Fundamentals of Workflow Analysis and Process Redesign

Unit 10.5b

Process Analysis

Welcome to the second lecture of the Process Analysis unit.

Topics – Unit 10.5

- Objectives of Process Analysis
- Process Analysis skills and knowledge
- Steps for Process Analysis
- Clinical Practice Processes
- Process Variations and Exceptions
- Identifying EHR functionality from Process Analysis

In this second lecture on Process Analysis we will focus on:

•Common Process Variations and Exceptions in the clinic,
• and
•Identifying EHR functionality from Process Analysis

Process Variations and Exceptions

Variations: processes used by the clinic

Exceptions: errors or common odd things that com up during the process.

Remember from lecture 1 that:

Process variations are processes used by the clinic, i.e., the way a particular clinic does something, the clinic's process. They are called variations because they vary from clinic to clinic. There should be a process diagram for the variation or variations used by the clinic.

AND

Process exceptions are errors or common odd things that happen up during the clinic's processes. They are important to note, because EHR functionality needs to cover expected exceptions, and needs to have a generic way to handle the unexpected.

On the following slides, we will list common process variations and exceptions for processes used by most clinics.

Common Process Variations & Exceptions: Patient Check-in

Patient check-in variations

- New patient
- Existing patient
- Walk-in

Patient check-in exceptions

- No insurance / non-covered service
- Change in insurance information

Common process variations for Patient check-in include

New patient intake and registration

Existing patient intake and registration

Walk-in intake and registration

Exceptions for the Patient check-in include

No insurance / non-covered service

Change in insurance information

Common Process Variations & Exceptions: Patient Visit

Patient visit variations

- Referral out needed
- Procedure needed
- Diagnostic test needed

Patient visit exceptions

- Emergent reason to stop visit
- non-covered service needing separate visit
- Need to be seen by different provider

There are many variations for patient office visits. A few of them are

Referral out needed

Procedure needed

Diagnostic test needed

Likewise, there are many possible exceptions that may occur during an office visit, some of them include

Emergent reason to stop visit

non-covered service needing separate visit

Need to be seen by different provider

Common Process Variations & Exceptions: Prescription

Prescription variations
- Paper
- Electronic
- Re-fill call-in needed
- Other call-in needed

Prescription exceptions
- No insurance / non-covered service
- Samples provided
- Prescriptions to multiple pharmacies
- Prescription can't be filled at pharmacy

The common variations on the prescription process include

Paper prescriptions provided during office visit

Electronic prescriptions provided during office visit

Re-fill call-in prescription needed

Other call-in prescription needed, for example a patient on an antibiotic is out of town and not getting better calls their provider and asks for a different prescription.

Common exceptions, or errors that can occur during a prescription process include

No insurance / non-covered service

Samples provided

Prescriptions to multiple pharmacies

Prescription can't be filled at pharmacy

Common Process Variations & Exceptions: Received Documentation

Received documentation variations

- Paper
- Electronic
- Triggers patient contact

Received documentation exceptions

- Inadequate patient identification
- Inadequate source identification
- Unintelligible or ambiguous information

Filing or otherwise associating documents received from external sources, for example, emergency room visits, hospital discharge summaries, reports from procedures and diagnostic tests with a patient's records can be a lot of work for a primary care clinic. Common process variations include the format of the received document (paper or electronic), and whether or not the information in the document necessitates follow-up with the patient. For example, a discharge summary that lists a discharge prescription for a medication that is redundant with one the patient was taking prior to hospitalization, a hospitalization for a poorly controlled chronic condition, or a hospital discharge summary that indicates necessary follow-up with the primary care provider.

Common exceptions with external documents include:

Inadequate patient identification

Inadequate source identification

Unintelligible or ambiguous information

Common Process Variations & Exceptions: Labs

Lab variations
- Sample taken in clinic and test done in clinic
- Sample taken in clinic, test done externally
- Sample and test done at central lab

Lab exceptions
- Bad sample – need another
- Results not received
- Lab results not physiologically possible

Common Lab variations

Sample taken in clinic and test done in clinic

Sample taken in clinic, test done externally

Sample and test done at central lab

Lab exceptions include

Bad sample – need another blood draw, for example

Lab results not received

Lab results not physiologically possible

Common Process Variations & Exceptions: Diagnostic Tests

Diagnostic test variations

- Test done in clinic
- Test done externally
- Report expected
- Image or test result data expected

Diagnostic test exceptions

- No insurance / non-covered service
- Test error / unintelligible results
- Results from external test not received

Diagnostic tests vary widely depending on the type of practice. Common diagnostic test variations include:

Test done in clinic

Test done externally

Report expected

Image or test result data expected

Diagnostic test exceptions include:

No insurance / non-covered service

Test error / unintelligible results

Results from external test not received

Common Process Variations & Exceptions: Referral

Referral variations

- Paper via patient
- Paper provider to provider
- Electronic
- Multiple referrals

Referral exceptions

- Referee does not accept the referral

Generally, but not always, primary care providers refer out to specialists, and specialists receive requests for consults from primary care providers and from other specialists.

Referral variations include

Paper referral communicated by the patient

Paper provider to provider

Electronic referral

Referrals for one patient to multiple providers

Referral exceptions include

Referee does not accept the referral

Common Process Variations & Exceptions: Consult

Consult variations

- Paper / phone request
- Electronic

Consult exceptions

- No insurance / non-covered service
- Consult no-show

Consult variations include

Paper / phone request

Electronic

Consult exceptions include

No insurance / non-covered service

Consult no-show

Common Process Variations & Exceptions: Disease Management

Disease management variations
- Paper
- Electronic

Disease management exceptions
- Insufficient data
- Data errors
- Care fragmentation
- Contraindications

Disease management is a process where a provider follows established clinical guidelines to care for a patient with a chronic condition(s). The guidelines describe what tests should be performed to assess how the patient is faring and their frequency as well as treatment. Disease management can be accomplished with paper charts or with electronic decesion support. Disease management exceptions include:

Insufficient data

Data errors

Care fragmentation

Contraindications

Common Process Variations & Exceptions: Billing

Billing variations
- Paper (superbill as source)
- Electronic
- Where coding is done
- Billing & collections done externally

Billing exceptions
- No insurance / non-covered service
- Claim denied
- Coding errors
- Data errors

Billing is a core process of any practice. Billing variations include:

Using a paper superbill, i.e., the sheet that providers use to check of tests and write diagnoses on during the visit, as the source

Electronic data recorded by providers during the visit as the source

Where the coding is done

Whether or not billing and collections are done externally

Billing exceptions include

No insurance / non-covered service

Claim denied

Coding errors

Data errors

Steps for Process Analysis

1. Start with process Inventory & diagrams
   - Context diagram showing clinic functions
   - Flowchart for each process
2. For each process, list
   - Variations applicable to the clinic
   - Exceptions
3. Report findings
   - Major observations
   - EHR functionality necessary to support clinic functions
   - Opportunities for improvement

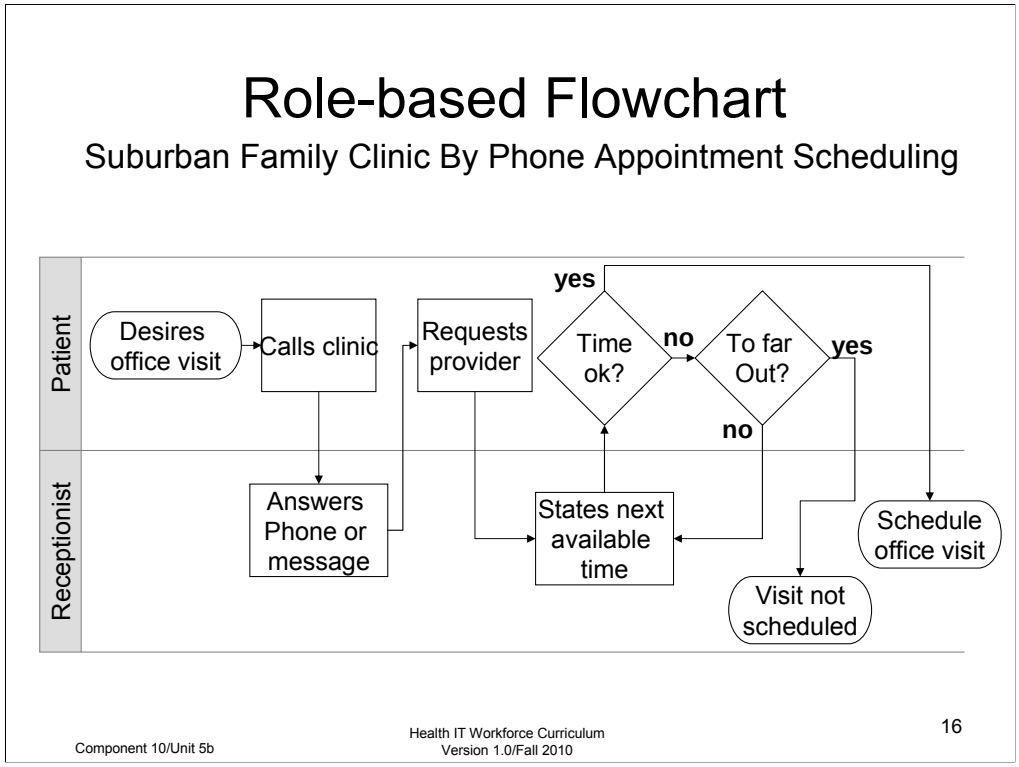
In summary, a main part of process analysis is creating an inventory of processes that a practice uses, and identifying the variations of those processes employed by the practice, and the likely exceptions. These things together help identify the EHR functionality.

Process Analysis Example

As a process analyst working with Suburban Family Clinic, you have listed appointment scheduling on the process inventory. Read the "By Phone Appointment Scheduling Scenario" in the course materials.

1. draw a role-based flow chart of the process
2. indicate the process variations used by Suburban Family Clinic
3. make a list of exceptions likely to occur with this process

Let's work an example. After these instructions, pause the slide show and work this example on your own. We will go over the results on the next few slides. Suburban Family Clinic, like most other clinics today, uses a phone scheduling process to schedule patient office visits. As a process analyst working with Suburban Family Clinic, you have listed appointment scheduling on the process inventory. Read the "By Phone Appointment Scheduling Scenario" in the course materials. **First**, draw a role-based flow chart of the process. **Second**, indicate the process variations used by Suburban Family Clinic. **Third**, make a list of exceptions likely to occur with this process. Pause the slides now.



In the scenario, Patient Patty wakes up at 5:30 am feeling awful and decides to call for an appointment with her primary care provider. She calls Suburban Family Clinic. The important steps to diagram are those that directly interface with the clinic in some way. In this scenario, we do not need to represent anything about what time the patient calls, or why they decided to call, it is just important to diagram the trigger event, i.e., the patient desires an office visit. And the step that interfaces with t he clinic, i.e., the patient calls the clinic.

Next in the scenario, Receptionist Ronald answers Patient Patty's call and Patient Patty asks Receptionist Ronald for the soonest appointment with Doctor Dan. Here, the steps answering the phone and requesting a provider are added to the diagram.

Next in the scenario, Receptionist Ronald states that 9:30 is the earliest possible appointment with Doctor Dan and Patient Patty says that 9:30 is fine. Receptionist Ronald adds her to the schedule for 9:30. Each of these steps, finding and stating the next available time, the patient decision that the time is ok, and scheduling it are important interactions and are added to the diagram.

Some questions that you might have:

1) Why did we leave out the detail of Patient Patty's symptoms and her deciding whether or not to call for an appointment? These details are not important to the clinic's process or the interaction between the patient and the clinic, thus, they do not provide any information important to our analysis of the clinic process.
2) Why did we include detail about whether or not the next available time is ok? This information signifies a possible branch point in the process, i.e., that the receptionist needs to look for additional times, and that the times might not be agreeable to the patient. This information also signifies information needs by the receptionist. Note the decisions are necessary to outline the possible ways in which the process concludes.

Process Variations & Exceptions

Suburban Family Clinic By Phone Appointment Scheduling

Appointment scheduling variations

- By phone

Appointment scheduling possible exceptions

- Receptionist doesn't answer, patient leaves message
- Someone other than patient calls
- Requested provider not available
- Available appointment time slots not acceptable

In the scenario the appointment scheduling variation used by the clinic appears to be "By phone scheduling". In your interactions with the clinic, the critical thing to discern is "Is this the only variation used by the clinic?" and "What other variations occur?". IMPORTANTLY: process variations are processes used by the clinic. Process exceptions are errors or common odd things that com up during the process.

Possible exceptions that may occur during the appointment scheduling process include:

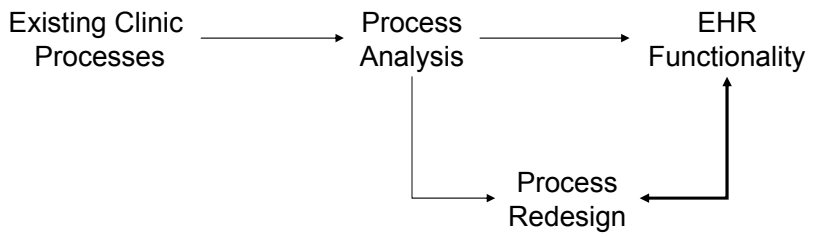
Receptionist doesn't answer, patient leaves message

Someone other than patient calls

Requested provider not available

Available appointment time slots not acceptable

Translating Analysis Results to EHR Functionality



Some of the information gained from process analysis translates directly into EHR Functionality. For example, the process variations, flow control between variations, and handling process exceptions. This is the information that we have covered thus far in this slide set. Often, there are opportunities to make process changes, including leveraging technology. Such changes are decided during process redesign (covered in Unit 6) and also result in identification of necessary EHR functionality. In-turn, an analysts knowledge of available EHR functionality informs process redesign, i.e., the analyst who is familiar with available functions draws on this knowledge to suggest ways in which technology can be leveraged to improve processes. Use of technology in process redesign is covered in Unit 6.

From Process Analysis to EHR Functionality Requirements

1. Process variations → needed functionality
2. Common Process exceptions → needed functionality

The end result of a process analysis is a list of 1) clinic processes, i.e., the process variations used by the clinic, and 2) a list of common exceptions. For example, based on the process analysis, by phone appointment scheduling would be on the list for Suburban Family Clinic as would the listed exceptions.

Example: Process Analysis Results

Read the following Scenarios:

1. By phone appointment scheduling
2. New patient intake and registration using paper chart
3. Existing patient intake and registration using paper chart
4. Receiving and communicating lab results using paper chart

Create a Process and Exception List

Let's work through an example of how to make a process and exception list. After the instructions, pause the slide show and Read the following Scenarios in your course materials:

By phone appointment scheduling

New patient intake and registration using paper chart

Existing patient intake and registration using paper chart

Receiving and communicating lab results using paper chart

Create a Process and Exception List. On the next slide, we will go over the results. Pause the slides now.

Example: Phone Scheduling

Process: by phone scheduling

Exceptions:

- Receptionist doesn't answer, patient leaves message
- Someone other than patient calls
- Requested provider not available
- Available appointment time slots not acceptable

In the scenario the appointment scheduling variation used by the clinic appears to be "By phone scheduling".

Possible exceptions that may occur during the appointment scheduling process include:

Receptionist doesn't answer, patient leaves message

Someone other than patient calls

Requested provider not available

Available appointment time slots not acceptable

Example cont.: Patient Intake

- Processes:
  - New patient intake
  - Existing patient intake
- Exceptions:
  - No insurance / non-covered service
  - Patient has to leave during intake process

The patient intake scenarios indicate the following processes:

New patient intake

Existing patient intake

Process exceptions that might be expected include:

No insurance / non-covered service

Patient has to leave during intake process

Example Cont: Lab Scenario

Processes:

- Lab sample processing at external lab
- Lab sample acquisition – unknown from the scenario
- Receiving lab results
- Communicating lab results

Exceptions:

- No results received
- Results not matchable to a patient
- Results not matchable to a provider
- Results abnormal and require action
- Patient not contactable / not responsive to contact attempts

The receiving and communicating lab results indicates the following processes:

Lab sample processing at external lab

Lab sample acquisition – unknown from the scenario

Receiving lab results

Communicating lab results

Lab process exceptions include:

No results received

Results not matchable to a patient

Results not matchable to a provider

Results abnormal and require action

Patient not contactable / not responsive to contact attempts

After the Process Analysis

- The list of processes and exceptions are compiled together in one document and provide to the clinic.
- This list corresponds to needed EHR functionality
  - Included in process analysis report,
  - ultimately included in a request for proposal intended for EHR software vendors
- Where process diagrams are created as part of the process analysis, they are included in the report.

The results of this process analysis would be compiled together in one document (not possible here on the slides). This might be called a Process Analysis Report. The list of processes and exceptions correspond directly to needed EHR functionality and ultimately will be included in a request for proposal intended for EHR software vendors.

Process Analysis Report Should Include

- Information about the analysis
- Process inventory
- Process variations and exceptions
- Process diagrams
- List of EHR functionality needed for the practice

A process analysis report should include:

•Information about the analysis, for example, the analysts name and organization, dates of time on site, individuals from whom information was received.

•Process inventory

•Process variations and exceptions

•Process diagrams

•List of EHR functionality needed for the practice

•If within the analysts scope of work and training, suggested EHRs that are possible matches for the needed functions.

This concludes the first of two lectures for the Process Analysis unit.

You may go on to the second lecture or stop and return to the second lecture at a later time.