Cancer Centre Design Concepts: The Alberta Experience

Brenda Hubley
Executive Director Community Oncology and Provincial Practices

Mona Udowicz
Director Quality, Safety, and Patient Experience
Presentation Overview

• Radiation Therapy Corridor Project
• Healing environment and patient experience
• Radiation Therapy Corridor Centre Design
• How the built environment influences and is influenced by process and practice
Radiation Therapy Corridor Project

- Federal/Provincial Partnership
- Three new RT sites
  - Lethbridge 2010
  - Red Deer 2014
  - Grande Prairie 2019
Healing Environment

A physical environment and organizational culture and practice that:

• Supports recovery
• Creates a nurturing and therapeutic
• Reduces stress
• Supports self service and control

“You are safe here, you will be cared for here”
Healing Environment

“Environment” by definition: the conditions and influences that affect the growth, health, progress, etc., of someone or something

Our goal: to create a healing environment that is patient centred supports both patients and providers.

- Research tells us that it enhances staff productivity and satisfaction
- In general, the needs of patients aligns with provider needs

“When it works for patients it works for us”
General Cancer Design Concepts

• Reception needs to be located near the main entry
  – Wheelchair
• Privacy
• Washrooms
• Technology
• “Positive distractions”
• Choice of furniture
• Supportive Artwork
General Design Concepts

Color

• Neutral colours generate a feeling of warmth and calm
• Complementary accents of bright color create areas of interest

Finishes

• Wood grain
• Solid surfaces
  – Durability and perception of cleanliness
General Design Concepts

Lighting
• Natural light and access to windows
• Recessed, indirect, patient controlled

Flooring
• Way finding and safety
• Create perception of shorter distances
General Considerations

• Increased electrical and data outlets at standing height
• Utility rooms with electrical tacking
• TVs
• Soundproofing
• Artwork
Medical Day Unit

• Location
  – Access to natural light and windows
  – Private and semi-private spaces

• Furniture
  – Heated seat recliners
  – TVs
  – Guest spaces
Vault Design
Vault Design
Vault Design
General

- Utility rooms with electrical track for equipment charging
- Comfortable waiting room furniture
- Patient teaching spaces with furniture with tablet arms
- Internet access
- Electrical outlets at standing height in patient areas
- Washrooms
Courtyard
Transitioning from the old to the new!
Preparing the Team for Change

- Involved them in as many decisions as possible
- Envision future state work flows – process maps
- Mock clinics and treatments to “feel” the space
- Human Factors review
  - the physical space and how the team would interact with the environment
- Modified Failure Modes Effect Analysis (risk mitigation)

Create a Team Vision!
Team Performance

Team performance management is the concept of adjusting the composition, context or direction of a team or work group in order to increase the effectiveness of the team or group!

O'Donnell, 2001a
Mapping the Future State

- Involved the entire team
- Creates shared understanding
- Solved many longstanding issues
- Process map out what is not working

“Leave our bad habits behind”
Co-created Shared Goals

• Work as a team to deliver high quality person centred care!
• Move towards a paperless environment
• Optimize all team members contributions by standardizing roles and expectations

• Take Time to Celebrate – to say goodbye to the old space and honor the memories and the great work that had been done there
Human Factors Review

• The goal of the AHS Human Factors team is to use human factors science to develop timely, valuable, and evidence-based solutions that reduces risk and contributes to the design of a high-quality and safe healthcare system.

• Our vision is a healthcare system with no preventable harm.
Human Factors Review

Two days of mock clinics/treatments allowed a thorough evaluation of how the staff would interact with the space. Many modifications were made to the future state process maps,

- where equipment is kept
- how supplies were standardized
- Wayfinding and signage
- Handrails – posed a safety issue
- Chemo/drug labeling and storage
- Infection Prevention and Control
Main Reception

- Multiple waiting rooms not clear as to their functioning
- Name each waiting room based on function and provide signage i.e., “Clinic waiting room”
  - Include artwork on the wall that could be used as a landmark to direct patients “go to the waiting room with the flower on the wall”
Main Reception

- Handrail is only installed on one side of hallway
  - Potential injury if patient was using the metal rail for support and slipped
- Include handrail above all metal rails for patient support
Outpatient Clinics – Exam Rooms

• ‘Perceived’ patient privacy a concern with exam rooms with large windows & see-through blinds
  – Install privacy curtain on window wall
  – Frost the glass to allow natural light into the room without impacting privacy
• Need intuitive room #’s on doors and included on the distress form
  – Must match nurse call system
Risk Assessment – Going paperless!

- Modified Failure Modes Effect Analysis
## Modified Risk Assessment

<table>
<thead>
<tr>
<th>Potential Failure Modes - Listed by Process Step</th>
<th>Severity</th>
<th>Occurrence</th>
<th>Detectability</th>
<th>RPN</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Process Step - Patient seen in OPD by RO</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 RT req not received in RT - leads to treatment delay (maybe doesn't even get treatment)</td>
<td>5</td>
<td>2</td>
<td>4</td>
<td>40</td>
</tr>
<tr>
<td><strong>Process Step - RT Clerk books CT sim/pt ed in MO</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Chemo coordination not correct - leads to treatment not as protocol</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td><strong>Process Step - Patient is scanned and tattooed</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Setup info not in room - leads to all sorts of problems (require secondary monitor with keyboard in ct suite)</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>64</td>
</tr>
</tbody>
</table>
Lessons Learned inform Grande Prairie Cancer Centre

• Human Factors from the CACC team were at the design table
  – Redesigned the RT Vault – shelf space, monitor placement, workflow, spaghetti diagrams, patient experience
  – Exam rooms – Redesigned to be more conducive to having difficult conversations
  – Systemic Therapy – Chemo Chair Space more inviting and calming and far less “clinical”

• Flexibility for the future
  – Rapidly advancing technologies
  – Paperless environments
  – Changing accreditation standards
Questions and Comments?