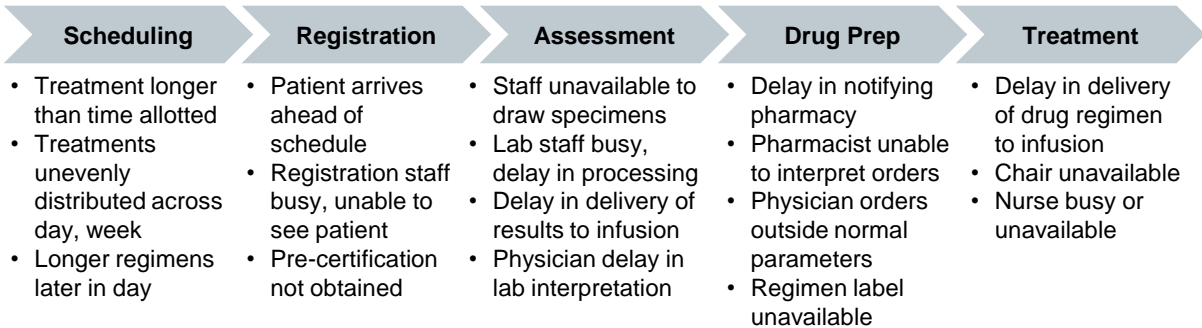
Redesigning Workflows

Infusion Center

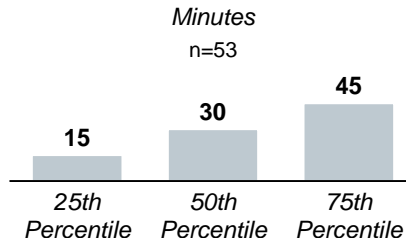
- **Tactic #4:** Data-Driven Patient Scheduling
- **Tactic #5:** Drug Order Readiness Campaign
- **Tactic #6:** Rapid Infusion Protocols

In Infusion Center, Bottlenecks at Every Turn

Common Bottlenecks in Chemotherapy



Chemotherapy Time to Treatment¹



1) Answer to Member Survey question: "On average at your facility, how much time elapses from the moment a patient checks into the infusion center until his/her infusion begins?"

Multidisciplinary Group Defines Problem

Distills Issue into Two Parts

Multidisciplinary Discussion



- Eight staff from cancer center, lab, pharmacy, university, and Six Sigma department to ensure buy-in
- Met weekly for two hours for eight months



Problems Identified

1 Order Submission

- Illegible
- Incomplete
- Multiple entry points

2 Order Storage

- Poor storage layout
- No clear filing guidelines
- Fragmented responsibility



Bringing Order to Orders

“In a nutshell, there were a lot of challenges with orders...The staff couldn’t find them or they found them after the patients had arrived...In fact, 29 percent of orders weren’t available prior to patients’ arrivals. Another significant concern was that orders were incorrect, incomplete, or illegible 59 percent of the time. To make matters worse, the confusion was beginning to jeopardize patient safety.”

American Society for Quality, 2006

Multidisciplinary Group Defines Problem (cont.)



Case in Brief: The Nebraska Medical Center

- 624-bed academic medical center located in Omaha, Nebraska
- Launched a Six Sigma project to target problems with the completeness and availability of physician orders for patients
- Implemented changes related to order submission and order storage
- Over 15-month period, numbers of complete and available orders significantly increased, as well as patient satisfaction

Redesigning Order Processes

Streamlining Order Capture and Tracking

Physician Performance Monitoring



- ✓ Give summaries of individual performance to physicians
- ✓ Nurse checks all orders 24 hours in advance; follows up with physician when order incomplete

Order Submission



- ✓ Simplify order form
- ✓ Create diagnosis-specific order forms
- ✓ Consolidate delivery channels from 15 to 3

Order Storage

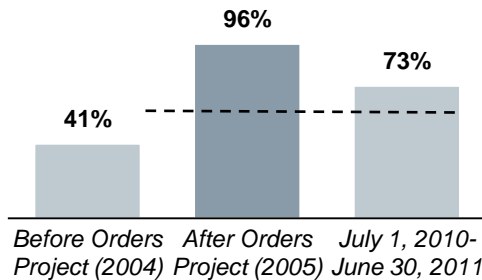


- ✓ Redesign filing cabinets
- ✓ Relocate cabinets
- ✓ Limit incoming calls to free up staff who handle orders

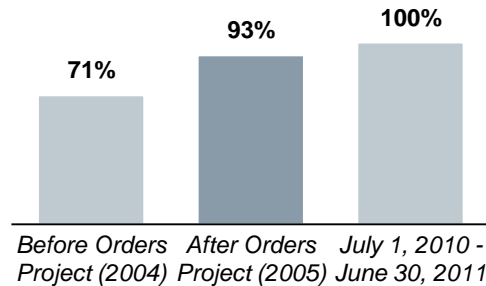
Process Changes Produce Dramatic Results

Lasting Over Time

Percentage of Complete Orders



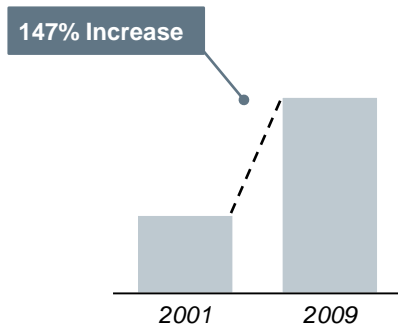
Percentage of Available Orders



On A Collision Course

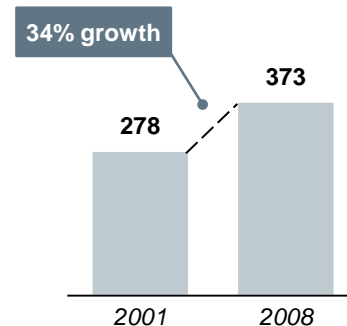
Increasing Infusion Time, Patient Acuity, and Volumes

Number of Infusion Room Visits per Patient per Year



Outpatient Oncology Services¹

Thousands



1) Includes radiation therapy and medical oncology; counted by treatment episode (e.g., one episode is equivalent to full course of radiation therapy).

Source: Innovations Center Futures Database; Shulman L. et al., "Cancer Care and Cancer Survivorship Care in the United States: Will We Be Able to Care for These Patients in the Future?" *Journal of Oncology Practice*, 5(3): 119-123; Oncology Roundtable interviews and analysis.

Literature Review Reveals Opportunity

Pilot Confirms Safety of Shorter Infusion Times

Reviews Literature



- Manufacturer indicates over 3 hour average rituximab infusion time
- Pharmacist read *Blood* report demonstrating safety of rapid infusion

Refines Protocols



- Pharmacist refines rituximab infusion time to 90-minutes for patients with non-Hodgkin's lymphoma

Pilots Initiative



- Pharmacist leads three analyses to evaluate infusion times and resource use with and without protocol

Communicates Practice



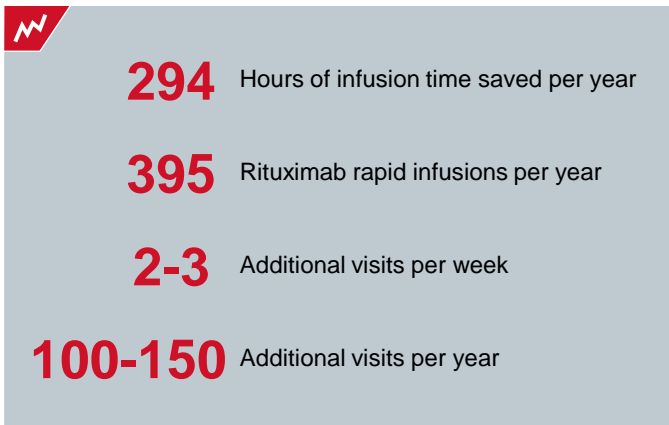
- Pharmacist communicates change in infusion length to nurses and to physicians through order form



Case in Brief: University of North Carolina Hospitals

- Five-hospital health system based in Chapel Hill, North Carolina
- In November 2008, as part of initiative to expand clinical pharmacist practitioner role and to increase infusion center efficiency, pharmacist led implementation of a rapid-infusion rituximab protocol

Saving Time, Increasing Capacity



Similar Story, Different Drug



Case in Brief: NorthShore University Health System

- Four-hospital health system based in Evanston, Illinois
- Pharmacist began initiative to shorten infusion time for bevacizumab based on reviewing a 2007 *Journal of Clinical Oncology* study
- Revised electronic treatment plans to reflect shortened infusion times based on dose on initial administration and subsequent administrations
- Infusion times were reduced from 90 minutes for first dose, 60 minutes for second dose and 30 minutes for third dose regardless of dose to a fixed rate dose dependent schedule:
 - 15 mg/kg over 30 minutes
 - 10 mg/kg over 20 minutes
 - 5 mg/kg over 10 minutes



588

Chair hours saved per year¹

1) Annualized rate based on 294 chair hours saved over six months across three sites.

Key Takeaways

1 Look to Process Data to Find Opportunities for Improvement

Growing patient volumes, increasing patient acuity and longer infusion times are forcing many infusion centers to refocus on efficiency and productivity. Collecting data on performance, processes and common bottlenecks, can help program leaders to identify problems and design more streamlined processes.

2 Physicians, Infusion Center Staff, Lab and Pharmacy Must Work in Synchrony

Seamless high-quality care in the infusion center requires a synchronization of processes in the clinic, infusion center, laboratory and pharmacy. All too often, staff work in silos without understanding the downstream impact of their actions. Increasing transparency and communication between these areas has the potential to significantly improve performance.

3 Look for Opportunities to Parallel Process

Given the many interdependencies between processes in the infusion center, careful timing is critical to minimize patient wait time. Consequently, infusion center managers should look for opportunities to implement parallel processing, for example of laboratory tests, preparation of pre-medications or drug mixing.

4 Easier to Add Steps Than to Take Away

Over time, organizations tend to add steps to processes in response to new or evolving needs; however, it is much less common to remove steps. As a result, many processes include steps that are no longer necessary or for which more efficient alternatives exist. In order to capture opportunities to streamline workflows, cancer program staff should periodically audit processes to ensure that every step is necessary and appropriate given staffing and available resources.



Redesigning Workflows

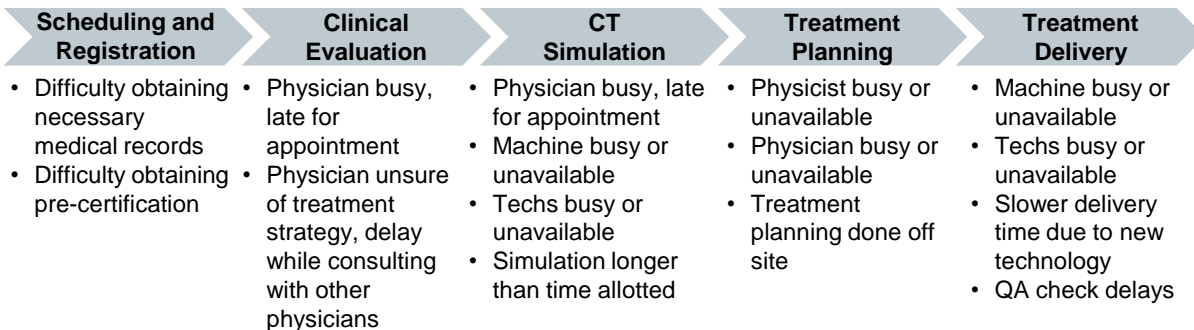
Radiation Therapy

- **Tactic #7:** Streamlined RT Treatment Planning
- **Tactic #8:** Same-Day RT Palliation
- **Tactic #9:** Patient Safety Timeouts

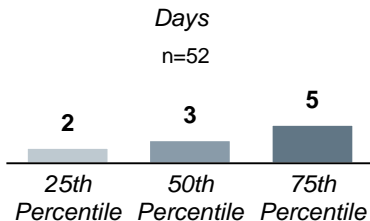
Waits for Radiation Therapy Starts

Affecting Patient Satisfaction and Quality

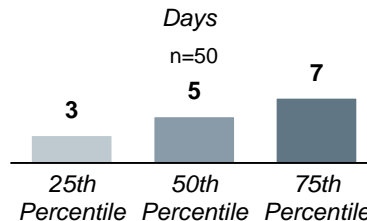
Common Bottlenecks in Radiation Therapy



Time from Referral to Consult¹



Time from Consult to Treatment²



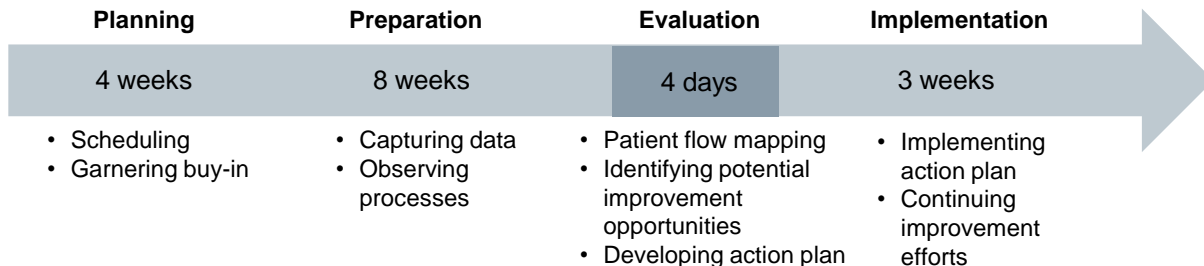
1) Answer to Member Survey question: "On average at your facility, how much time elapses from the day a new patient calls the radiation oncology clinic for an appointment to the day of the appointment itself?"

2) Answer to Member Survey question: "On average at your facility, how much time elapses from a new patient's radiation oncology consult to his/her first treatment?"

Executing a Rapid Improvement Project

Success Hinges on Diligent Prep and Follow Up

Project Timeline



Case in Brief: ThedaCare

- Five-hospital health system based in Appleton, Wisconsin
- Purchased an Accuray CyberKnife; Accuray recommended adding five dedicated FTEs
- Conducted rapid improvement event to streamline processes and reduce additional staff required to support the new technology to two FTEs

Assembling the Project Team

Each Individual Brings Unique Perspective

Team Composition



1-2 people familiar with
RT processes



1-2 people unfamiliar with
RT processes



1-2 physicians



1 lead facilitator



1-2 patients or
family members



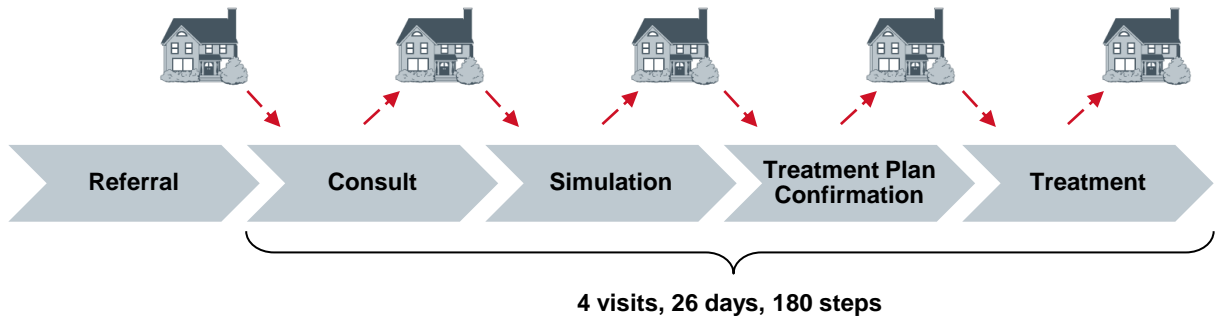
Securing Physician Buy-in

- Project presented as an experiment
- Private practice physicians paid for time
- Physicians given advance notice of meetings and future required time commitment
- Presented data at meetings
- Physicians surprised by patient feedback
- Prioritized physicians' suggestions
- All changes piloted prior to full implementation

Mapping Patient Flow

Achieving a Common Understanding of Current Performance

Old Process



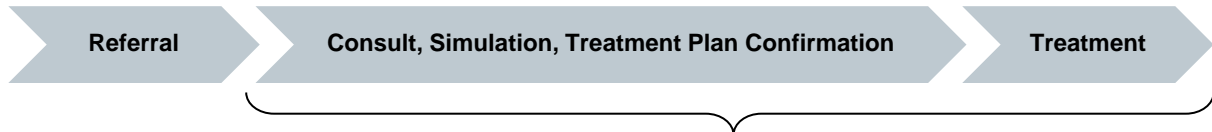
“Inevitably, [the patients] will tell you, the only place they find value is when they’re getting a procedure or are face-to-face with a doctor or nurse.”

*VP, Radiation Oncology
ThedaCare*

Consolidating Steps to Speed Flow

Requires Enhanced Prep and Communication

Revised Process



2 visits, 16 days

Changes to Process



1. When new patient scheduled, all members of the care team are notified so that they can be available to discuss the case



2. When new patient scheduled, all members of the care team are informed of the patient's diagnosis



3. Patient's simulation and imaging are scheduled for same day as consult

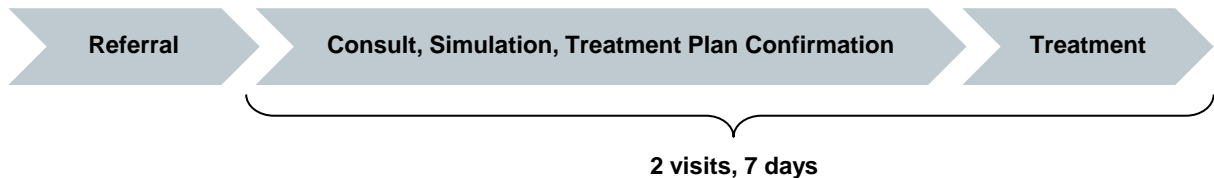


4. Before patient leaves the cancer center, physician reviews images to ensure they are complete

Looking Through Patients' Eyes

Rethinking Value of Each Step

Further Revised Process



”

“...maybe 30 out of those 180 steps actually add value to the patient. We're not saying you don't have to do all those other steps, but it's shocking to the staff and the physicians when the patients say they really don't care about how long it takes to get their blood work. They don't really care about being weighed or that you need three weeks to make a treatment plan for them. All they care about is seeing you and getting a plan and getting their treatment started.”

*VP, Radiation Oncology
ThedaCare*

Achieving More than Efficiency Gains

Improvement in Physician and Patient Satisfaction



73% Reduction in time from referral to treatment

30% Increase in productivity



Physician Satisfaction

“Although I can ask for what I want at the other hospital, they agree, but don’t make any changes, and they don’t improve. But, here, I know you’re listening to me, and developing a process that’s sustainable. So, even if I have to wait three months for something I ask to be done, I know it will be looked into and implemented.”

*Radiation Oncologist
ThedaCare*



Patient Satisfaction

“...most importantly, it has meant that patients are happier because they are getting the same quality of care with better service. If you’re a patient in the process today vs. before, there have been great breakthroughs, and they’re very pleased with the outcomes.”

*VP, Radiation Oncology
ThedaCare*

Radiation Therapy Safety Receiving National Attention

The New York Times



“Radiation Offers New Cures, and Ways to Do Harm”

January 23rd, 2010



“As Technology Surges, Radiation Safeguards Lag”

January 26th, 2010



“Radiation Therapy’s Harmful Side”

January 26th, 2010



“A Pinpoint Beam Strays Invisibly, Harming Instead of Healing”

December 28th, 2010

Source: Boganich W, “Radiation Offers New Cures, and Ways to Do Harm,” *New York Times*, January 23, 2010; Boganich W, “As Technology Surges, Radiation Safeguards Lag,” *New York Times*, January 26, 2010; “Radiation Therapy’s Harmful Side,” *New York Times*, January 26, 2010; Boganich W, et al., “A Pinpoint Beam Strays Invisibly, Harming Instead of Healing,” *New York Times*, December 28, 2010; Oncology Roundtable interviews and analysis.

Starting with Patient Flow

Divide Radiation Therapy into Seven Phases



Case in Brief: North Shore Long Island Jewish Health System

- Fourteen-hospital health system based in Manhasset, New York
- Radiation department began top to bottom review of patient care to develop system of accountability and quality assurance
- Formed quality management team comprised of staff from all sites of the department to map the treatment process from consultation to treatment completion
- “No Fly” policy includes monthly assessment and evaluation of process map and data
- New patient education materials outline the policy and notify patients of the rescheduling risk

Creating Quality Checklists for Each Phase

Assigning Deadline and Accountability

Sample Quality Checklists

Consult

- ✓ Obtain records
- ✓ Demographics
- ✓ Insurance information
- ✓ HIPAA forms
- ✓ RN Education
- ✓ Nursing Assessment
- ✓ Treatment consent
- ✓ Screen for protocol

Physician Treatment Plan

- ✓ Path reviewed
- ✓ Request fusion
- ✓ Contour
- ✓ MD approve plan

Treatment Initiation

- ✓ Path reviewed
- ✓ Check plan approved
- ✓ Check consent
- ✓ Laterality
- ✓ Portal vision
- ✓ Chart rounds
- ✓ First day physics check



Quality Checklists

Please see Appendix for NSLIJHS's safety quality checklists

Identifying Vulnerabilities

Using Checklists to Hone in on Stress Points



Query EMR

- Patient treatment process stratified in EMR into stages
- Assigned a QCL¹ to each stage
- Created rules for the addition of a QCL in the patient's electronic chart with specific scheduling dates and due dates for staff member tasks



Risk Stratification

- Identified persistent outliers that generally reflected areas at risk for safe treatment
- Prospectively assigned risk levels



Validation

- Validated assigned risk levels with observed delays or failures



Top Three Process Breakdowns

1. Timelines of written directive
2. Proof of consent
3. Plan second checks

Instituting a “No Fly” Zone

Stopping Rules Hardwire Patient Safety

Example Stopping Rules

Consult



A consult is rescheduled if records are not obtained 24 hours in advance

Treatment Initiated



If for any reason during the planning phase, there is a change in the prescription, planning rules or contours, patient’s treatment start is pushed back by 4 business days



Top Five Reasons for Stop

1. Patients electively changes appointment or chemotherapy was delayed
2. Delays in physician contouring
3. Delayed IMRT quality assurance checks
4. Need for plan modifications
5. Delay in outside pathology review



“No Fly” Policy Education

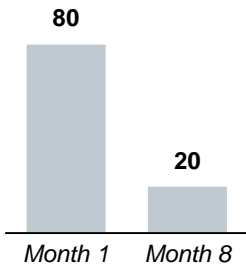
Please see Appendix for NSLIJHS’s patient education on the “No Fly” policy

Laying the Groundwork for Safety and Efficiency

Transitioning from Reactive to Proactive Culture

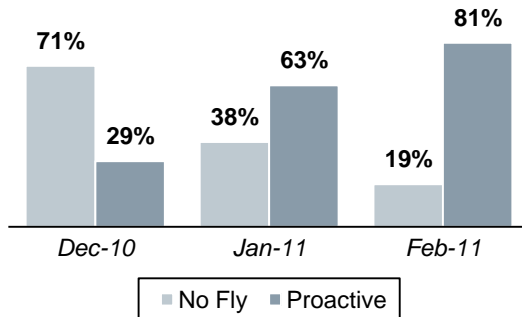
Patient Treatment Stops

n=520



No Fly vs. Proactive Treatment Start Delays

n=520



Key Takeaways

1 Begin by Understanding Current Patient Flow

All process improvement projects should begin with a careful assessment of current processes. Process mapping is a powerful tool to facilitate this exercise and ensure that everyone on the team has a common understanding of department workflows.

2 Standardization Improves Information Flow, Operational Performance

While radiation therapy is fairly standardized relative to other oncology services, there is still variation, and therefore opportunity to streamline operations through increased standardization. Good candidates for standardization include the patient intake process, care team coordination and staff roles.

3 Quality Checklists Facilitate Consistency But Must Be Coupled with Culture Change

Quality checklists at each stage of the referral, consult, simulation and treatment processes smooth the flow of information and improve patient safety; however, checklists alone are insufficient. Staff should be trained and rewarded for using checklists as a tool to proactively identify missing information, incomplete steps, and potential patient safety concerns.