Mapping a New Direction
Using Process Maps to Improve your business and your forms
Outline

• Workshop goals
• Introduction
• Tools (map styles and conventions)
• Analysis
• Examples
Workshop Goals

- to understand the uses and benefits of process maps
- to provide an overview of different types of maps
- to describe basic process analysis
- to practice drawing two common types of process maps
- to introduce a common symbol set and outline common mapping conventions
Business Process Definition

Processes are how people within an organization collaborate in order to accomplish a goal. Essentially everything we do in an organization involves or contributes to some type of process.

Processes describe:

- what we do
- where we do it
- how we do it
- who does it
What is Process Mapping?

Process mapping is a tool that is used to understand, analyze and document business activities and flow in an organization and assist in identifying opportunities for improvement.

A process map displays the sequential steps involved in converting a specific input into the required output.
Organizational Relationship Map

Forms Management Program

Chris Mazurkewich
EVP & CFO

Jitendra Prasad
SVP

Contracts, Purchasing & Supply Management

Kelly Halseth
Provincial Lead
Forms Management Program

- Analyst (1.0 FTE)
  (former DTHR)
- Analyst (1.0 FTE)
  (former DTHR)
- Analyst (1.0 FTE)
  (former DTHR)
- Analyst (1.0 FTE)
  (former Calgary)
- Analyst (1.0 FTE)
  (former Capital)

Health Information Mgmt
- content compliance
  - electronic health records initiatives

Information Technology
- informatics
- eForms strategies
- network/applications support
- web services/Forms Portal

Quality Culture & Practice Development
- policy
  - knowledge management

Quality Performance Improvement
- patient safety
  - process improvement

Data Integration, Measurement & Reporting
- data standards
  - data dictionary
- data collection methodologies

All other Departments & Services
Process and Forms Content Experts (Subject Matter Experts)

Anticipate a strong partnership with these major stakeholders
Thank God you’re a man.
Benefits

- Enables everyone to “see” the process the same way
- acts as a training and educational tool for new and existing staff and helps reduce procedural errors
- focuses stakeholders on the process itself
- builds understanding between cross functional work areas
- provides a “current state” upon which to base future improvements
- identifies objective measurements and metrics for ongoing evaluation and future improvement activities
- identifies existing workarounds, rework loops and information gaps
- illustrates opportunities for improvement
- improves compliance with, or provides documentation for, quality and regulatory standards (SOX, C-SOX, CCHSA, JCAHO, OH&S, etc)
The Fundamental Rule of Process Work

Challenge Everything
Man's mind, once stretched by a new idea, never regains its original dimensions

- Oliver Wendell Holmes
Tools

- Top Down Diagrams
- SIPOC
- Cross-functional Diagrams
- Flowchart (Visio, Graham Process Charting)
- UML (Universal Mark-up Language)
- Ishikawa Diagrams (fishbone drawings)
**Top Down Process Map**

- High Level (also called 20,000 ft, level 0, Top-down maps, Relationship maps, Organizational charts, SIPOC diagrams)

**When:**

- you want to understand process triggers; customer-supplier relationships; show what the organization provides to its internal and external customers and understand “context.”
Process development
- Establish boundaries
- Determine stakeholders
- Observe processes
- Draw Map
- Confirm map

Design/Revise
- needs assessment
- forms cataloguing and control
- design new forms
- revise existing forms
- consolidate & standardize
- eliminate obsolete forms
- write specifications

Quality Testing
- teach validation concepts
- prepare validation
- conduct process validation
- conduct forms validation
- analyze test results

Print forms
- print POD forms
- print warehoused forms
- manage inventory of externally produced forms
- write production specifications
Watch for

- Confusion/disagreement about who the customers or suppliers are; inputs/outputs
- What the areas major functions are
- Interfaces (critical connections) to the rest of the organizations
- Disagreement about how the area “fits” in the organization
- How well the requirements for each input/output are understood by the supplying/receiving organizations/areas and how well those requirements are being met?
Laying the Groundwork

SIPOC
• Stands for
  • Suppliers
  • Inputs
  • Process
  • Outputs
  • Customers

• May add “requirements”
Major steps in constructing a SIPOC

Work BACKWARDS

- Define the customers of the outputs
- Define the major outputs of the process
- Define the major steps of the process
- Define the inputs necessary for the process to work
- Define the suppliers of required inputs
- If useful, define the requirements
Exercise 1

Construct a SIPOC for an expense claim process
### Drawing Symbols

#### Basic symbol set

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Represents</th>
<th>Example</th>
</tr>
</thead>
</table>
| ![Activity symbol](image) | Activity | Data is entered  
Purchase approved  
Cut PO  
ISO 9004.4 |
| ![Decision Point symbol](image) | Decision Point | Yes/No  
Agree/Disagree  
Pass/Fail  
ISO 9004.4 |
| ![Document symbol](image) | Document | Purchase Requisition  
IV Record  
Expense Claim |
| ![Start/Stop symbol](image) | Start/Stop  
Input/Output | From (other map)  
To (other map)  
A need is identified  
ISO 9004.4 |
| ![On-page Connector symbol](image) | On-page Connector | Go to another part of the flowchart |
| ![Arrow symbol](image) | Arrow | Shows the direction of flow taken by the process, through all the other symbols.  
ISO 9004.4 |
| ![Delay symbol](image) | Delay | Waiting for a service  
Report sitting on a desk |
Do

- Define the beginning and end
- Use a basic, standard set of symbols
- Collect data from those doing the work
- Use a skilled facilitator
- Go See (Gemba)
- Document problems and capture opportunities as you go (in parking lot)
- Embed attributes as you go (cost, quality, time)
- Map the process as it actually happens
- Follow the process across functions and departments
- Ask Questions
Don’t

• Begin before you define the beginning and end
• Work in a vacuum
• Map the process as you think it should happen
• Restrict the process to the activities of one department
• Get bogged down in debate
• Insist on perfection. At some point the map is **good enough**
Cross Functional Process Map

- Mid Level (also called 10,000 ft, level 1 or 2, Cross functional, deployment)

When:
- You want to illustrate the functions, steps, sequences of steps, who performs the steps, inputs and outputs for a particular work process. Use when you want to illustrate the people/process interface and/or value producing activities. These maps can establish or assign clear accountability for activities and outputs and can help determine what to measure and where to measure it.
Cross Functional Process Map

Customer
- Completes Form Action Request
  - Process Mapped
    - Form Designed
      - Proof and Review
        - Approved?
          - Yes
            - Pre-flight
              - In-house production?
                - Yes
                  - Pick, print and ship to customer
                - No
                  - Vendor production
                    - Vendor production
          - No
            - Vendor production

Forms Design
- Form Designed
  - Proof, Revisions & Edits
    - Approved?
      - Yes
        - Pre-flight
      - No
        - Vendor production

Forms Production
- In-house production?
  - Yes
    - Pick, print and ship to customer
  - No
    - Vendor production

Customer pays bill
Major Steps in a Cross Functional Diagram

- Identify your process stakeholders/players (people or functional areas).
- List them down the left hand side of the paper starting with the process customer at the top, in order based on the closeness of their relationship to the customer.
- Draw horizontal lines between each process stakeholders, using a double line if they are external to your organization (customer, supplier, regulatory body).
- Write out the process steps on the sticky notes and begin placing them in the swim lanes. Move left to right.
- Once you have set out all the process steps in the correct swimlanes connect them with lines and arrowheads showing the direction of input. Concurrent activities should be aligned vertically and shared activities should be drawn on the swim lane.
Exercise 2

• Draw a cross functional diagram using the process outlined on the SIPOC diagram.
  – Draw swimlanes down the left hand side
  – Add process players
  – Place sticky notes in the correct swimlane
  – Draw arrows connecting the process steps and showing the “flow”
Watch for

- Areas of reported bottlenecks, errors
- Backward loops (are they correcting errors instead of preventing them?)
- Processes that loop back to earlier departments
- Opportunities to move activities from one department to another or combine activities
- Handoffs: generally speaking, the more handoffs (inputs/outputs that cross functional boundaries) present, the more redundant, or non-value added activities
- Disconnects (missing or deficient inputs or outputs)
- Inputs or outputs that don’t feed into any other steps
- Missing or implied steps, inputs or outputs
Detailed Flowcharts

Low Level (also called 5,000 ft, level 3 or 4, Workflow, or “painfully detailed”)

When: When you want to illustrate detailed tasks, sequence of tasks, quality control points, decisions, inputs and outputs for a particular activity.

A flowchart is a graphical representation of a process. It represents the entire process from start to finish, showing inputs, pathways and circuits, action or decision points, and ultimately, completion.
Detailed Process charts
Graham Process Charts

PSY

workaround
Do not let what you cannot do prevent you from doing what you can.
Flowchart Modelling

- **Major steps in Flowchart Modelling**
- Describe the process to be charted and define the process boundaries.
- Start with the process trigger (business need that drives the process)
- Keep the descriptions concise. If necessary, cross reference other maps or documentation.
- Note down each successive action taken. Actions should be described in as few words as possible.
- Pay attention to the questions (diamonds). These are often critical control points: places in the process where multiple alternative flows appear, based on questions, inspections etc.
- Validate the process chart with others involved in the process.
- Identify responsibility for each step.
Exercise 3

- Draw a detailed flowchart of the expense claim process
Symposium Expense Claim Process

Need for Vegas Symposium expenses to be reimbursed

- Complete 00152 Expense Claim form
- Attach relevant receipts and statements
- Submit to boss for approval

- Employee removes related expense from claim
- Boss approves strategy but denies expense

- Boss questions $300 bar tab as valid expense
- Employee explains strategy of buying rounds of Margaritas for workshop participants in exchange for good feedback

- Approved:
  - Yes: Boss signs form and submits to Finance
  - No: Go to Store Shopping Process

- Finance A/P Clerk enters data

- Is it Cheque-run day?
  - Yes: A/P Supervisor conducts cheque run. Cheque cut
  - No: Wait till Thursday

- Cheque given to employee
Watch for

- Areas of reported bottlenecks, errors
- Backward loops (are they correcting errors instead of preventing them?)
- Opportunities to combine activities
- Repetition, redundant, or non-value added activities
- Disconnects (missing or deficient inputs or outputs)
- Inputs or outputs that don’t feed into any other steps
- Missing or implied steps, inputs or outputs
Analysis

- Questions to Ask
- Critical Analysis
- Ishikawa Diagrams
<table>
<thead>
<tr>
<th>What is being done</th>
<th>Why is it being done</th>
<th>What else is being done</th>
</tr>
</thead>
<tbody>
<tr>
<td>Who is doing it</td>
<td>Why are they doing it</td>
<td>Who Else could do it</td>
</tr>
<tr>
<td>When are they doing it</td>
<td>Why then</td>
<td>When else could it be done</td>
</tr>
<tr>
<td>Where is it being done</td>
<td>Why there</td>
<td>Where else could it be done</td>
</tr>
<tr>
<td>How is it being done</td>
<td>Why that way</td>
<td>How else could it be done</td>
</tr>
</tbody>
</table>
If everyone is thinking alike, then somebody isn't thinking.  
George S. Patton

What to look for

Examine

• Loops
• Hand-offs
• Repetition and duplication
• Black holes
• Unused data
• Overlapping processes
• Multiple inspections
• Sequential work that could be parallel
• Lack of critical controls
• Unnecessary paperwork or delays
• Gaps in communication or information
Why?

- Use 5-Why technique to determine root cause
Ishikawa Diagram

Environment
- No admitting staff in main hospital
- Admitting
  - Poor wayfinding
  - Poor lighting
- Lack of visual systems
  - Mail/Dist
  - Charts

People
- Workload
  - Portering office
  - Poin of sale
- Lack of education
  - Organizational issues
  - Quotas
  - Hot picks
  - Lack of follow-up
  - Nonstock

Materials
- Delivery location
  - Nonstandard storage
  - Linen
  - Medications
  - Night cupboard
- Downtime
  - Nonutilized
  - Poor planning

Equipment
- Check-in/out
  - Vehicle bookings
  - Missing parts
  - Theft
  - Wireless
  - Paging systems

Method
- Dist. work
  - Scheduling
  - No online booking
- Pharmacy
  - Dialysis pts
  - Theft
Metrics

- Time: value, cycle, waiting, value added, non-value added
- Volumes: transactions/hr, units/day, %
- Rates or costs: computed, fixed, per unit
- Equipment used: cost
- Value added: value added, business-value added, non-value added, pure waste

Advantages
- Illustrates value or cost of activity
- Can show bottlenecks, idle time, delay
- Basis for measuring improvement
Examples

• Emergent Equipment Requisition
• H1N1
• Clinical Breast Health Program
**REQUEST FOR APPROVAL EMERGENCY EQUIPMENT PURCHASE**

Zone VP/SVP approval is required prior to the submission of this request.

Please complete all information prior to submission and e-mail completed forms to:

AHSPurchaseEmail@ahenbphs.ca

A tracking number will be provided for you for follow up.

Please do not solicit pricing or proposals directly from vendors. If assistance is required in determining full costing or requirements please identify this on the form and Contracting, Procurement & Supply Management (CPSM) will provide follow up and support.

| Tracking # | OFFICE USE ONLY |

<table>
<thead>
<tr>
<th>Date Requested (dd/mm/yyyy)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Requestor Name</td>
<td></td>
</tr>
<tr>
<td>Requestor Title</td>
<td></td>
</tr>
<tr>
<td>Site</td>
<td></td>
</tr>
<tr>
<td>Approved by VP/SVP (print)</td>
<td></td>
</tr>
<tr>
<td>Deliver To Address (include postal code)</td>
<td></td>
</tr>
<tr>
<td>Receiving Department:</td>
<td></td>
</tr>
<tr>
<td>Requestor Name:</td>
<td></td>
</tr>
<tr>
<td>Contact Number:</td>
<td></td>
</tr>
</tbody>
</table>

**Description of Request**

(Please provide relevant background information – rationale for request, risk assessment. Additional documentation can be attached as required.)

What is the impact on patient care or employee safety if this item is not purchased?

What other options have been considered prior to submission of funding request i.e. repair, surplus, transfer of equipment? Please provide details.

<table>
<thead>
<tr>
<th>Request for:</th>
<th>Equipment Replacement</th>
<th>Additional Equipment</th>
<th>Repair</th>
</tr>
</thead>
</table>

1. **Are funds available for this purchase?**
   - **No**
   - **Yes – You MUST complete the “PROCUREMENT REQUEST FORM” for your request to be processed**

2. Equipment cost (estimate of total value of purchase):

3. Other costs (training/renovation/install/service or consumables):

4. Total Funding Request:


<table>
<thead>
<tr>
<th>Request for:</th>
<th>☐ Equipment Replacement</th>
<th>☐ Additional Equipment</th>
<th>☐ Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Are funds available for this purchase?</td>
<td>☐ No</td>
<td>☐ Yes – You MUST complete the &quot;PROCUREMENT REQUEST FORM&quot; for your request to be processed</td>
<td></td>
</tr>
<tr>
<td>2. Equipment cost (estimate of total value of purchase):</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Additional</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Emergent Equip Req process

A need for equipment is identified

Is the need emergent?

No → Complete Equipment Requisition → Send to Equipment Planning → Wait a long time

Yes

Is funding available?

Yes → Complete Equipment Requisition

No

Complete Emergency Equipment Requisition 00483
Emergent Equip Req - after

Alberta Health Services

Emergency Equipment Requisition

For Office Use Only

Tracking #

This form is used for emergent equipment requests for which funding is NOT available. If you have access to funding, complete the Equipment Requisition #0434. Approval from a Zone VP/SVP is required prior to the submission of this request. Please complete all of the following information and email to DMS_intake@albertahealthservices.ca. Attach relevant background information (rationale for request, equipment location, options, risk assessment). A tracking number will be provided to you for follow up. Please do not solicit pricing or proposals directly from vendors. If assistance is required in determining full costing or requirements please identify this on the form, and Contracting, Procurement & Supply Management (CPSM) will provide follow up and support.

<table>
<thead>
<tr>
<th>Date (yyyy-mm-dd)</th>
<th>Requestors Name</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title</td>
<td>Email</td>
<td></td>
</tr>
<tr>
<td>Site</td>
<td>Department</td>
<td></td>
</tr>
<tr>
<td>Delivery address</td>
<td>City/Town</td>
<td>Postal Code</td>
</tr>
<tr>
<td>Receiving department</td>
<td>Receiver Name</td>
<td>Phone</td>
</tr>
</tbody>
</table>

**Description of Request**

- Request for (check one)
  - Equipment replacement
  - Additional Equipment
  - Repair

What is the impact on patient care or employee safety if this item is not purchased?

What other options have been considered prior to submission of funding request (i.e. repair, surplus, transfer of equipment)? Please provide details.

**Funding Request Details**

- Equipment cost (estimate of total value of purchase)
- Other costs (training/renovation/install/service or consumables)

Total Funding Request

- Zone VP/SVP approval (print name)
- Signature

For Office Use Only
This form is used for emergent equipment requests for which funding is NOT available. If you have access to funding, complete the Equipment Requisition #00483. Approval from a Zone VP/SVP is required prior to the submission of this request. Please complete all of the following information and email to DMS_Intake@albertahealthservices.ca. Attach relevant background information (rationale for request, equipment location, options, risk assessment). A tracking number will be provided to you for follow up. Please do not solicit pricing or proposals directly from vendors.
### H1N1 Form

**ADULT (17 yrs or older)**

**Screening Worksheet**

**Primary Assessment/Registration**

**Step 1:** Enter Demographics Information

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Enter date of birth (DOB) and gender.</td>
</tr>
<tr>
<td>2</td>
<td>Enter race/ethnicity.</td>
</tr>
<tr>
<td>3</td>
<td>Enter occupation.</td>
</tr>
<tr>
<td>4</td>
<td>Enter current medications.</td>
</tr>
<tr>
<td>5</td>
<td>Enter current allergies.</td>
</tr>
<tr>
<td>6</td>
<td>Enter current medical conditions.</td>
</tr>
</tbody>
</table>

**Step 2:** Enter Symptoms Information

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Enter symptoms (e.g., fever, cough, sore throat).</td>
</tr>
<tr>
<td>2</td>
<td>Enter duration of symptoms.</td>
</tr>
<tr>
<td>3</td>
<td>Enter severity of symptoms.</td>
</tr>
</tbody>
</table>

**Registration and Feedback**

**Step 3:** Complete Registration Information

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Enter full name.</td>
</tr>
<tr>
<td>Address</td>
<td>Enter current address.</td>
</tr>
<tr>
<td>Phone</td>
<td>Enter current phone number.</td>
</tr>
</tbody>
</table>

**Step 4:** Complete Feedback Information

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feedback</td>
<td>Enter feedback (e.g., suggestions for improvement).</td>
</tr>
<tr>
<td>Date</td>
<td>Enter date of feedback submission.</td>
</tr>
</tbody>
</table>

**Note:** This form is intended for use by healthcare professionals to assess and register patients for H1N1 treatment.
In this process, the form begins at the point of screening; it is unclear how the form is intended to move from screening to Primary Assessment.

The remainder of the data is collected by a nurse at Primary Assessment.

Physician would need to handwrite a prescription for antiviral medication, likely needing to refer frequently to dosing chart due to relative unfamiliarity with antiviral dosing.

At Pharmacy another form would be introduced to document antiviral dispensing activity. Another set of patient demographics data elements would need to be collected.
• Who requires which data elements?
• Is the data required to move drive the process or document activity?
• What data is required for each step of the process?
• Why is the data being collected in one location? Is it all needed at that location?
• Who provides the data? Is it collected verbally, in writing, electronically?
• To whom does the form-filling burden fall?
• How is the form completed? How is it transported, stored and filed?
• Do copies of the form need to follow the patient? Be sent with the ambulance? Remain at the site?
• What are our reporting requirements to Alberta Health & Wellness? When is the data to be reported?
IAC Core Process

Pandemic H1N1 (2009)

There is no “form” at screening since these activities do not need to be documented.

Forms enter the process just prior to where data is required and collect information from the most practical and available resource.

The design of 09533 IAC Registration and Antiviral Prescription form solves 3 problems simultaneously:

1) collects needed information for Health Information Management Registration process

2) It has a preprinted prescription with dosing recommendations built right in which saves the Physician time and may improve patient safety and outcomes.

3) Because it collects specific antiviral dispensing data for Pharmacy and the Antiviral Working Group there is no need for another form to be introduced at this point in the process. Medications can be dispensed to sick patients in a very timely manner.

Bonus: AHS Pharmacy leaders worked with the Alberta College of Pharmacists to communicate to local pharmacies across the province about the development of this preprinted prescription form. Community pharmacies were asked to accept this as an official prescription, meaning that patients could collect their prescription at the IAC, or have it filled at a local pharmacy. Further, the local pharmacies didn’t have to collect any patient demographic information prior to dispensing, because the data was already on the form!
# H1N1 Savings

<table>
<thead>
<tr>
<th>Activity</th>
<th>Time Before (min)</th>
<th>Time after (min)</th>
<th># of occurrences</th>
<th>Time Saved (hrs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capture patient demographic data for registration</td>
<td>1.8</td>
<td>0</td>
<td>10,290</td>
<td>309</td>
</tr>
<tr>
<td>Collect symptomology and relevant health history</td>
<td>3</td>
<td>0</td>
<td>10,290</td>
<td>515</td>
</tr>
<tr>
<td>Capture patient demographic data for pharmacy dispensing</td>
<td>1.8</td>
<td>0*</td>
<td>3333</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>1.8</td>
<td>0*</td>
<td>3333</td>
<td>924 hrs</td>
</tr>
</tbody>
</table>

* because this form was designed to collect this data once, and use it twice (once for registration and one for antiviral dispensing), this didn’t require any extra work on behalf of the patient either.
Summary

- Business processes are a collection of linked tasks that consume inputs, add value and produce an output for a customer.
- Most often span multiple functions or departments.
- Maps make the process visible.
- To improve a process, you must first understand it.
- An accurate as-is map is the most important part of a process improvement exercise.
- Ask lots of questions.
- Process analysis identifies critical problems and opportunities for improvement.
- Re-designing can achieve ambitious goals.
- Value is added.
- **Challenge EVERYTHING**.