

# Next Generation NCLEX (NGN) Overview

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## Outline

- Project Background
- Assessment of Nursing Clinical Judgement
- NGN Project Overview
- NGN Item Prototypes

# PROJECT BACKGROUND



## The Beginnings

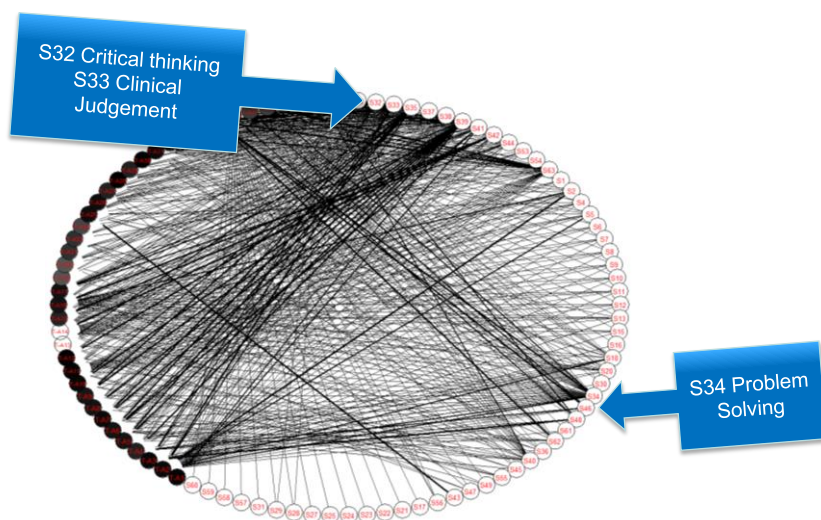
- NEC 2012: Is the NCLEX measuring the right things?
  - Literature review (Muntean, 2013)
    - 200 peer reviewed manuscripts
      - Education regarding critical thinking, clinical decision making, and clinical judgment has become a standard part of nursing curricula
      - 50% of novice nurses were involved in errors of nursing
      - 65% of the errors were attributable to poor clinical decision making skills
      - Only 20% of employers are satisfied with clinical decision making skills of novice nurses



## The Beginnings (cont.)

- Strategic Practice Analysis Pilot Study (2015)
  - Direct observation of nursing activities at a variety of practice settings across the U.S.
  - Focus groups including novice and experienced nurses in the various observational settings
  - Linkage of data to determine strength of correlations between entry-level nurse tasks and nurse skills

## Task and Skill Linkage Example - Client Admission



## The Beginnings (cont.)

- Evaluation of current item bank
  - What are the domains of judgment that can be reliably measured?
  - Do the item types in the current NCLEX item bank adequately measure clinical judgement skills?

## Measuring Clinical Judgment

Item Formats	Clinical Judgment Skills
Multiple choice (MC)	Cue recognition (CR)
Multiple response (MR)	Hypothesis generating/updating (HY)
Drag and Drop (DD)	Communication (CM)
Hot spot (HS)	Consequences/risks (CN)
Audio (AU)	Task complexity (TC)
Graphics (GR)	Time pressure (TP)
Exhibit (EX)	Distractions/interruptions (DI)

## Current NCLEX Item Bank: Domain Distribution

	Cue Recognition	Hypothesis Generation	Communication	Consequences and Risk	Task Complexity	Time Pressure	Distractions and Interruption
Multiple-Choice	Yellow	Yellow	Yellow	Yellow	Yellow	Red	Red
Multiple Response	Yellow	Yellow	Yellow	Green	Yellow	Red	Red
Drag and Drop	Yellow	Yellow	Red	Yellow	Yellow	Red	Red
Hot Spot	Yellow	Yellow	Red	Yellow	Red	Red	Red
Audio	Green	Yellow	Yellow	Red	Red	Yellow	Red
Graphic	Yellow	Yellow	Red	Red	Yellow	Red	Yellow
Exhibit	Green	Red	Red	Red	Red	Red	Red

## Summary

- Clinical judgment is a necessary skill for the novice nurse
- Nurse client care and nurse errors can be improved by enhancing clinical judgment skills in novice nurses
- 2013-14 practice analysis indicated a clear need for a direct, extensive, and explicit assessment of this construct in entry-level nurses

## Summary (cont.)

- Assessing the degree to which NCLEX candidates possess clinical judgment is a critical component of the overall goal of ascertaining whether a nursing candidate is minimally competent.
- Clinical judgment today is indirectly tested in a limited manner through its implicit integration across current NCLEX activity statements.

# ASSESSMENT OF NURSING CLINICAL JUDGMENT

## Development of Clinical Judgement Model

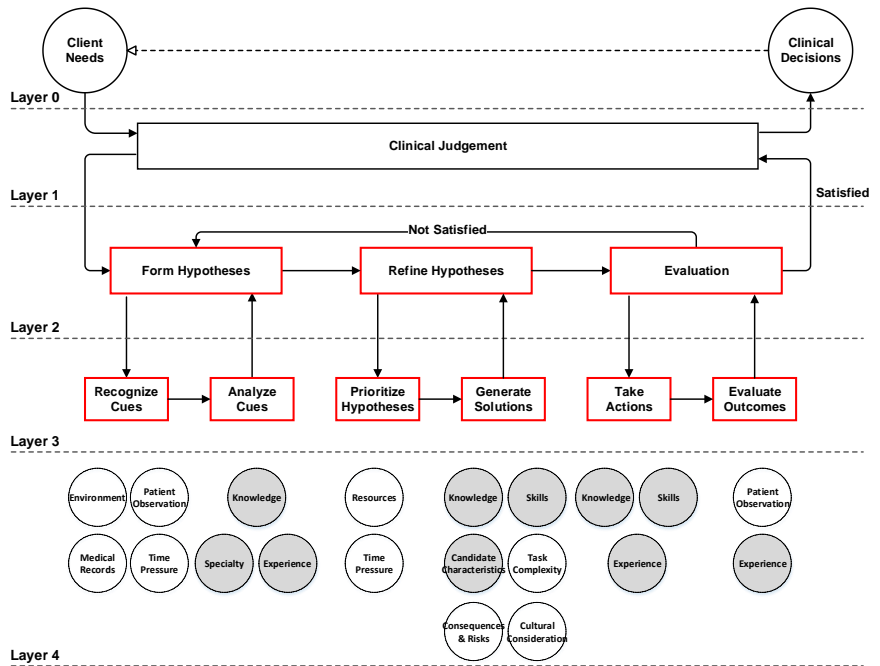
- The project began in January 2015 with development of an operational definition of nursing clinical judgment

*Clinical judgment is defined as the observed outcome of critical thinking and decision-making. It is an iterative process that uses nursing knowledge to observe and assess presenting situations, identify a prioritized client concern, and generate the best possible evidence-based solutions in order to deliver safe client care.*

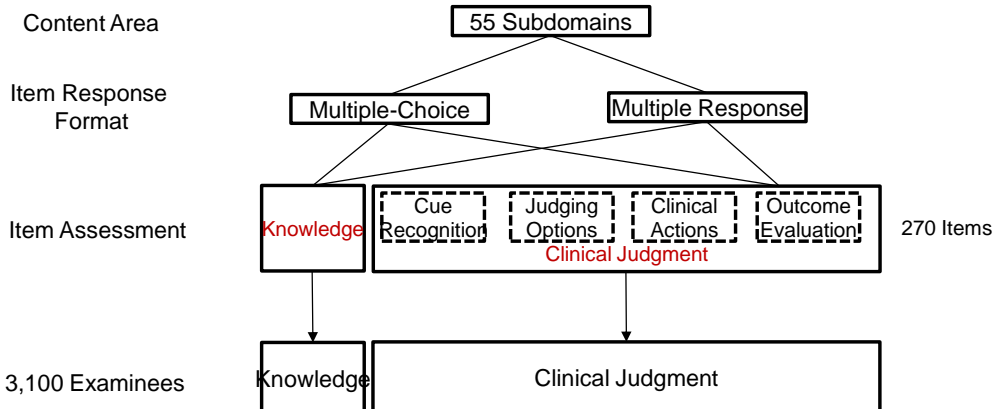
## Development of Clinical Judgement Model (cont.)

- NCSBN research, literature review and pilot studies developed a comprehensive clinical judgment assessment model published in the *Journal Applied Testing Technology*, 2016.
- Dickison, P., Luo, X., Kim, D., Woo, A., Muntean, W., & Bergstrom, B. (2016). Assessing higher-order cognitive constructs by using an information-processing framework. *Journal of Applied Testing Technology*, 17(1), 1-19. Retrieved from [www.jattjournal.com/index.php/atp/article/view/89187/67797](http://www.jattjournal.com/index.php/atp/article/view/89187/67797).

# Clinical Judgment Model

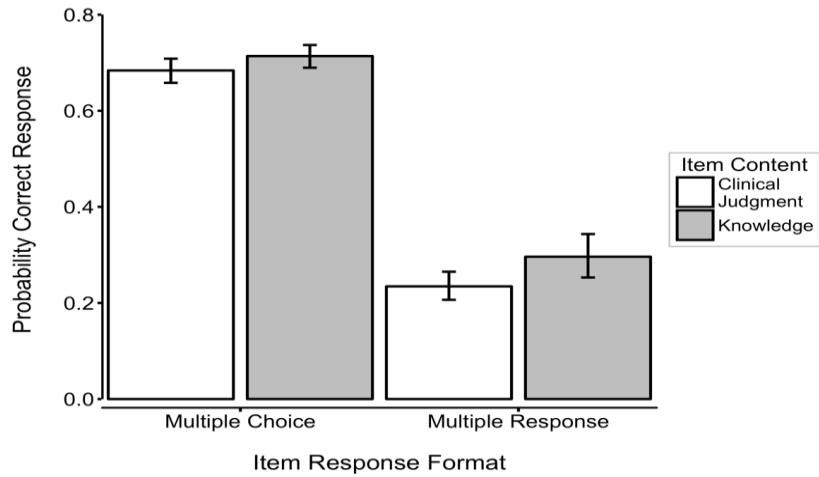


## Pilot Study – Is Clinical Judgement the Same as Content Knowledge?

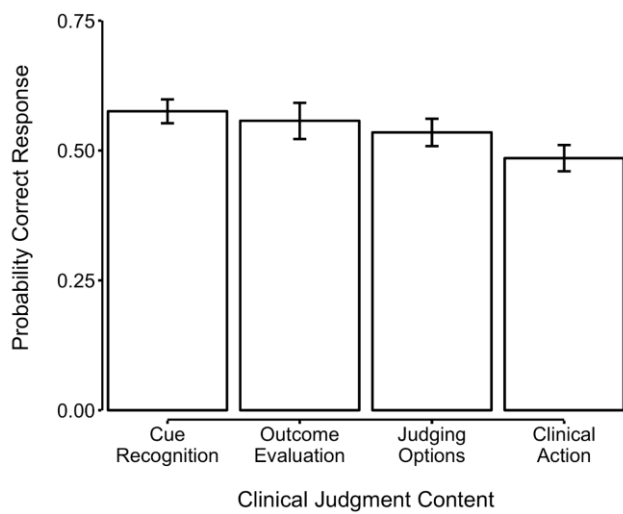




# Results



# Results (cont.)



## Pilot Study Conclusions

- Preliminary findings from the pilot suggested that the attainment of content knowledge does not always translate to possession of clinical judgment skills.

## NGN PROJECT OVERVIEW

# NGN Overview

New item prototypes were identified that possessed the potential to measure layers 2, 3, and 4 of the clinical judgment model.

- Enhanced Hot Spots (HS+)
- Enhanced Multiple Response (MS+)
- Extended Drag and Drop (DD+)
- Cloze items (CL)
- Constructed Response (CR)
- Rich Media Scenario (RMS)
- Dynamic Exhibits (DE)

## New Grid Layout with New Item Types

	Recognize Cues	Generate Hypotheses	Judge Hypotheses	Take Action	Evaluate Outcomes
Enhanced Hot Spot	Green	Red	Yellow	Yellow	Yellow
Extended Multiple Response	Green	Yellow	Yellow	Green	Green
Extended Drag and Drop	Green	Yellow	Green	Green	Yellow
SBAR	Green	Green	Green	Green	Yellow
Cloze Items	Green	Yellow	Green	Green	Green
Constructed Response	Green	Green	Green	Green	Green
Rich Media Scenarios	Green	Green	Green	Green	Green
Dynamic Exhibits	Green	Green	Green	Green	Green

# NGN—Item Prototype Development

- Item prototypes types include:
  - Extended Multiple Response (EMR)
  - Extended Drag and Drop (DD)
  - CLOZE
  - Enhanced Hot Spot (HS)
  - Dynamic Exhibit (DE)
  - Constructed Response (CR)
- Rich media scenario prototypes include:
  - Illustrations
  - Branching items

# NGN—Usability

- A Usability Study with nursing students was conducted to collect feedback on the ability of a candidate to navigate through the item types
- Results from the Usability Study
  - Participants were successful in understanding the tasks being asked of them
  - Memorability was limited to very general and broad aspects of the content

## NGN—Item Type Data Collection (ITDC)

- The first set of NGN prototypes will be included on the July 2017 NCLEX exam as part of a Special Research Section
- A Special Research Section will be included on the NCLEX as part of four consecutive quarters: July 2017, October 2017, January 2018 and April 2018
- Data will be used to determine which items accurately measure clinical judgement and nursing competence

## NGN Research Agenda

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<b>Validity</b>	Red	Red	Red	Red	Red	Red
<b>Item Type Development</b>	Light Blue	Red	Red	Red	Light Blue	Light Blue
<b>Usability</b>	Light Blue	Red	Red	Light Blue	Light Blue	Red
<b>Dimensionality</b>	Light Blue	Light Blue	Red	Red	Red	Light Blue
<b>Scoring</b>	Red	Red	Red	Red	Light Blue	Light Blue
<b>Test Design</b>	Light Blue	Light Blue	Red	Red	Red	Light Blue
<b>Standard Setting</b>	Light Blue	Light Blue	Light Blue	Red	Light Blue	Red

# Communication Plan

- Audiences
- Messaging Themes
- Communication Avenues
- General Timelines
- Speakers Bureau

# NGN ITEM PROTOTYPES

# Extended Multiple Response (EMR)

Read the following case study, then refer to the case study to answer the question.

The nurse is caring for a 62-year-old client who has pneumonia. Findings upon admission:

<b>Medical history</b>	chronic obstructive pulmonary disease
<b>Vital signs</b>	blood pressure 122/84 pulse 118 respirations 28 oral temperature 101.9° F (38.8° C) oxygen saturation 94% on oxygen at 2L/min via nasal cannula
<b>Physical examination</b>	frequent, nonproductive cough; suctioned thick, purulent sputum; wheezes bilaterally on inspiration and expiration, crackles bilaterally in posterior bases; shortness of breath with exertion; digital clubbing; increased anteroposterior chest diameter
<b>Labs</b>	arterial blood gas: pH 7.38, PaCO <sub>2</sub> 50, HCO <sub>3</sub> 23, PaO <sub>2</sub> 78 sputum culture pending

The nurse is assessing the client 24 hours later. How should the nurse interpret the findings? For each finding, click to specify whether the finding is unrelated to the diagnosis, a sign of potential improvement, or a sign of a potentially worsening condition.

Finding 24 hours later	Unrelated to diagnosis	Sign of potential improvement	Sign of potentially worsening condition
Digital clubbing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Oxygen saturation 93% on room air	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Arterial blood gas, pH 7.31	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Frequent, productive cough	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Shortness of breath at rest	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Increased anteroposterior chest diameter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

# CLOZE

Read the following case study, then refer to the case study to answer the question.

The nurse is preparing to administer scheduled medications to a 57-year-old male client for whom the nurse has the following data:

<b>Diagnosis</b>	total knee arthroplasty 24 hours ago
<b>Current vital signs</b>	blood pressure 142/90 pulse 48 respirations 20 oral temperature 99.3° F (37.4° C)
<b>Allergies</b>	ceftriaxone
<b>Medical history</b>	hyperlipidemia, hypertension, osteoarthritis, seasonal allergic rhinitis
<b>Laboratory test results</b>	complete blood count: hemoglobin 14.2 g/dL (142 g/L), platelets 420,000/mm <sup>3</sup> (420 x 10 <sup>9</sup> /L), white blood cell count 10,150/mm <sup>3</sup> (10.2 x 10 <sup>9</sup> /L) chemistry: serum sodium 151 mEq/L (151 mmol/L), serum potassium 4.2 mEq/L (4.2 mmol/L), blood urea nitrogen 18 mg/dL (6.4 mmol/L) coagulation: prothrombin time 12.3 seconds, activated partial thromboplastin time 27 seconds
<b>Diet</b>	low-sodium
<b>Scheduled procedures</b>	knee x-ray in 30 minutes

Scheduled medications to administer
atenolol 25 mg, p.o.
cefazolin 500 mg, I.V.
enoxaparin 30 mg, subcutaneously
hydrocodone/acetaminophen 5 mg/325 mg, 1 tablet, p.o.
pantoprazole 40 mg, p.o.
sertraline 50 mg, p.o.

Which three medications would require clarification prior to administration? Complete the following sentences by choosing from the dropdown lists.

The nurse should not administer the  because .

The nurse should not administer the  because .

The nurse should not administer the  because .

# Extended Drag & Drop (DD)

The nurse is preparing to make room assignments for the eight clients below. What room assignments would result in a safe assignment for each client? Drag each client to an appropriate room and bed. A maximum of two clients may occupy each room. Some clients may require a private room based on their diagnosis or current condition.

Clients		Rooms and Beds	
27-year-old client with lymphoma and a white blood cell count of $3,500/\text{mm}^3$ ( $3.5 \times 10^9/\text{L}$ )	37-year-old client with human immuno-deficiency disease	351-A	351-B
44-year-old client who had an abdominal hysterectomy 8 hours ago	65-year-old client with mild osteoarthritis	352-A	352-B
52-year-old client with hypertension and a potassium level of 3.8 mEq/L (3.8 mmol/L)	20-year-old client with hepatitis C	353-A	353-B
42-year-old client with acute pancreatitis and an elevated serum amylase level	36-year-old client with acute lymphatic leukemia and neutropenia	354-A	354-B
		355-A	355-B

# Hot Spot (HS)

Read the case study, then refer to the case study to answer the question(s).

The nurse is preparing to administer a dose of teriflunomide to a client. The nurse has not administered this medication before and is using a drug reference to review information about the medication.

	Client Information
<b>Medical diagnosis</b>	open reduction internal fixation of tibial fracture 12 hours ago blood pressure 118/78, pulse 68, respirations 14, temperature 98.8° F (37.1° C), oxygen saturation 98% on room air
<b>Current vital signs</b>	multiple sclerosis, <b>osteoarthritis affecting bilateral hands and knees</b> , hyperlipidemia
<b>Medical history</b>	weight 110 lb (50 kg) diplopia, nystagmus, yellowed sclerae intention tremors of hands bilaterally abdomen distended, bulging flanks white blood cell count, $10,500/\text{mm}^3$ ( $10.5 \times 10^9/\text{L}$ )
<b>Physical examination</b>	hemoglobin, 13.5 g/dL (135 g/L) aspartate aminotransferase, elevated alanine aminotransferase, elevated heparin methylprednisolone lovastatin hydrocodone/acetaminophen hydromorphone
<b>Laboratory test results</b>	
<b>Current medications</b>	

	Drug Reference
<b>Medication</b>	teriflunomide
<b>Classification</b>	pyrimidine synthesis inhibitors
<b>Indications</b>	management of relapsing forms of multiple sclerosis
<b>Contraindications/Precautions</b>	live virus vaccinations; active acute or chronic infection; severe immunodeficiency; severe uncontrolled infection; severe hepatic impairment
<b>Adverse reactions/ Side effects</b>	Cardiovascular: hypertension. Respiratory: <b>interstitial lung disease</b> . Hematologic: leukopenia, neutropenia. Neurologic: paresthesia, peripheral neuropathy
<b>Interactions</b>	May ↑ levels and effects of levonorgestrel, <b>may ↑ risk of bleeding with warfarin</b>
<b>Route/Dosage</b>	PO, 7 or 14 mg once daily
<b>Assessment</b>	Assess BP before starting and periodically during treatment, treat hypertension as needed Lab test considerations: Monitor liver function tests within 6 months of starting therapy and monthly after therapy begins.
<b>Implementation</b>	Administer a tuberculin skin test prior to administration; patients with active latent tuberculosis should be treated prior to therapy.

Which client and drug reference information supports your decision to withhold the teriflunomide?

Click in both of the tables to highlight the text that supports your decision. Highlight only the text that supports your decision. To deselect text that you have highlighted, click the text again.



# Dynamic Exhibits & Constructed Response (CR)

Read the case study below. Click the radio buttons to see the client's progress and nursing interventions over time. Then refer to the case study to answer the questions.

The nurse is caring for a client at 40 weeks gestation who is receiving intravenous oxytocin to induce labor.

1100  
  1130  
  1200  
  1230  
  1300  
  1330

<b>Time</b>	1100
<b>Assessment</b>	Maternal blood pressure 122/78, pulse 74 Fetal heart rate 150 with moderate variability Contractions every 5 minutes, lasting 70 seconds, moderate intensity upon palpation Vaginal exam: Cervical dilation 5 cm, 90% effaced, 0 station
<b>Interventions</b>	Repositioned from right lateral to left lateral Reinforced teaching about modified-paced breathing Offered ice chips and clear fluids

At which time point did the nurse intervene incorrectly?

1100  
  1130  
  1200  
  1230  
  1300  
  1330

What was the incorrect intervention?

Enter the intervention that was incorrect in the box below.

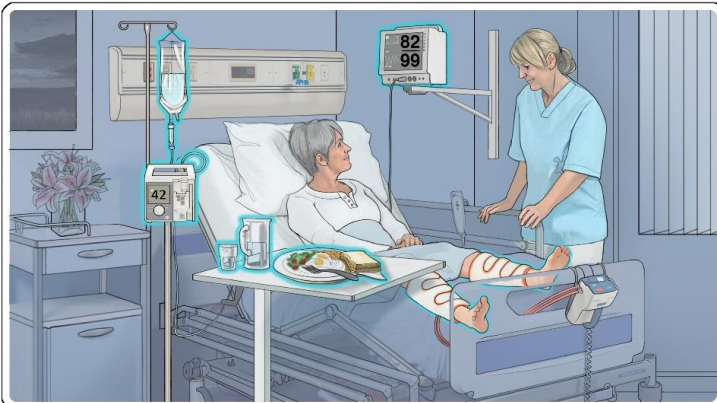
What should the nurse have done instead?

Enter a short description of the intervention the nurse should have implemented instead.

# Rich Media - Illustrated

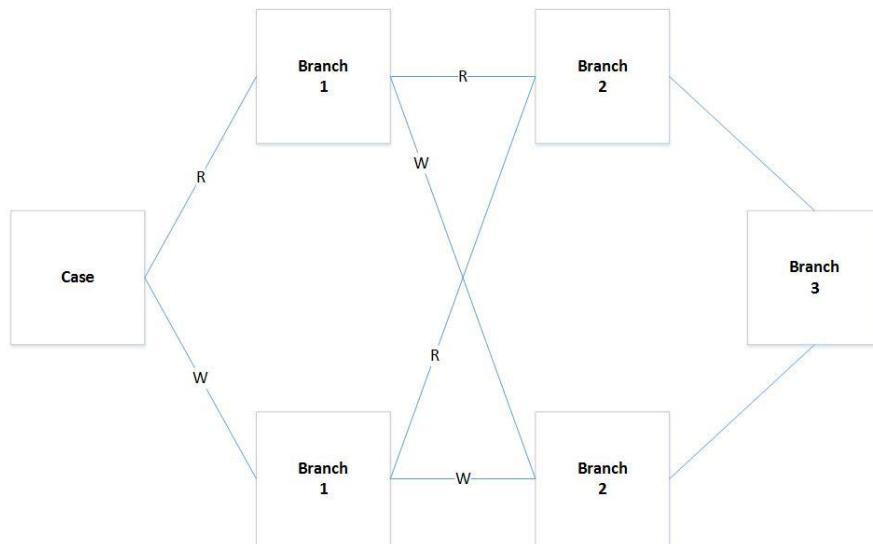
Review the scene below.

The nurse enters the room of a client who is scheduled for right total hip replacement in 2 ½ hours.



Which finding in the diagram should the nurse follow up? Click on the finding.

# Branching



# Questions?