Virginia Mason Medical Center

- Integrated health care system
- 501(c)3 not-for-profit
- 336-bed hospital
- Nine locations
- 500 physicians
- 6,000 employees
- Graduate Medical Education
- Research Institute
- Foundation
- Virginia Mason Institute
The Challenge of Healthcare

- Poor Quality: 3% defect rate
- Impact on individuals: 100% defect
- Cost of poor quality: Billions of dollars
- Cost of healthcare to those who pay: Unaffordable
- Access: Millions
- Morale of workers: Unreliable systems
An Embarrassingly Poor Product


The lead story is titled “The Biggest Mistake of Their Lives” and chronicles four survivors of medical errors.

The article goes on to say that in 2003, as many as 98,000 people in the United States will die as a result of medical errors.
Why is Change So Hard?

Culture
Lack of Shared Vision
Misaligned Expectations
No Urgency
Ineffective Leadership
Clash of “Promise” and Imperatives

Traditional “Promise” Legacy Expectations

- Autonomy
- Protection
- Entitlement

Imperatives

- Improve safety/quality
- Implement EHR
- Create service experience
- Be patient-focused
- Improve access
- Improve efficiency
- Recruit/retain quality staff
Organization’s Responsibilities

Foster Excellence
• Recruit and retain superior physicians and staff
• Support career development and professional satisfaction
• Acknowledge contributions to patient care and the organization
• Create opportunities to participate in or support research

Listen and Communicate
• Share information regarding strategic intent, organizational priorities and business decisions
• Offer opportunities for constructive dialogue
• Provide regular, written evaluation and feedback

Educate
• Support and facilitate teaching, GME and CME
• Provide information and tools necessary to improve practice

Reward
• Provide clear compensation with internal and market consistency, aligned with organizational goals
• Create an environment that supports teams and individuals

Lead
• Manage and lead organization with integrity and accountability

Physician’s Responsibilities

Focus on Patients
• Practice state of the art, quality medicine
• Encourage patient involvement in care and treatment decisions
• Achieve and maintain optimal patient access
• Insist on seamless service

Collaborate on Care Delivery
• Include staff, physicians, and management on team
• Treat all members with respect
• Demonstrate the highest levels of ethical and professional conduct
• Behave in a manner consistent with group goals
• Participate in or support teaching

Listen and Communicate
• Communicate clinical information in clear, timely manner
• Request information, resources needed to provide care consistent with VM goals
• Provide and accept feedback

Take Ownership
• Implement VM-accepted clinical standards of care
• Participate in and support group decisions
• Focus on the economic aspects of our practice

Change
• Embrace innovation and continuous improvement
• Participate in necessary organizational change
The VMMC Quality Equation

\[ Q = A \times \frac{(O + S)}{W} \]

Q: Quality
A: Appropriateness
O: Outcomes
S: Service
W: Waste
Finding a Method

Seeing with our Eyes  Japan 2002
Team Leader Kaplan reviewing the flow of the process with Drs. Jacobs and Glenn
What we learned

How are air conditioners, cars, looms and airplanes like health care?

• Every manufacturing element is a production processes

• Health care is a combination of complex production processes: admitting a patient, having a clinic visit, going to surgery or a procedure and sending out a bill

• These products involve thousands of processes—many of them very complex

• All of these products involve the concepts of quality, safety, customer satisfaction, staff satisfaction and cost effectiveness

• These products, if they fail, can cause fatality
The Virginia Mason Production System

We adopted the Toyota Production System key philosophies and applied them to healthcare

1. The patient is always first
2. Focus on the highest quality and safety
3. Engage all employees
4. Strive for the highest satisfaction
5. Maintain a successful economic enterprise
The Patient is *Always* First

- The patient is at the top of our strategic plan
- Value is defined by the patient
- Patient’s voice is embedded in our improvement activities
Visual Control for Safety

5S Anesthesia Shadow Board - After
Stopping the Line™

Virginia Mason’s Patient Safety Alert System™
Patient Safety Alert Process™

Created August 2002

- Leadership from the top
- “Drop and run” commitment
- 24/7 policy, procedure, staffing
- Legal and reporting safeguards
Safety Culture Question –
Staff Speak Up Freely*

*Question: Staff will speak up freely if they see something that may negatively affect patient safety
A Turning Point for Virginia Mason

• In 2004, a medical error caused the tragic death of Mary L. McClinton, a VM patient.

• This event and the decision for full public transparency was a defining moment for the organization.
Percent of Reconciled Medications on Discharge

November 2010:
PowerChart Phase II:
Implementation of Cerner Medication Reconciliation Tools

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“Good Catch!” Safety Award
Patient Safety Risk Register
April 2013

Quality and Safety Outcomes | Quality and Compliance

The top five risks to patients represent
70% of recorded injury
71% of total costs
56% of all reported events

Highlights
1. Coordination & Scheduling
   Highest volume of harm. Second highest number of events. 115 patients had injury. The most common theme was a defect or delay in responding to an urgent or emergent clinical condition.
2. Medication issues
   Highest reporting rate. More than half of these events were detected before the medication was given or after the intended delivery time.
3. Direct Patient Care issues
   51% of total known costs. 320 patients had injury. The most common themes and reasons for cost were falls, aspiration, and monitoring concerns. Almost all events (89%) occurred either on the hospital ward or in the operating room.

Information sources
- Patient Safety
- Analytics
- Financial Services
- Claims

$865,860 total cost to VM
$564,599 in waived fees
$301,261 in indemnity payments

Staff Safety Risk Register
April 2013

Quality and Safety Outcomes | Quality and Compliance

The top five risks to staff represent
63% of recorded injury
76% of total costs
85% of days lost to work

Highlights
1. Lifting
   Highest cost for treatment ($280,875). Most days lost to work (1,449). 97 staff members reported lifting injuries. Last year also #1 for cost and days lost to work.
2. Physical abuse by patients
   Most reported events in a specific category (137). Half resulted in a physical injury to a staff member.
3. Invasive injuries
   Mostly involved needles and blades. Largest number of staff injuries (98).

Information sources
- Employee Health
- Human Resources
- Security
- Patient Safety
- 3rd Party Providers

10,957 reports in 2012
1,547 staff exposed to risk
497 staff reported physical injury
100 staff reported emotional injury
2,361 days lost to work
50,000th PSA Reported

End of September 2014: 50,816
Effectiveness of Patient Safety Program

Excludes claims without payment

© 2014 Virginia Mason Medical Center
VMHS Hospital Professional/General Liability Insurance Premiums

% change from previous year, with 74% overall reduction in premium since 2004-05

© 2014 Virginia Mason Medical Center
“Nursing Cells” – Results > 90 days

RN time available for patient care = 90%!

<table>
<thead>
<tr>
<th>Before</th>
<th>After</th>
</tr>
</thead>
<tbody>
<tr>
<td>• RN # of steps = 5,818</td>
<td>846</td>
</tr>
<tr>
<td>• PCT # of steps = 2,664</td>
<td>1256</td>
</tr>
<tr>
<td>• Time to the complete am cycle of work = 240’</td>
<td>126’</td>
</tr>
<tr>
<td>• Patients dissatisfaction = 21%</td>
<td>0%</td>
</tr>
<tr>
<td>• RN time spent in indirect care = 68%</td>
<td>10%</td>
</tr>
<tr>
<td>• PCT time spent in indirect care = 30%</td>
<td>16%</td>
</tr>
<tr>
<td>• Call light on from 7a-11a = 5.5%</td>
<td>0%</td>
</tr>
<tr>
<td>• Time spent gathering supplies = 20’</td>
<td>11’</td>
</tr>
</tbody>
</table>
One Piece Flow:
Documentation in Room or Close to Patients
WHY:
Introduction of oncoming caregivers
Involves the patient in discussion
Builds in safety
Adds time with patient

<table>
<thead>
<tr>
<th>Bedside Handoff Checklist</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1 Introduction</strong></td>
</tr>
<tr>
<td>- Name of oncoming RN and assistant</td>
</tr>
<tr>
<td>- Explains handoff process</td>
</tr>
<tr>
<td>- Inquires how patient is feeling</td>
</tr>
<tr>
<td><strong>2 Background (Basics)</strong></td>
</tr>
<tr>
<td>- Age, MD, reason for admission</td>
</tr>
<tr>
<td>- Isolation</td>
</tr>
<tr>
<td><strong>3 Current status</strong></td>
</tr>
<tr>
<td>- Brief history</td>
</tr>
<tr>
<td>- Functioning prior to admission</td>
</tr>
<tr>
<td>- Key medications</td>
</tr>
<tr>
<td>- Tests for the day</td>
</tr>
<tr>
<td><strong>4 Assessment</strong></td>
</tr>
<tr>
<td>- Patient identification</td>
</tr>
<tr>
<td>- High risk meds</td>
</tr>
<tr>
<td>- IV</td>
</tr>
<tr>
<td>- Physical assessment</td>
</tr>
<tr>
<td>- Precautions/Skin/Wound</td>
</tr>
<tr>
<td>- Patient input</td>
</tr>
<tr>
<td><strong>5 Recommendations</strong></td>
</tr>
<tr>
<td>- Plan of the Day</td>
</tr>
<tr>
<td>- Safety concerns</td>
</tr>
<tr>
<td>- Patient issues</td>
</tr>
<tr>
<td><strong>6 Closing</strong></td>
</tr>
<tr>
<td>- &quot;Is there anything you need at this time?&quot;</td>
</tr>
<tr>
<td>- Determine when will return</td>
</tr>
</tbody>
</table>
Surrogate Markers: Kaizen
VMPS Method: One Piece Flow

Flow Stations
Team Based Care: Skill /Task Alignment

Medical Assistant:
- Standard rooming sequences
- Review Health Maintenance Module
- Shared documentation
- Coordinating provider “flow” through the day

RN:
- Patient assessment
- Empowerment of patient for self care
- Protocol driven-teaching and coaching for chronic conditions
- Nursing procedures

Pharmacist:
- Medication management for chronic conditions
- Advanced protocols for disease state management

Provider:
- Diagnosis and treatment of new problems
- Oversight of complicated problems
- Minor surgical and diagnostic procedures
- Mentor and coach for team based care
### VMPS Method: Mistake Proofing

**The Health Maintenance Module**

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#### PowerChart Office - (and a low to do) Health Maintenance

- **Task**: View, Patient, Chart, Clinic, Health Maintenance, Help

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#### Pending Expectations

<table>
<thead>
<tr>
<th>Expectation</th>
<th>Satisfy Type</th>
<th>Administration</th>
<th>Satisfy Reason</th>
<th>Priority</th>
<th>Last Satisfied By</th>
<th>Approximate Due Date</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>CA Breast Cancer Screen High Risk (40-100yrs)</td>
<td>High Due</td>
<td>03/01/09</td>
<td></td>
<td></td>
<td>Ashley, Tiffany L</td>
<td>03/01/08</td>
<td></td>
</tr>
<tr>
<td>CV Lipids AT GOAL &lt;100 High Risk (18-100yrs)</td>
<td>High Refused</td>
<td>02/24/09</td>
<td></td>
<td></td>
<td>VMMC Downtown, Lab</td>
<td>02/25/08</td>
<td></td>
</tr>
<tr>
<td>CV Diabetes Monofilament Foot Exam (18-100yrs)</td>
<td>High Refused</td>
<td>01/17/09</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CA Cervical Cancer Screening [21-65yrs]</td>
<td>High Overdue</td>
<td>08/07/09</td>
<td>VP-Score</td>
<td></td>
<td>CEPNERLAB</td>
<td>08/08/09</td>
<td></td>
</tr>
<tr>
<td>CV Diabetes HbA1c not at goal (18-100yrs)</td>
<td>High Overdue</td>
<td>05/25/08</td>
<td></td>
<td></td>
<td>VMMC Downtown, Lab</td>
<td>02/25/08</td>
<td></td>
</tr>
</tbody>
</table>

---

#### Recently Satisfied Expectations

<table>
<thead>
<tr>
<th>Expectation</th>
<th>Status</th>
<th>Satisfy Type</th>
<th>Administration</th>
<th>Satisfy Reason</th>
<th>Priority</th>
<th>Last Satisfied By</th>
<th>Approximate Due Date</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>CA Breast Cancer Screen High Risk (40-100yrs)</td>
<td>Satisfied</td>
<td>Manual</td>
<td>03/01/08</td>
<td>Routine Screening</td>
<td>High</td>
<td>Ashley, Tiffany L</td>
<td>03/01/08</td>
<td>right sided mam..</td>
</tr>
<tr>
<td>CA Cervical Cancer Screening [21-65yrs]</td>
<td>Satisfied</td>
<td>Manual</td>
<td>09/22/08</td>
<td></td>
<td>High</td>
<td>Petersson, Kev..</td>
<td>09/22/08</td>
<td></td>
</tr>
<tr>
<td>CV Diabetes HbA1c not at goal (18-100yrs)</td>
<td>Satisfied</td>
<td>Result</td>
<td>05/31/07</td>
<td></td>
<td>High</td>
<td></td>
<td>05/31/07</td>
<td></td>
</tr>
<tr>
<td>CV Diabetes HbA1c not at goal (18-100yrs)</td>
<td>Satisfied</td>
<td>Result</td>
<td>02/26/07</td>
<td></td>
<td>High</td>
<td></td>
<td>02/26/07</td>
<td></td>
</tr>
<tr>
<td>CV Diabetes HbA1c not at goal (18-100yrs)</td>
<td>Satisfied</td>
<td>Result</td>
<td>02/05/06</td>
<td></td>
<td>High</td>
<td></td>
<td>02/05/06</td>
<td></td>
</tr>
<tr>
<td>CV Diabetes HbA1c not at goal (18-100yrs)</td>
<td>Satisfied</td>
<td>Result</td>
<td>04/20/06</td>
<td></td>
<td>High</td>
<td></td>
<td>04/20/06</td>
<td></td>
</tr>
<tr>
<td>CV Diabetes HbA1c not at goal (18-100yrs)</td>
<td>Satisfied</td>
<td>Result</td>
<td>12/01/05</td>
<td></td>
<td>High</td>
<td></td>
<td>12/01/05</td>
<td></td>
</tr>
</tbody>
</table>

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Results: Quality and Net Savings

- **13.3% cost savings** achieved for patients enrolled ≥ six months, when compared to case-matched control population

<table>
<thead>
<tr>
<th>Quality Measure</th>
<th>Medium Target</th>
<th>Max. Target</th>
<th>VM IPC Performance</th>
<th>Quality Goal Exceeded</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of patients with poorly controlled diabetes (Lower=Better)</td>
<td>24.91%</td>
<td>20.19%</td>
<td>9.8%</td>
<td>Yes</td>
</tr>
<tr>
<td>% of patients with cardiovascular condition who have well controlled LDL (Higher=Better)</td>
<td>64.74%</td>
<td>69.59%</td>
<td>70.59%</td>
<td>Yes</td>
</tr>
<tr>
<td>% of patients with hypertension who have well controlled blood pressure (Higher=Better)</td>
<td>64.97%</td>
<td>72.26%</td>
<td>71.58%</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Our Vision: Build-To-Order Instrument Sets

Did you know that the Sterile Processing team processes 52,271 surgical instruments per day? Many of these instruments are not even used during an operation. The rule is, if it travels into the OR, it must be sterilized. Once processed the instrument set returns to a shelf in what looks like a huge warehouse, to sit for days, weeks, or months.

It is the future vision of “Build-to-Order” that instrument sets will be customized for the surgeon and procedure to ensure that the OR team receives only what they want for each case. In February a 3P event was held to begin designing this future state. Build-to-Order is a multi-year goal, and ultimately it will reduce our instrument pan inventory by 70% - or 700 tons – the equivalent of 100 elephants! Next steps for this major project include data collection on surgeon preference for each case with a pilot phase planned in Neurosurgery.
BTO in Sterile Processing and Operating Room (3 KEs)

<table>
<thead>
<tr>
<th>Focus</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decrease assembly time of surgical instruments along with surgical</td>
<td>Decrease instrument assembly time by up to 42%</td>
</tr>
<tr>
<td>instrument set-up time in the OR</td>
<td></td>
</tr>
<tr>
<td>Decrease inventory of instruments for Laminectomy cases</td>
<td>Inventory of the Laminectomy case reduced by 26% ($16k to $11.8k)</td>
</tr>
<tr>
<td>Specific focus of events:</td>
<td>Instrument set-up time reduced significantly:</td>
</tr>
<tr>
<td>• BTO information flow for Laminectomy cases KE</td>
<td>• Minor set (19 mins to 20 secs)</td>
</tr>
<tr>
<td>• External set-up for Craniotomy KE</td>
<td>• Craniotomy (24:09 to 2:34)</td>
</tr>
<tr>
<td>• External set-up of the Minor Set KE</td>
<td>• Laminectomy case (24:09 to 2:29)</td>
</tr>
</tbody>
</table>
## Build To Order Results

<table>
<thead>
<tr>
<th>EVENT</th>
<th>OLD</th>
<th>NEW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Craniotomy</td>
<td>SPD Set Up = 34:00 min</td>
<td>SPD Set Up = 18:27 min</td>
</tr>
<tr>
<td></td>
<td>OR Set Up = 24:09 min</td>
<td>OR Set Up = 2:34 min</td>
</tr>
<tr>
<td>Laminectomy</td>
<td>SPD Set Up = 34:00 min</td>
<td>SPD Set Up = 20:15 min</td>
</tr>
<tr>
<td></td>
<td>OR Set Up = 24:09 min</td>
<td>OR Set Up = 2:29 min</td>
</tr>
<tr>
<td>Minor Set</td>
<td>OR Set Up = 19:21 min</td>
<td>OR Set Up = 0:20 sec</td>
</tr>
</tbody>
</table>
Leadership Requirements: Sustaining the Transformation

1. Set priorities that align with the vision
2. Use VMPS tools & methods
3. Lead change
4. Allocate resources to VMPS
5. Require accountability
6. Implement standard work for leaders
Set Priorities that Align with the Vision

Long Term Vision

5 year Plans

Annual Goals

KPO Priorities

Clinic Priorities

Section Priorities
World-Class Management

The World-Class Management System is a leadership system that provides focus, direction, alignment, and a method of management for daily work.
Daily Management: Leaders Have Two Jobs

1. Run your business
2. Improve your business
Visual Controls

ED production board
Daily Accountability

Have daily huddles with your team

Example: Inpatient Orthopedics

Example: Health Information Services
Specifies the actions to be taken each day to focus on the processes in each leader’s area of responsibility.
Leaders Need to Be Idea Coaches

• Support staff in working on their ideas, but don’t do it for them
• Encourage root cause thinking
• Be straightforward with feedback
• Ask lots of questions to draw out creativity and critical thinking

This will be a big shift for some managers (i.e. being a coach and not the key problem-solver and rescuer!)
VMPS Education

- Intro to VMPS
- VMPS General Education
- VMPS Leadership Training
- VMPS Certification
- VMPS Fellowship
Respect for People refers to how we treat each other as we work together to create the perfect patient experience.
Top 10 Ways to Show Respect to People

1. **Listen to understand.** Good listening means giving the speaker your full attention. Non-verbal cues like eye contact and nodding let others know you are paying attention and are fully present for the conversation. Avoid interrupting or cutting others off when they are speaking.

2. **Keep your promises.** When you keep your word you show you are honest and you let others know you value them. Follow through on commitments and if you run into problems, let others know. Be reliable and expect reliability from others.

3. **Be encouraging.** Giving encouragement shows you care about others and their success. It is essential that everyone at VM understand their contributions have value. Encourage your co-workers to share their ideas, opinions and perspectives.

4. **Connect with others.** Notice those around you and smile. This acknowledgment, combined with a few sincere words of greeting, creates a powerful connection. Practice courtesy and kindness in all interactions.

5. **Express gratitude.** A heartfelt “thank you” can often make a person’s day and show them you notice and appreciate their work. Use the VM Applauso system, a handwritten note, verbal praise, or share a story of “going above and beyond” at your next team meeting.

6. **Share information.** When people know what is going on, they feel valued and included. Be sure everyone has the information they need to do their work and know about things that affect their work environment. Sharing information and communicating openly signals you trust and respect others.

7. **Speak up.** It is our responsibility to ensure a safe environment for everyone at VM, not just physical safety but also mental and emotional safety. Create an environment where we all feel comfortable to speak up if we see something unsafe or feel unsafe.

8. **Walk in their shoes.** Empathize with others, understand their point of view, and their contributions. Be considerate of their time, job responsibilities and workload. Ask before you assume your priorities are their priorities.

9. **Grow and develop.** Value your own potential by committing to continuous learning. Take advantage of opportunities to gain knowledge and learn new skills. Share your knowledge and expertise with others. Ask for and be open to feedback to grow both personally and professionally.

10. **Be a team player.** Great teams are great because team members support each other. Create a work environment where help is happily offered, asked for and received. Trust that teammates have good intentions. Anticipate other team members’ needs and clearly communicate priorities and expectations to be sure the work load is level loaded.
A commitment to continuous improvement.

Real changes. Real results.

Results of VMPS over the last decade have started many health care professionals' careers at Virginia Mason. Virtually every staff member of the Virginia Mason Health Network reports on average 50% of their time with patients, compared with an average of 17% elsewhere. Physicians see more patients during the day with more time to focus on the patient during the night; the time to record lab test results has been reduced by two-thirds. Meanwhile, the medical center has saved $1 million in supply expense in a single year, with increased patient safety and quality professional liability insurance cost decreased 40% since 2000. Virginia Mason has even increased overall costs due to increased patient care, while improving medication distribution from the moment of physicians’ order to availability for administration from as few as ten minutes.

Success at Virginia Mason has attracted national attention. For each of the last three years, Virginia Mason has ranked among Leapfrog’s Top Hospitals. Hospital administrators around the country have expressed interest in VMPS, and hundreds have traveled to Seattle to learn more. The region’s leading health care systems have formed strategic alliances with Virginia Mason to develop and implement VMPS as a coordinated health care system. The idea is to foster health care for more patients at lower cost, then improve and expand the system.

Learn more.

You are invited to find out more about Virginia Mason Medical Center’s continuing efforts to improve health care for all at VirginiaMasonMedicalCenter.org or VirginiaMason.org.

To find more information about The Leapfrog Group, visit leapfroggroup.org.
Chosen By Businesses:

PBGH
PACIFIC BUSINESS GROUP ON HEALTH

LOWE'S
Let's Build Something Together™

Walmart
Save money. Live better.
Surgical Warranty

Hip and Knee Replacement Surgery

• Virginia Mason first in region to offer this protection

• Kicked off with business leaders, media at Seahawks game

• Expands opportunity for more businesses to access our high-quality, bundled care
Flu Vaccination “Fitness for Duty”

Do we put patient first?
Compelling science
Staff resistance
Staying the course
Organizational Pride
VMMC Influenza Vaccination Rates

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From
• Provider First
• Waiting is Good
• Errors are to be Expected
• Diffuse Accountability
• Add Resources
• Reduce Cost
• Retrospective Quality Assurance
• Management Oversight
• We Have Time

To
• Patient First
• Waiting is Bad
• Defect-free Medicine
• Rigorous Accountability
• No New Resources
• Reduce Waste
• Real-time Quality Assurance
• Management On Site
• We Have No Time
Requirements for Transformation

- Sense of Urgency
- Visible & Committed Leadership
- Shared Vision
- Aligned Expectations
- Technical & Human Dimensions of Change
“In times of change, learners inherit the earth, while the learned find themselves beautifully equipped to deal with a world that no longer exists.”

- Eric Hoffer