

# Improving EHR User Experience After Go-Live

Dr. Yan Xiao &  
Dr. Adam Probst

# EHR Diagrammed vs. Deployed



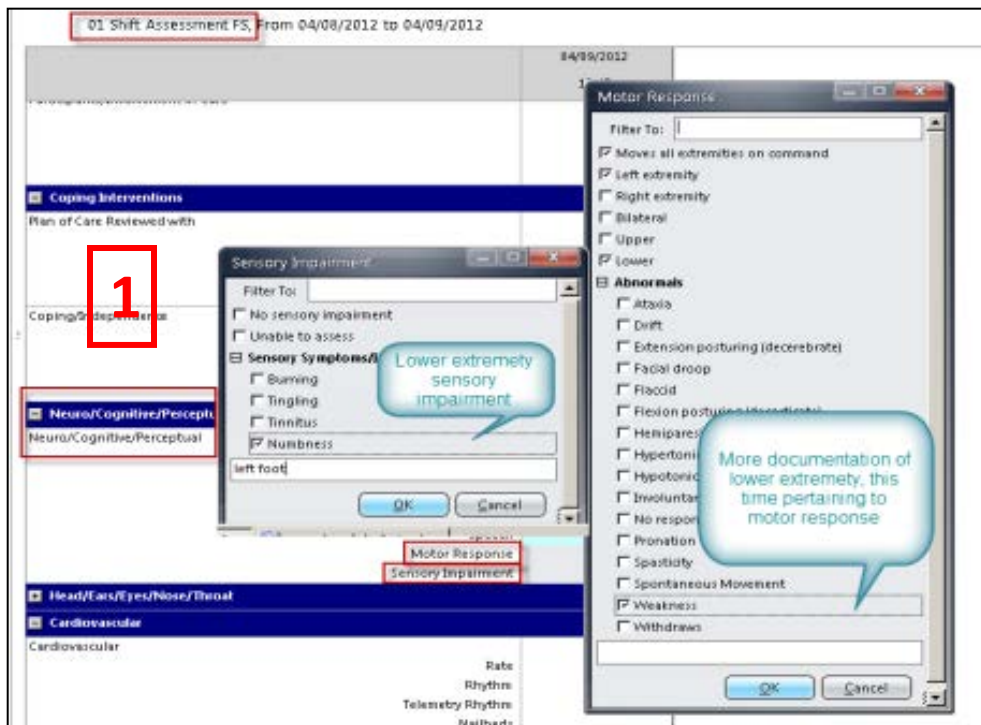
**Computer** in patient room behind couch



**Monitor & Keyboard** installed inside cupboard in patient room (before relocated elsewhere)

# Indication of Anatomic Sites Multiple Times

11 Separate Steps to Complete



# Indication of Anatomic Sites Multiple Times

11 Separate Steps to Complete

01 Shift Assessment FS, From 04/08/2012 to 04/09/2012

Motor Response

Filter To:

Moves all extremities on command

Left extremity

Right extremity

1

01 Shift Assessment FS, From 04/08/2012 to 04/09/2012

2

Assessment Findings

Filter To:

Left

Right

Upper

Lower

Bilateral

Assessment Findings

Warm

Cold

Cool

Hot

Pink

Black

Blotchy

Cyanotic

Dusky

Mottled

Pallor

Red

Ruddy

Erythema

Numbness

Tingling

Normal Sensation

Decreased sensation

Loss of sensation

Ulcerations

Weeping

left lower warm left lower cool to touch

Assessment of lower extremity

# Indication of Anatomic Sites Multiple Times

11 Separate Steps to Complete

# Indication of Anatomic Sites Multiple Times

11 Separate Steps to Complete

01 Shift Assessment FS, From 04/08/2012 to 04/09/2012

Motor Response

Filter To:

Move: all extremities on command

Left extremity

Right extremity

1

01 Shift Assessment FS, From 04/08/2012 to 04/09/2012

Assessment Findings

Filter To:

Left

Right

Upper

Lower

Bilateral

Assessment Findings

Warm

Cold

2

01 Shift Assessment FS, From 04/08/2012 to 04/09/2012

Assessment Findings

Filter To:

No tenderness, swelling or deformity in all extremities

No tenderness, swelling or deformity except

Left

Right

Bilateral

Upper

3

01 Shift Assessment FS, From 04/08/2012 to 04/09/2012

04/09/2012

13:45

Last Bowel Movement

Stool Amount

Stool Color

Stool Consistency

4

Extremity Movement

Filter To:

MAE on command, no obvious deficits noted

MAE on command, no obvious deficits noted except

RUE

LUE

Bilateral UE

RLE

LLE

Bilateral LE

Bilateral UE and LE

Abnormals

Limited ROM

Spontaneous movement, not on command

Flaccid

Weakness

Quadriplegic

Paraplegic

Contractures

Foot drop

Lower extremity pertaining to movement

# Multiple Code Status Orders Resulting from Orderset Design

**Order Summary**

**Order Date: 24-Sep-2013**

**Limited Code**

- Medications - Pressors: Do Not Provide
- Medications - Anti - Arrhythmics: Do Not Provide
- Defibrillation: Provide
- Chest Compression: Provide
- Intubation: Do Not Provide
- NIV (Non-Invasive Ventilation): Provide

**Do Not Attempt Resuscitation/Allow Natural Death (DNAR/AND)**

CODE STATUS	
Full Code	24-Sep-2013 Routine
Limited Code	24-Sep-2013 Routine
Medications - Pressors: Provide Medications - Anti - Arrhythmics: Do Not Provide Defibrillation: Do Not Provide Chest Compression: Do Not Provide Intubation: Do Not Provide NIV (Non-Invasive Ventilation): Provide	

Code Status		0/2	
<input type="checkbox"/> Full Code	18-Nov-2013 Routine	Ordered	18-Nov-2013 17:26

**Code Status:** Full Code (Confirmed) 18-Nov-2013

Code Status		0/2	
<input type="checkbox"/> Full Code	18-Nov-2013 Routine	Ordered	18-Nov-2013 17:09
<input type="checkbox"/> Do Not Attempt Resuscitation/Continue Other Treatment (DNAR/COT)	18-Nov-2013 Routine	Ordered	18-Nov-2013 17:09

**Code Status:** DNAR/AND 18-Nov-2013

# Socio-Technical Perspective of Usability

## EHR User Experience

```
graph TD; A[EHR User Experience] --> B[Infrastructure]; A --> C[Policies]; B --> D[Optimization]; B --> E[On-going system integration]; C --> F[Training]; C --> G[Support];
```

### Infrastructure

(E.g.: response time, downtimes)

### Optimization

(E.g.: new “falls” modules)

### On-going system integration

(E.g.: barcoding)

### Policies

(E.g.: documentation requirements)

### Training

(E.g.: tricks to filter orders)

### Support

(E.g.: helpdesk, mice, keyboards)