



NK7EO – Innovation

Two examples are required (one example must be from the ambulatory setting, if applicable):

NK7EOb: Provide one example, with supporting evidence, of an improved outcome associated with clinical nurse involvement with the design or redesign of work flow in an ambulatory setting.

- *Outcome data must be submitted in the form of a graph with a data table.*

Ambulatory Example NK7EOb: Clinical Nurses Redesign of the Department of Emergency Medicine Triage Workflow to Reduce the Rate of Patients Who Left Without Being Seen (LWBS) During COVID-19 Time

Problem

The first case of COVID-19 in the Kingdom of Saudi Arabia (KSA) was confirmed on March 02, 2020. KSA, like many other countries worldwide, faced a critical challenge to prevent the spread of the virus. Despite this, KSA was among the first countries to implement early and extraordinary precautionary measures to prevent the Severe Acute Respiratory Syndrome Coronavirus (SARS-CoV-2) introduction into the country or to mitigate its impact when it arrived (Algaissi et al, 2020). KFSHRC General Organization is the largest tertiary hospital in KSA with the Department of Emergency Medicine (DEM) being at the forefront of managing the Middle East Respiratory Syndrome from 2012 to 2016, which originated in KSA. Hence, when COVID-19 struck, the DEM team were able to anticipate patient flow issues and plan for mitigation.

In the DEM, an increase of patients with respiratory symptoms, typical of COVID-19 led to overcrowding and caused difficulties in triaging patients with respiratory symptoms. In March 2020, the LWBS rate was 2.66% due to delays in the triage process.

Goal Statement

Reduce the rate of LWBS in the DEM at KFSHRC-J.

Participants

Table NK7EOb.1 below presents the interprofessional team who participated in the triage workflow redesign to reduce the LWBS rate in DEM.

Table NK7EOb.1: DEM Triage Redesign Interdisciplinary Team to reduce the LWBS rate in DEM

Name & Credentials	Job Title	Department
Janis Bruyns, BN RN, MA	Program Director	Ambulatory Care Nursing
Marwa Abid, BSN RN	Head Nurse	DEM
Sarah Ba Abdullah, BSN RN	Assistant Head Nurse	DEM
Ana'am Khatatbeh, BSN RN, MSc, CPHQ	Nurse Clinician	DEM
Taghreed Jilan, MSN RN	Nurse Clinician	DEM
Sara Al Beladi, BSN RN	SN1, Unit Council Chair	DEM
Mwaffak Bashir, M.D.	Consultant, Chairman	DEM
Allali Khalid	Infection control practitioner	Infection Control and Epidemiology
DEM Charge Nurse Council		
Mohammad Al Rawashdeh, BSN RN	SN1, Charge Nurse Chair	DEM
Abdul Razak, Erwina Sufica Binti, Dip.N RN	SN1, Clinical Nurse	DEM
Abudawood, Shahad Nabil, BSN RN	SN1, Clinical Nurse	DEM
Albeladi, Gehan Ateya, BSN RN	SN1, Clinical Nurse	DEM
Aris, Haslinawati, Dip.N RN	SN1, Clinical Nurse	DEM
Binti Kamsidin, Siti Zainuridah, BSN RN	SN1, Clinical Nurse	DEM
Ramlan, Nur Amira, Dip.N RN	SN1, Clinical Nurse	DEM
Cantavieja, Roald Emerson Parducho, BSN RN	SN1, Clinical Nurse	DEM
Diaz, Sarah Kaye Lipaopao, BSN RN	SN1, Clinical Nurse	DEM
Doronila, Guia Marie Amodia, BSN RN	SN1, Clinical Nurse	DEM
Dumlao, Becky, BSN RN	SN1, Clinical Nurse	DEM
Esmenos, Leslie Marfil, BSN RN	SN1, Clinical Nurse	DEM
Hernandez, Jeralyn Ambal, BSN RN	SN1, Clinical Nurse	DEM

Ismail, Walaa Yahya, BSN RN	SN1, Clinical Nurse	DEM
Jameel, Amal Khaled, BSN RN	SN1, Clinical Nurse	DEM
Javelona, Maricer Sazon, BSN RN	SN1, Clinical Nurse	DEM
Rajji Joseph, Dip.N RN	SN1, Clinical Nurse	DEM
Anathanam, Rajani, Dip.N RN	SN1, Clinical Nurse	DEM
Saberon, Bonie Jacalan, BSN RN	SN1, Clinical Nurse	DEM
Sison, Imelda Mabeza, BSN RN	SN1, Clinical Nurse	DEM
Weitz, Wafeeq, BSN RN	SN1, Clinical Nurse	DEM
Javier, Marc, BSN RN	SN1, Clinical Nurse	DEM

Description of the Intervention

As owners of the triage process, the clinical nurses worked with interprofessional colleagues to redesign the triage workflow. The DEM interdisciplinary leadership team met and proposed to change the current triage workflow and triage the patients into two separate zones in DEM:

1. Green zone for non-suspected COVID-19 patients
2. Orange zone for patients suspected of having COVID-19

The DEM Charge Nurse Council discussed the proposal to separate the triage workflow into Green and Orange Zones and redesign the “old” triage workflow (see Figure NK7EOb.1: Old DEM Triage Process) to the “new” triage workflow (see Figure NK7EOb.2: New DEM Triage Process). Additional recommendations were made to limit interactions of clinical staff between zones, such as conducting handovers and the need for a portable chest x-ray machine within the DEM to reduce time delays and the risk of infection spread.

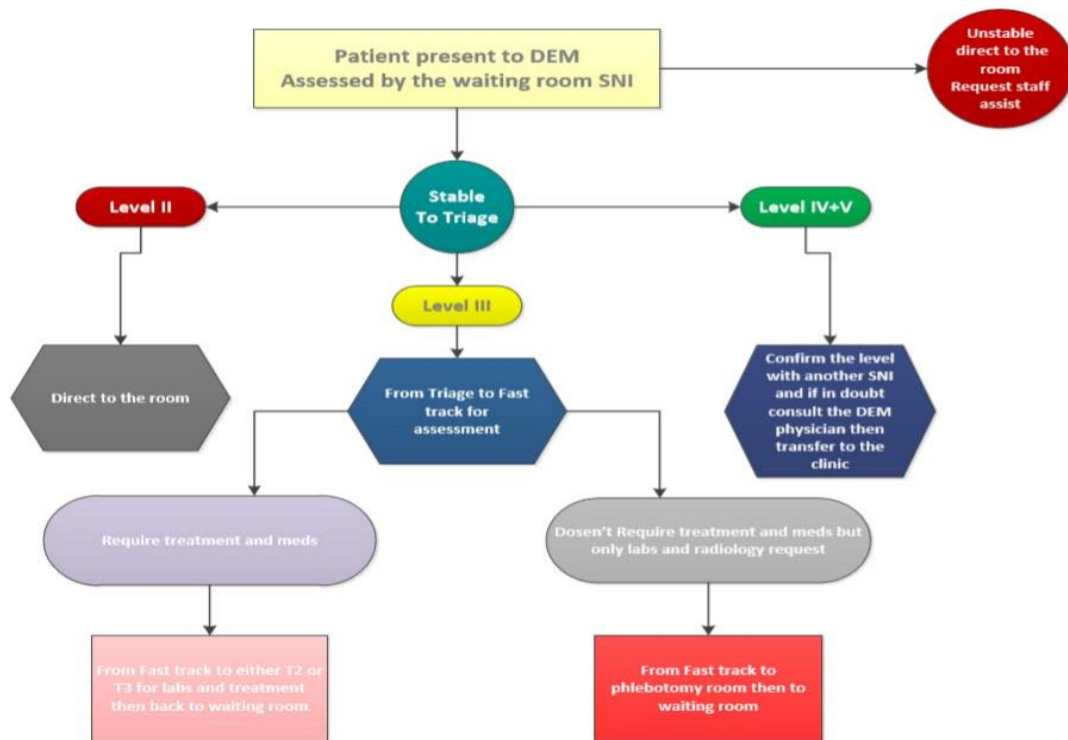


Figure NK7EOb.1: Old DEM Triage Process

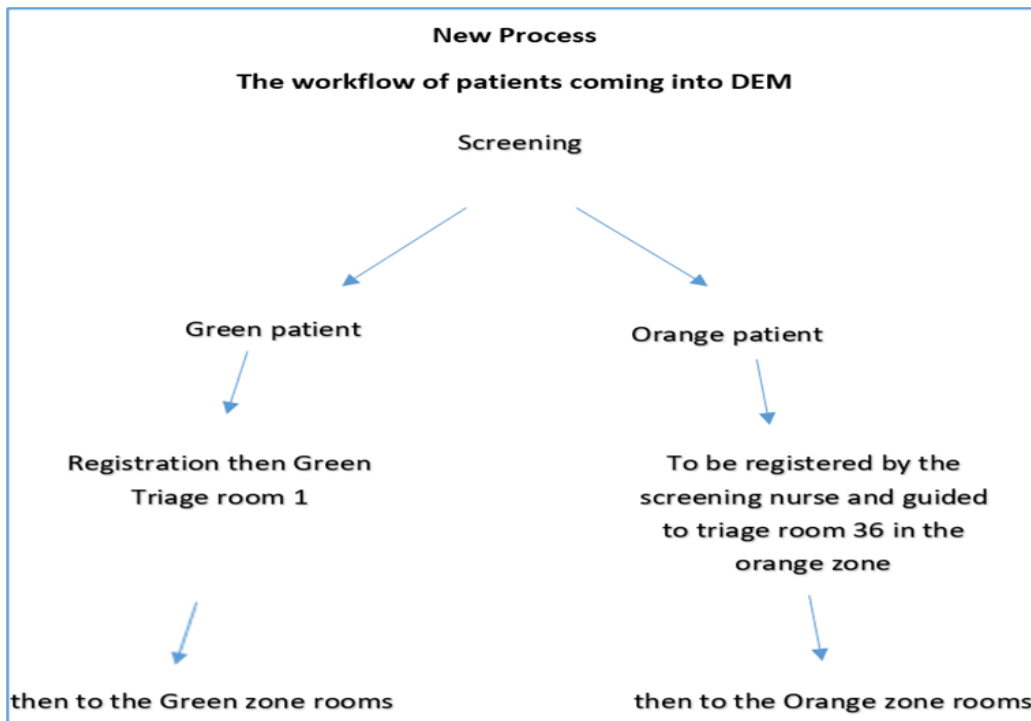


Figure NK7EOb.2: New DEM Triage Process introduced

Implementation of the Re-designed Workflow

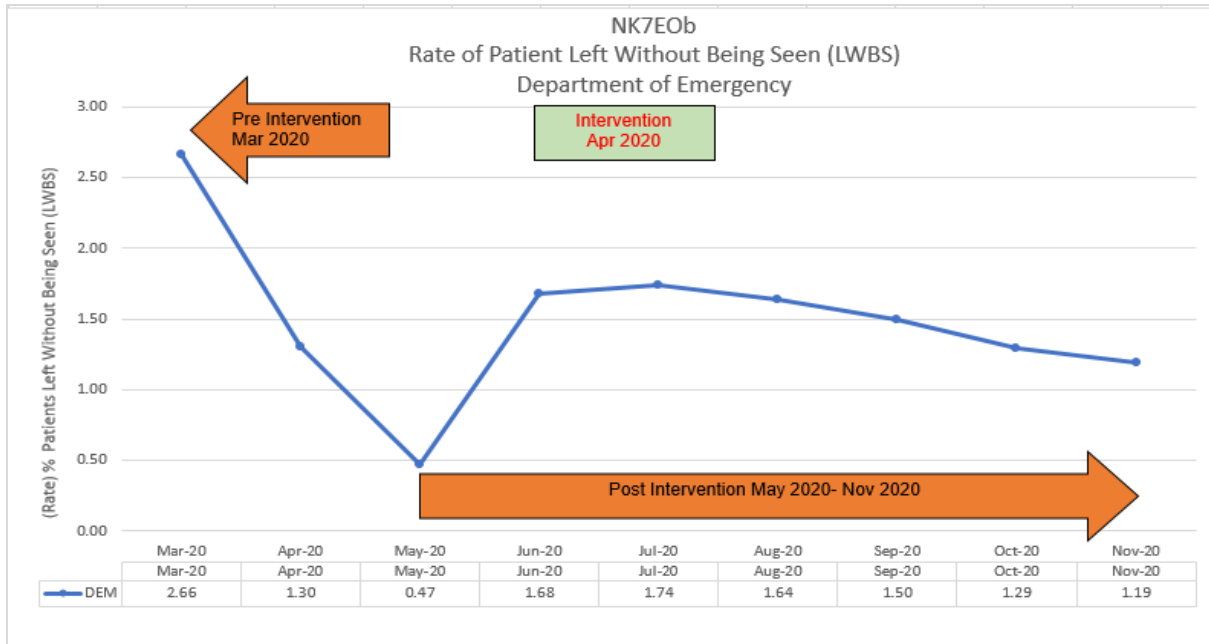
Interventions implemented in April 2020 included:

- All clinical nurses, DEM physicians, respiratory therapists, registration desk receptionists, and ward clerks were educated on the new triage process and their respective roles in the redesigned workflow.
- Clinical nurses were allocated to screen new patients at a screening station before booking at the registration desk.
- The Severe Acute Respiratory Index (SARI) was used to risk-stratify patients:
 - Those patients scoring high, i.e., ≥ 4 or answering “yes” on the COVID-19 questionnaire, were sent directly to the orange zone where the screening nurse registered the patient.
 - The patients scoring ≤ 3 on the SARI were sent to the green zone for screening by clinical nurses.
- Clinically unstable patients were immediately allocated an appropriate clinical space, and informed physicians immediately of all assessments of patients with a high SARI to prevent a delay in further treatment.
 - Nurse-to-nurse and nurse-to-respiratory therapist handovers were conducted within the zones, limiting the need for staff to traverse several zones, reducing infection risk, and improving coordination of care.
 - A portable chest x-ray machine was located in the DEM so that all patients with high SARI scores could have x-rays within their respective cubicles, preventing unnecessary movement within the area.
 - Placement of a physical partition to separate the green from the orange zone and signage added for zone demarcation.

All interventions were completed in April 2020.

Outcome

This workflow redesign improved the triaging of patients suspected of COVID-19, preventing the spread of infection, increasing teamwork and communication, resulting in a reduced rate of patients who LWBS in DEM from April 2020 to November 2020, as seen in Graph NK7EOb below.



Graph NK7EOb: Rate of Patients Who Left Without Being Seen (LWBS) in DEM

References

Algaissi, A. A., Alharbi, N. K., Hassanain, M., & Hashem, A. M. (2020). Preparedness and response to COVID-19 in Saudi Arabia: Building on MERS experience. *Journal of infection and public health*, 13(6), 834-838.