

2nd International Conference on

Health Informatics and Technology

July 27-29, 2015 Valencia, Spain

SA1

The Role of Electronic Health Records in Structuring Handoff Communication and Maintaining Situation Awareness among Nurses during Handoff

Presented by: Said Alghenaimi,
RN-MSN, M.Ed-Tech, PhD

Slide 1

SA1 (continue at page 26 of desseratation)
slide 16
User , 7/21/2015

What is Handoff?

HANDOFF

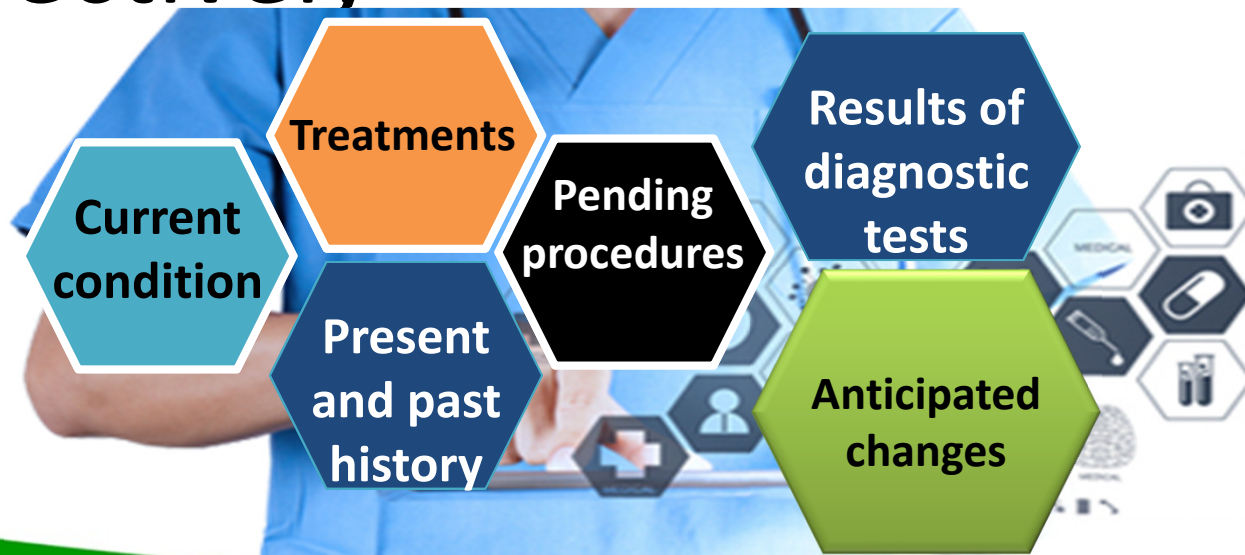


- The transfer of professional responsibility and accountability for some or all aspects of care for a patient, or group of patients, to another person or professional on a temporary or permanent basis.

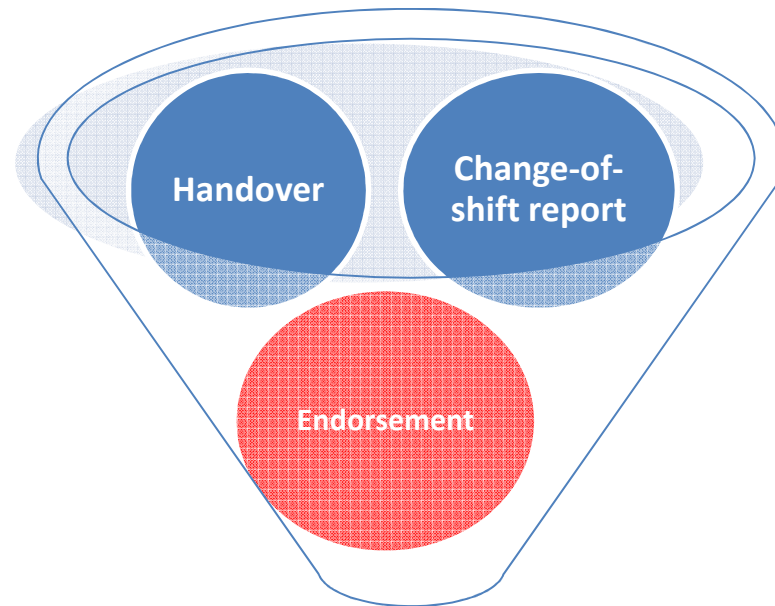
(Australian Commission on Safety & Quality, 2010)

SITUATION AWARENESS

- A common understanding of patient's condition that enable the nurse to assume patient care effectively



HANDOFF INTERCHANGEABLE TERMS



STATEMENT OF PROBLEM

- Studies in Western countries have shown that communication gaps during handoff greatly increase the risk to patient safety
- 80% of serious medical errors in the United States are attributed to breakdown in communication during handoff .

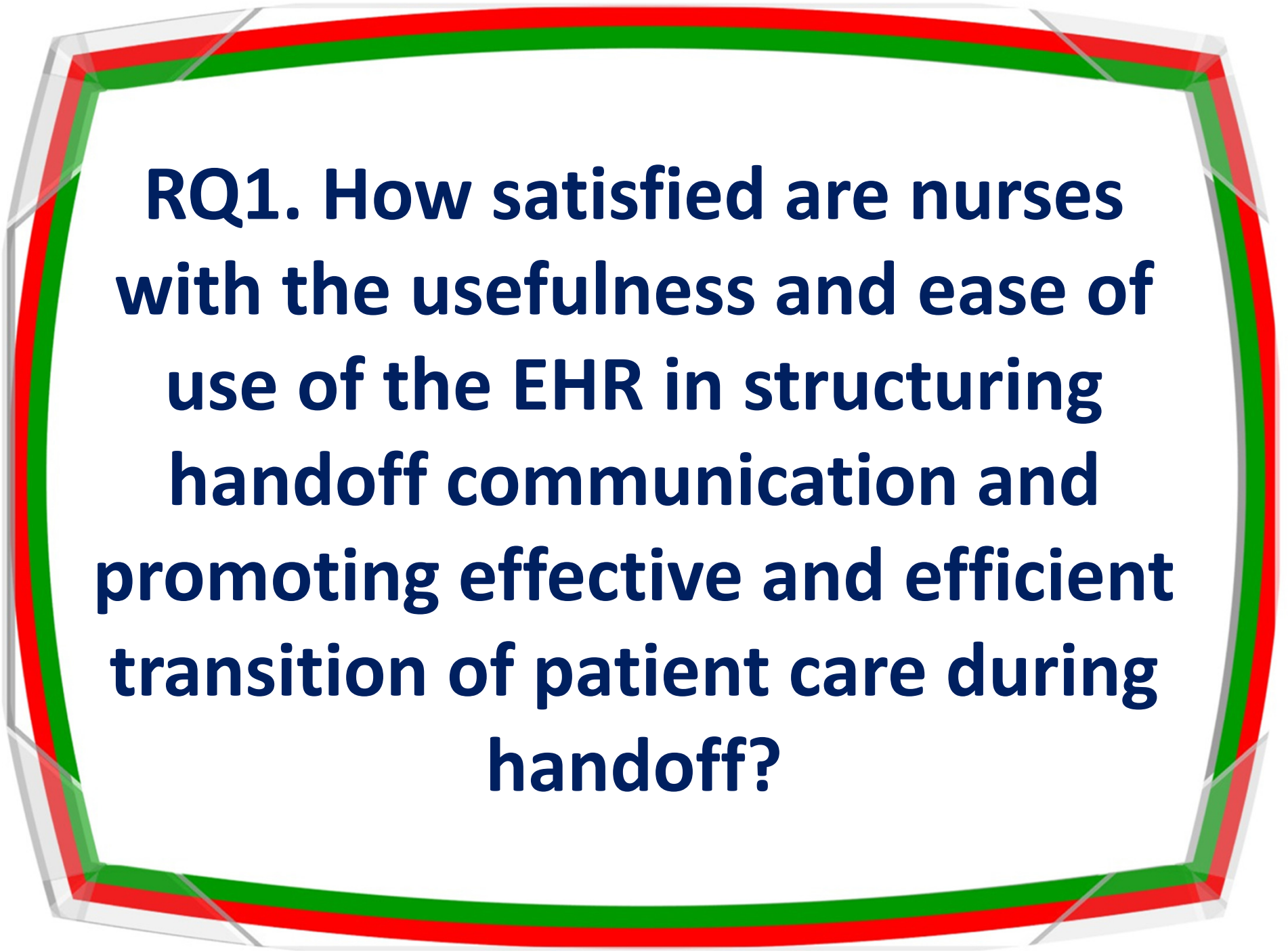
CONT. STATEMENT OF PROBLEM

- It is not known how nurses in Oman utilize the EHRs to facilitate consistent information exchange during handoff in the absence of handoff policy.

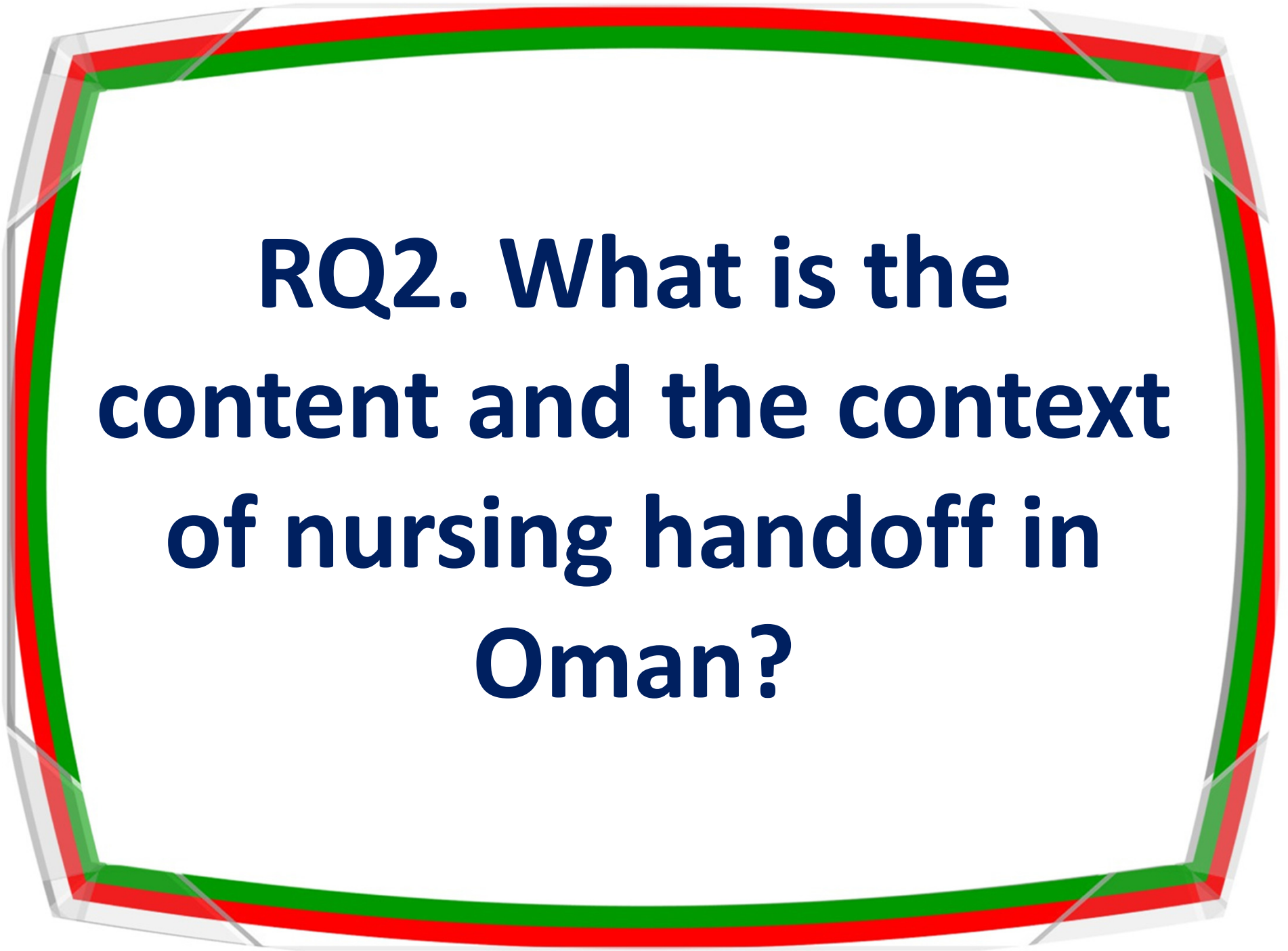
[Al-Shifa 3 Plus](#) 

AIMS OF THE STUDY

1. Assess the nurses' satisfaction with the usefulness and ease of use of the EHR (Al-Shifa).
2. Explore the content and the context of nursing handoff in Oman.
3. Identifies the artifacts that the nurses use during handoff.
4. Explore the strengths and weaknesses of the EHR in supporting quality handoff report.

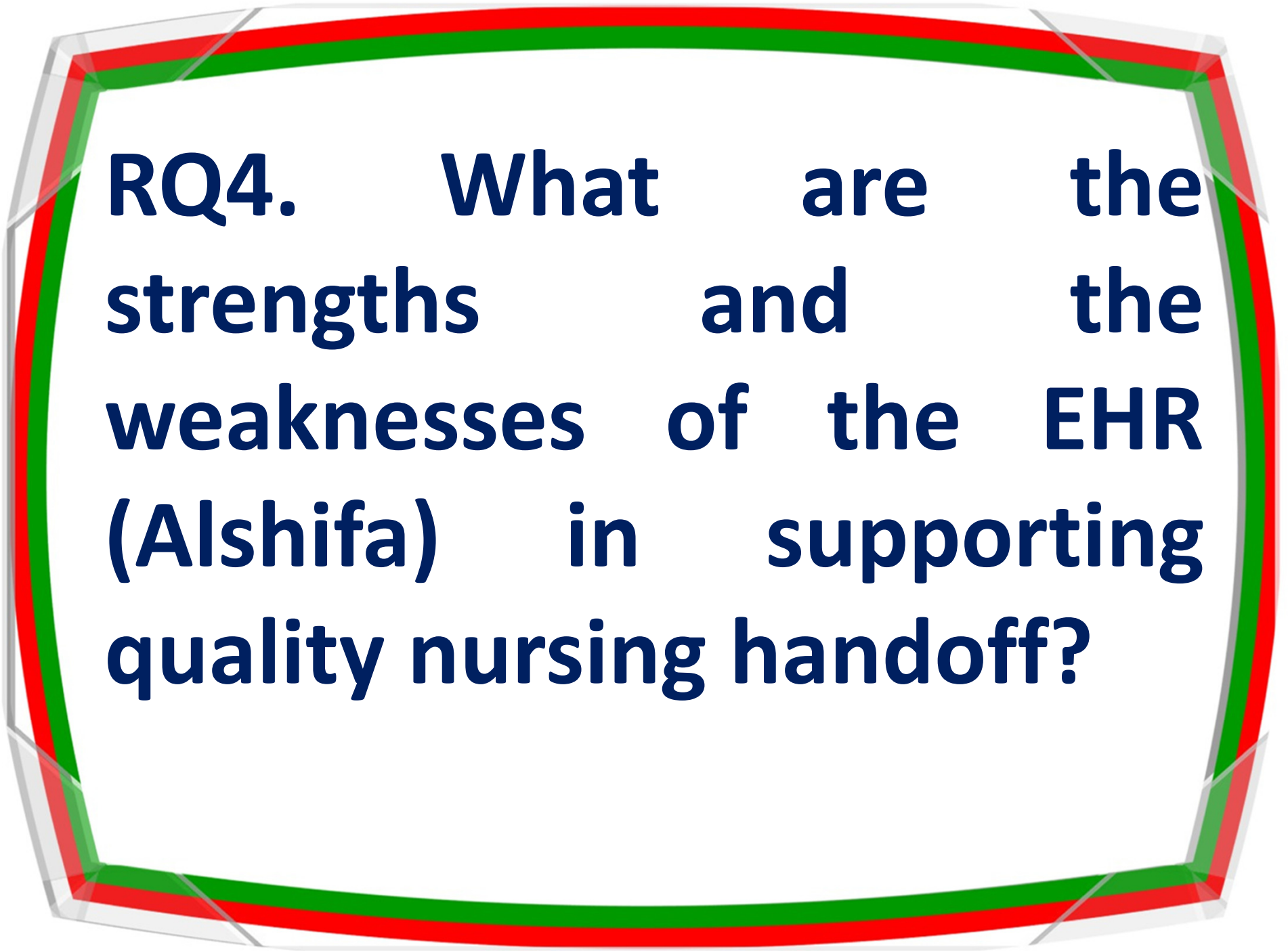


RQ1. How satisfied are nurses with the usefulness and ease of use of the EHR in structuring handoff communication and promoting effective and efficient transition of patient care during handoff?



RQ2. What is the content and the context of nursing handoff in Oman?

RQ3. What artifacts the nurses in Oman use to convey information between shifts? how these artifacts are integrated into the handoff reports?



RQ4. What are the strengths and the weaknesses of the EHR (Alshifa) in supporting quality nursing handoff?

A decorative frame with a red and green border and a white center. The frame is composed of two concentric, slightly irregular rectangular borders. The outer border is red, and the inner border is green. The space between the borders is white. The frame has a slight 3D effect with a grey shadow on the bottom and sides.

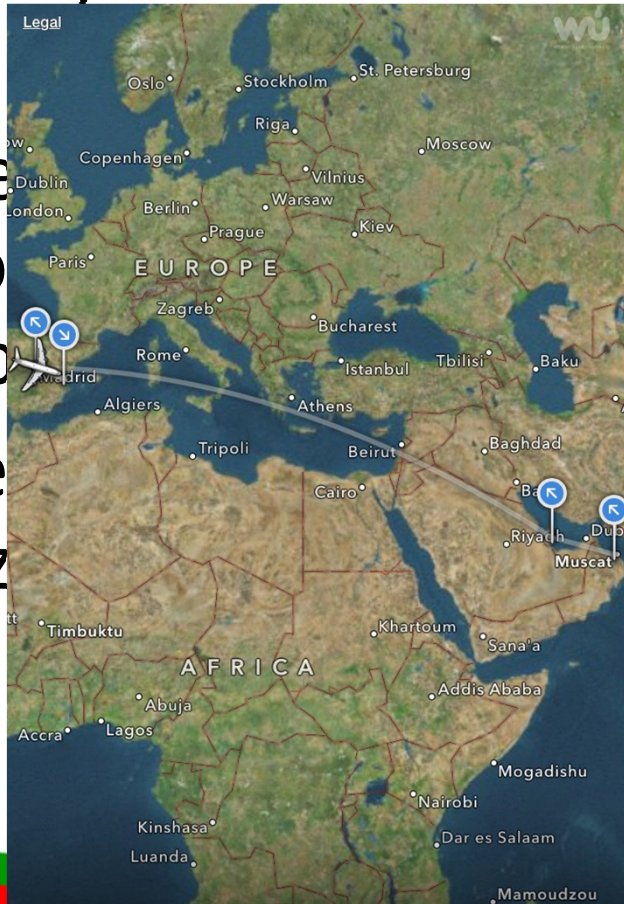
METHODOLOGY

SETTING

- Took place at the Royal Hospital, a tertiary-teaching hospital located in Muscat, the capital of the Sultanate of Oman

- Middle-Eastern population of 42.2% are non-citizens

- Offer free health services to citizens and non-citizens



RESEARCH DESIGN

A mixed-method, quantitative & qualitative approaches

- Phase I
(N= 157)

Survey

SURVEY QUESTIONNAIRE

- 1) Perceived usefulness (PU) and the Perceived ease of use (PEU) of the EHR during handoff
- 2) Process and practice of nursing handoff,
- 3) Perceived quality of nursing handoff,
- 4) Design of the EHR ,
- 5) Nurses' demographic information.

DATA COLLECTION PROCEDURE

- 300 survey questionnaires were handed to the Education and Training Department at the Royal Hospital
- Flyers explaining the scope, aims and the procedures of the study were also posted at the respective units

CONT. DATA COLLECTION PROCEDURE

- Participants were given one month to complete the survey, Sept 26, 2011 to Oct 27, 2011
- Participants were instructed to dropped-off completed surveys at the Education & Training Department
- 60.6 % response rate was yielded (n=157 of the target population 259)

QUALITATIVE DATA COLLECTION PROCEDURE

- Variety of data collection methods were used to collect in-depth information surrounding nursing handoff



Semi-structured
interviews



Participant
observation



Artifact analysis

SEMI-STRUCTURED INTERVIEWS

- 14 nurses was randomly selected from a pool of 20 nurses who self-selected to participate in Phase II
- Each participant was interviewed twice.
- Interviews took place in a private room and were recorded using a digital voice recorder



CONT. SEMI-STRUCTURED INTERVIEWS

- Interview guide was used to provide a consistent framework pertaining to handoff processes & practices
- Interviews were transcribed within two weeks of the interview, & a member-check interview with the participants was conducted to confirm the findings and interpretations



PARTICIPANT OBSERVATION

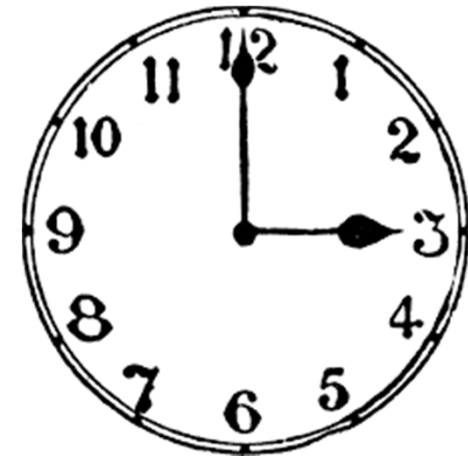
- 20-handoff reports were observed involving 162 nurses & 382 patients



Before



During



After

DATA ANALYSIS

- IBM SPSS version 19 was used to analyze descriptive and frequency statistics



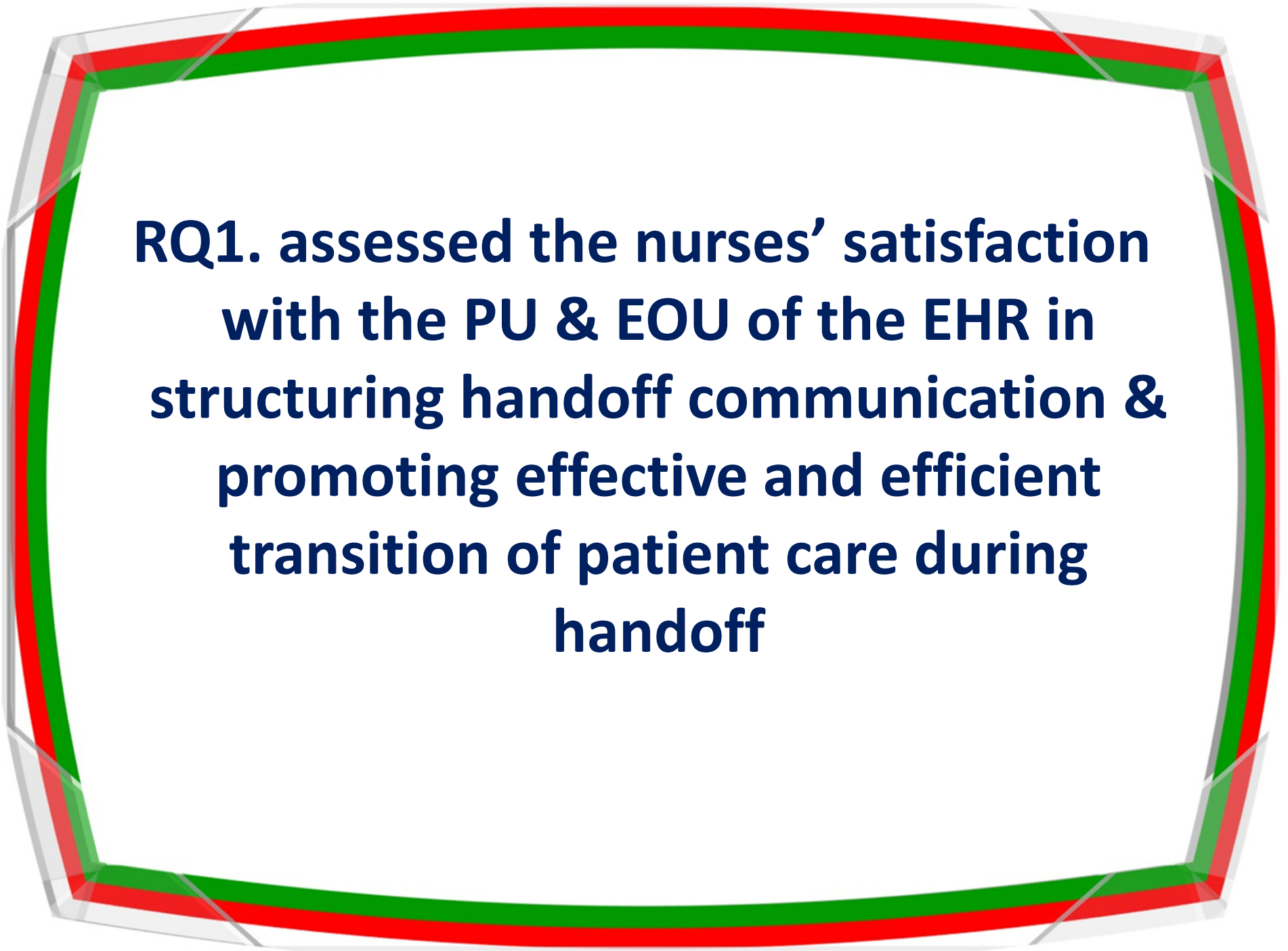
+

- NVivo was used to organize and analyze Qualitative data





MAJOR FINDINGS



RQ1. assessed the nurses' satisfaction with the PU & EOU of the EHR in structuring handoff communication & promoting effective and efficient transition of patient care during handoff

Demographic characteristics of the survey respondents (N =157)

| Variables | Frequency | Percent |
|--|-----------|---------|
| Gender | | |
| Male | 16 | 10.2 |
| Female | 141 | 89.8 |
| Nationality | | |
| Omani | 71 | 45.2 |
| Non-Omani | 86 | 54.8 |
| Level of Education | | |
| Basic Nursing Diploma | 119 | 75.8 |
| Post-Basic Diploma | 18 | 11.5 |
| Bachelor of Science in nursing | 20 | 12.7 |
| Studied handoff in nursing program | | |
| Yes | 126 | 80.3 |
| No | 31 | 19.7 |
| Received in-service training on nursing handoff | | |
| Yes | 68 | 43.3 |
| No | 89 | 56.7 |

RQ1 Results

- The nurses had positive perceptions about the PU and the PEU of the EHR in structuring handoff communication and promoting effective and efficient transition of patient care during handoff as evidenced by significant correlations



**RQ 2. Explored the content and
the context of nursing handoff in
Oman**

RESEARCH QUESTION 2

- The nurses worked three shifts a day, with 30 minutes shift interlapse allocated for handoff.
- Followed a “Block system” duty roster, where a team of nurses work with the same nurses for 2 to 3 months
- All Handoffs took place in a private room
- All handoff report were delivered on one-to-group

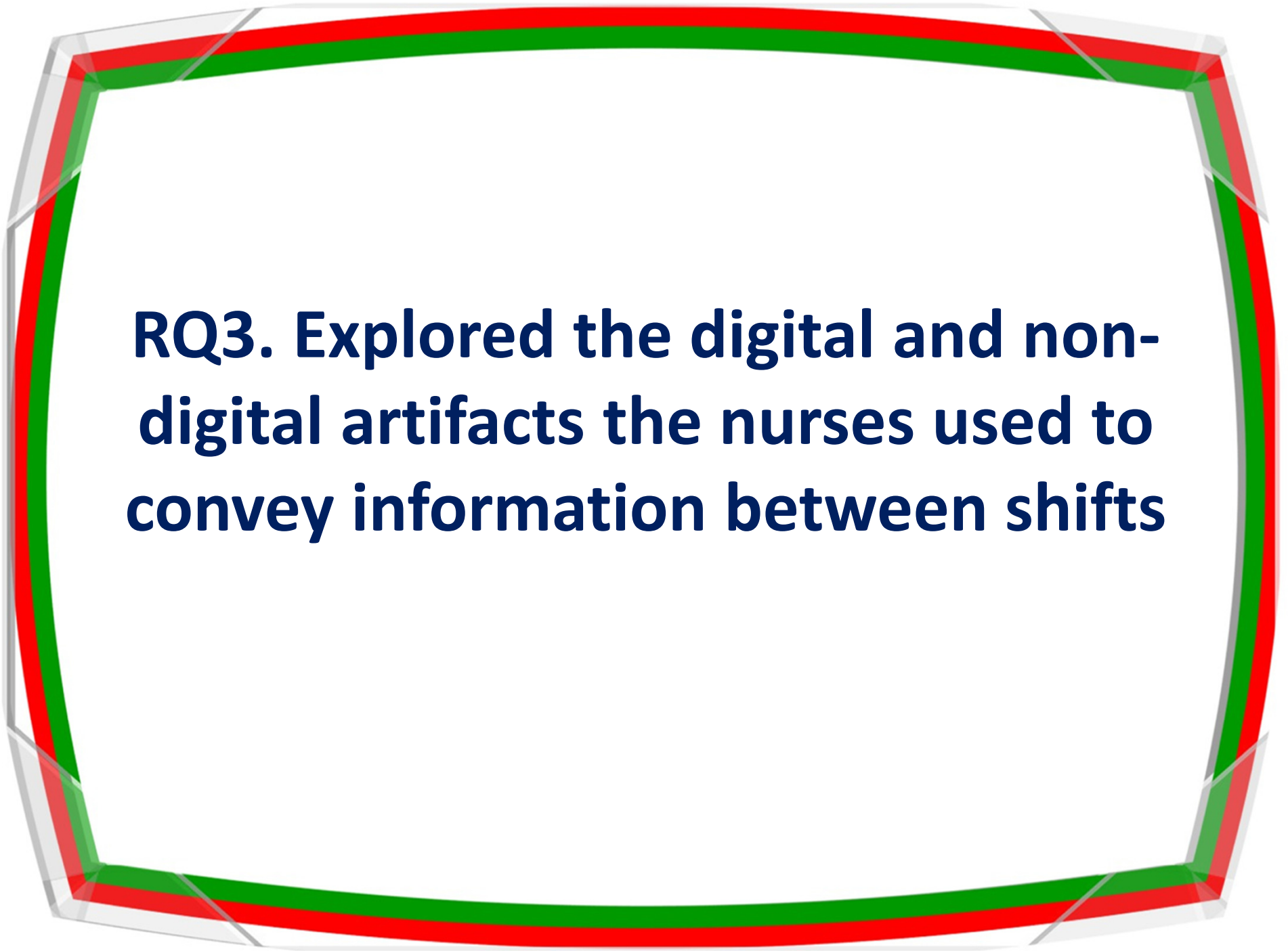


CONT. RESEARCH QUESTION 2

- None of the participants reported having a written handoff policy
- None of the participants used the SBAR handoff communication format
- Information communicated during handoff stratified into two main categories: “Unit Routines” and “Patient care-related information.”

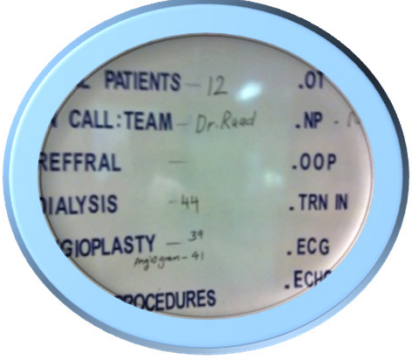
CONT. RESEARCH QUESTION 2

- Length of the handoff report varied across shifts and units, ranging from 17 minutes to 90 minutes per shift.
- Factors determine the length of the handoff report :
 - number of patients admitted in the unit,
 - the severity of patient condition,
 - whether the nurses took care of the patient recently or not.



RQ3. Explored the digital and non-digital artifacts the nurses used to convey information between shifts

RESEARCH QUESTION 3





RQ4. Assessed the strengths and the shortcomings of the EHR (Alshifa) in supporting quality nursing handoff

RQ4 STRENGTHS OF AL-SHIFA

- All the interviewed nurses (N =14) perceived Al-Shifa to be primary artifact they use to facilitate electronic documentation, promote effective and accurate communication among the nurses during the transition of care
- Reading directly from the EHR during handoff minimized the reliance on nurses' internal cognition
- system highlighted the abnormal laboratory values in different colors
- system "flags" allergies the patient has as well as any hospital born infections

CONT. RQ4 WEAKNESS OF AL-SHIFA

- 90.4 % (N = 142) suggested having a specific module within the EHR designated for handoff communication:-
 - enable the nurses to import up-to-date patient's information directly from the EHR
 - provide a structured format that standardize the content of the shift report.
 - enable the nurses to add personalized remarks for each patient.

LIMITATIONS

- Findings are somewhat limited because of the exploratory nature of the study as well as the non-probability sampling method employed.

RECOMMENDATIONS FOR FURTHER STUDY

- A study should be conducted regarding the integration of aspects of the SBAR tool into the EHRs interface.
- A study should be conducted to examine the role of EHR in structuring handoff report and ensuring the continuity of care during patient's transfer.

CONT.... RECOMMENDATIONS FOR FURTHER STUDY

- A study should be conducted to examine the use of EHR at the point of care and the extent of patient involvement during handoff and its impact on the accuracy of the information exchanged during handoff and the overall quality of the handoff reports.



Question or
Comments

- Staff Telephone
 - Psychiatric Schedule List
 - Nursing Procedure Master
 - Handover Notes
 - Diet Record
 - Facesheet
 - Group Therapy Scheduled Patients
 - Intra-op Notes
 - Daycare
 - Emergency Triage List
 - Consumption Voucher
 - Edit Visit Details (Admin)
 - IPD Floor Plan
 - ED Floor Plan
 - Bed Availability
 - Handover Teams
 - Nutrition Referral Query
 - Community Patient Registration**
 - Emergency Triage Reg.
 - Procedure Visit
 - OPD Listing
 - Surgery Recovery
 - Surgery Reception
 - Patient Summary Chart
 - Respiratory Procedure List
 - Intake-Output Chart
 - Vital Signs
 - Surgery List
- Full Menu

Al Shifa³plus

Hospital Information Management System



Messages [21/07/2015 10:17:22]

Total:5 New:0

[ALSHIFA TEST MESSAGE](#)

[TEST NEWWWW](#)

[TEST LOG](#)

[TEST ONE](#)

[TEST MESSAGE](#)



Department : **NURSING**
 Unit : **Neuro Clinic**
 Ward : **CCU**
 Log in as :

Alerts [21/07/2015 10:17:22]

- 12 Pending Procedures without App
- 4 MDRO Case Reported
- 2 Lab Pending Requests
- 1 Lab Abnormal Results

ALSHIFA TEST MESSAGE

testing message board blinking option ffffffff
fddddd ddfasf sdf sdf sd

Created By : DOC ADMIN USER * * On : 27-JUN-11

TEST NEWWWW

aaaa aaaa bbb sdfdaf asdfasd f
cccc cccc fsdfasdf sdaf sdfsd sdf asdfsd
ddd ddd eeee dsdf asdfasdfsdf afasdfsdf

Created By : DOC ADMIN USER * * On : 03-JUL-11

TEST LOG

A test message created from WardLog form for testing purpose. A test message created from WardLog form for testing purpose.



قطاع الاستشارة