

Original Research Article

A quality improvement project to improve mental health screening at nurse triage in a primary healthcare center

Judy Shalin, Sanaulla Sheik*, Amit Gupta, Bobby Thomas, Mohammed J. M. Albarbari, Achuth Sreedhar, Annalyn Beraquit Bo

Al Khor Health Center, Primary Health Care Corporation, Qatar

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*Correspondence:

Dr. Sanaulla Sheik,

E-mail: learning123@runbox.com

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ABSTRACT

Background: One-fifth of adults attending primary care have a diagnosable mental disorder, which is in top 10 diseases of global burden. Screening for early detection of mental and substance misuse disorders in primary care can improve quality of life. The screening percentage was low at 86% for mental health. So, QI project undertaken to improve mental health triage at health center using a staff reminder strategy and refresher training at individual level, as these have shown effectiveness in systematic reviews.

Methods: The project employed plan-do-study-act (PDSA) cycles to test the change ideas. Quality improvement tools, including process mapping, Fishbone analysis, driver diagrams, and prioritization matrices, were used to identify root causes and develop interventions and refresher training of nurses were the change ideas.

Results: The refresher education session was attended by 42 nurses and 52 nurses received regular emails on update and reminder on first week of each month and weekly social media messages throughout the project period. Mental health triage asking for PHQ2 and GAD2 questionnaire by triage nurses improved significantly during the project period of 3 months from the baseline values of 84% to 94% for depression and from 88% to 97% for anxiety.

Conclusions: Mental health triage in primary care health centers can be improved by increasing its awareness in triage nurses and their attitude towards mental health. Mental health screening can be improved by refresher training and reminders. Collaboration and teamwork between nurse and administration team will deliver an excellent outcome.

Keywords: Generalized anxiety disorder, Mental health screening, Patient health questionnaire, Quality improvement project

INTRODUCTION

The public health burden of mental disorders is high.¹ One-fifth of adults attending primary care have a diagnosable mental disorder.² Anxiety and depression are the most common psychiatric presentations in Qatar. Mental disorders remained top 10 causes while Anxiety and depression ranked fourth in the global burden of diseases.³ Depression is second only to heart disease as a cause of disability in Qatar. There is overwhelming evidence in support of delivering integrated physical and mental healthcare.² Primary care is the first level of

contact of individuals, the family and the community, bringing healthcare as close as possible to where people live and work.⁴ The key advantages of delivering care of mental health through primary care are that it is accessible, acceptable and ensures continuity of care.² But still 97% of those with mental health problems were referred to specialist services.⁵

Unrecognized or untreated Mental health has impact on quality of life, financial issues, relationships and can lead to suicide. Mental disorders have impact on physical

health and increase the poor clinical outcome in many physical disorders according to a recent review.⁶

The problem

The screening levels below the target for the corporation:

The corporation provides monthly feedback on the overall performance in the form of key performance indicators (KPI) including the nurse triage parameters for each health center. The PHCC corporation targets to achieve 100% mental health screening during triage and the Al Khor health center had achieved 86% during the October 2023. This is much lower than the corporation target and risks missing out on the patients suffering from mental health problems. The lower rate of mental health questionnaire during triage increases the risk of missing patients with mental health disorder and so, we wanted to improve this rate.

Plan

Overview of systematic reviews of the effectiveness of reminders in improving healthcare professional behaviour appears to show effectiveness of reminders in improving different clinical behaviours across a range of settings.⁷ In a quality improvement project, improvement of depression screening in primary care with implementation of reminder prompts to healthcare providers and educational training has been shown.⁸

Considering clinical evidence, use of reminder strategy and refresher training at individual level of triage nurses was considered to be used as an intervention to bring the improvement in screening rate.

The quality improvement project was therefore designed to improve the mental health screening at nurse triage of the patients attending the health center. This involved working with multiple partners, including the nurses working in the triage section and the reception team who register the patients.

METHODS

Aim of the project

To improve the percentage of compliance to the nursing assessment on mental health screening from the base line of 86% in August 2023 to 90% by the end of 30th April 2024 at Al Khor Health Center.

Study type

It was a quality improvement project.

Study period

The study was carried out from 1st January 2024 to 31st March 2024.

Inclusion criteria

All patients aged 18yr to 65yrs attending the health center and going through nurse triage.

Exclusion criteria

Patients presenting with medical emergencies, where triage was conducted by the treating nurse inside the emergency room, were excluded from the study.

Health facility and triage system

The project took place in Al Khor health center, a primary care center which follows the family medicine model of care. It has registered patient size of 25259. Every day on average 308 patients were seen during 2024 at the center. The center is part of Primary health care corporation (PHCC) which is a national body overlooking 31 similar health centers spread all over the country.

Triage is provided by nurses to all clients who attend the health center without prior appointment to ensure appropriate level of intervention is offered, as per the primary care walk in service- triage policy OP-P15V04.0. Usually, 4 nurses do client triage at any given time.

The center uses 'Cerner', patient electronic medical record (EMR) system for recording and documenting all information related to patient care. Triage includes screening for physical and mental health for all above clients. The corporation aims to reach the target of 100%, which would mean that all clients need to have had the mental health screening questionnaire asked. But the health center screening reached 84% for depression and 88% for anxiety during the third quarter of 2023, which is below the corporation required target.

Cerner is a central health information recording and storage EMR system which gives access to patient health record at both primary and secondary care levels for all the authorized users like nurses and doctors. For the patient triage, the Cerner EMR has a 'customized triage section' for nurses to document their assessment of the attending client in a systematic way. This excludes the need for the nurse to remember each task of patient triage but to select different tabs of the triage section on Cerner EMR and document the required information. All the nurses have dedicated training in use of Cerner EMR at the start of the employment and PHCC has active Cerner helpdesk for any technical issues during working hours.

The nurse triage process

The nurses are supposed to ask two questions for assessing depression- PHQ2 (in the past 2 weeks, i) have you lost your interest in things which you used to enjoy, ii) do you feel down, depressed or hopeless) and two questions for anxiety GAD2 (over the past 2 weeks, i) worry, ii) feel anxious). The incorporation of the mental

health screening in nurse triage provides an opportunity to ask the patient directly about mental health and is recommended in primary care setting.⁹ Asking PHQ2

questions may be as effective as full questionnaire, but all positive screening tests should trigger full depression assessment.^{10,11}

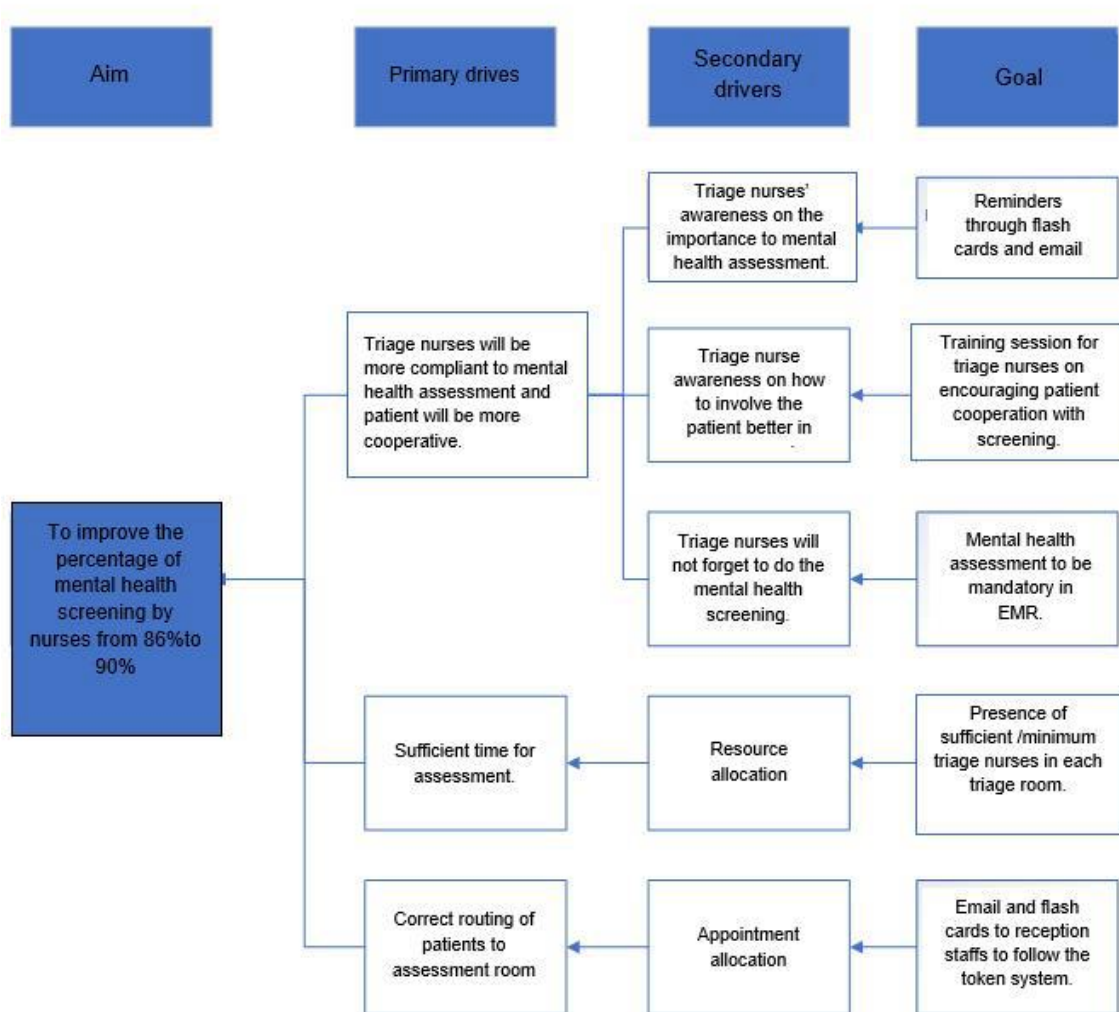


Figure 1: Driver diagram showing the process and drivers considered in QI project.

Procedure

PDSA model of QI project was used as detailed below.

PDSA Cycle: 1. Plan, 2. Do, 3. Study and 4. Act

Plan

Root cause analysis

Conducted informal interviews with nurses to identify barriers to effective mental health screening. The analysis led to the decision to implement reminders in the form of printed laminated flashcards placed in the nurse triage area to reinforce the need for mental health screening during patient assessments.

Electronic reminders

Regular digital reminders via email and social media platforms were planned to ensure nurses remained engaged and aware of the mental health screening protocols.

Training Sessions

Refresher training sessions for triage nurses on mental health screening practices were also included in the plan.

Approval

The project received formal approval from the quality and patient safety directorate of PHCC.

Prediction

Following nurse refresher training and reminders, improvement in the percentage of mental health screening at the health center during patient triage is predicted to improve.

Do

Training sessions

Conducted virtual and physical training sessions for nurses focusing on the PHCC triage policy and the specific mental health screening questions to be asked during triage.

Physical reminders

Laminated flashcards were placed next to triage desks in all assessment rooms, ensuring visibility for the triage nurses.

Digital communication

Regular reminder messages were sent via a closed WhatsApp group for nurses (weekly) and through emails on a scheduled basis (monthly).

Data collection

Collected weekly data on mental health screening compliance from the health information management department to monitor progress.

Team meetings

Held three virtual meetings for the QI project team to discuss project progress, challenges encountered, and necessary adjustments to the intervention strategies.

Study

Data was collected on the following metrics: The number of clients attending the triage and the percentage of these patients receiving triage. The percentage of clients receiving mental health screening using the PHQ-2 and GAD-2 during the triage process.

Data collection

The study focused on patients aged 18 to 65 years. The data was collected from triage patient encounters at Al Khor Health Center using the Cerner EMR system from January 1, 2024, to March 31, 2024. This data encompassed two triage rooms equipped with four computer nurse terminals, enabling comprehensive tracking of screening compliance.

Patient clinics for patients with routine appointment, immunization clinics, telephone encounter clinics, multi-disciplinary team clinics, specialties like dermatology or ophthalmology clinics and well woman clinics were excluded from the data collection as no formal triage is done in these encounters.

Act

The following steps were taken to improve the outcome:

Maintained laminated reminders in the triage room for easy access by triage nurses. Continued monitoring of triage data, including mental health screening, as part of ongoing quality maintenance activities.

RESULTS

The baseline mental health screening rates for triage nurses were recorded at 84% for depression and 88% for anxiety during October 2023. The project commenced on January 1, 2024, and post-intervention data showed an increase in compliance: depression screening rose to 94%, and anxiety screening improved to 97% by the end of March 2024.

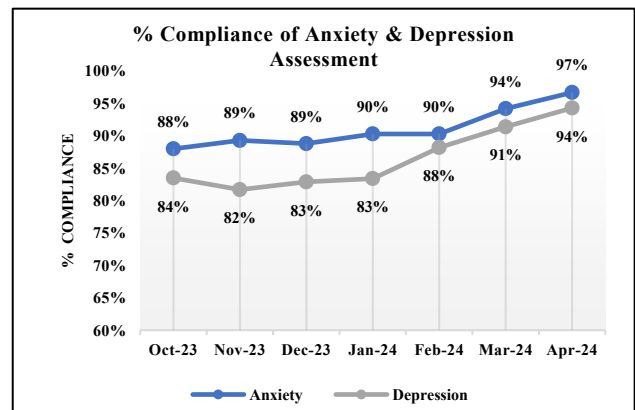


Figure 2: The screening percentages of anxiety and depression over the period of intervention.

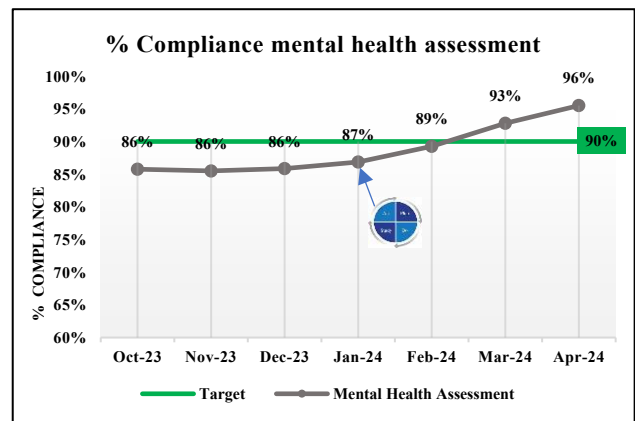


Figure 3: The overall mental health screening percentages over the period of intervention.

Table 1: Results showing impact of change idea on mental health screening at triage.

	Percentage with anxiety screening	Percentage with depression screening	Overall mental health screening
October 2023 (pre-intervention)	88%	84%	86%
Jan-March 2024 (post-intervention)	97%	94%	95.5%

DISCUSSION

PHCC has a very organized triage system for walk-in patients. It has a diamond level accreditation by Canadian accreditation, a healthcare accreditation body. This reflects the organization's commitment to quality, safety and people-centered care. This also reflects in the data from baseline rate of mental health screening which is above 80% for anxiety and depression. The system has trained healthcare employees, good administrative support, modern central EMR software system, updated computer system and medical devices. Due to the presence of quality and patient safety directorate and its division of quality improvement section, it was possible to initiate the project easily and have access to data for collection and interpretation. Due to the presence of an organized system, it was easy for us to execute changes and collect the data thoroughly and accurately.

Screening for early detection of mental and substance misuse disorders in primary care can improve quality of life.¹² According to the 'triage' policy of PHCC, all clients attending the health center triage, should be asked about their mental health.¹³ This is by asking the screening questions PHQ2 (patient health questionnaire-2) and GAD2 (generalized anxiety disorder-2). These are the validated global health questionnaire which provide clinical utility and diagnostic accuracy.¹⁴

Behavioural change wheel (BCW) is impacted by 4 domains, individual, interpersonal relations, institutional settings and infrastructure.¹⁵ The PHCC had standardized process for completing mental health screening during triage and reporting on the EMR. So, we wanted to work at individual level to bring in the behavioural change and improve the rate of screening. Several strategies like audit and feedback, education, reminder systems, simulation and electronic decision support tools with AI have been recommended to improve quality of triage.¹⁶

We started with the aim to improve the mental health screening at triage by the nurses. We implemented changes in the form of refresher training for the nurses involved in triage process, physical and electronic reminders to the nurses involved in the triage process. We also collected regular weekly data to monitor the process. At the end of the project, there has been at least 10% improvement in the rate of mental health screening. It has been a good planning, team effort and perseverance of the members of the project which has made this achievable. The improvement in the compliance with mental health screening was very evident on the chart, when the

screening for GAD7 and PHQ9 was low at the baseline in October 2023 and also in December 2023 but started to improve after the initiation of improvement project in January 2024 and sustained it till our data collection in March 2024. This clearly shows the impact of the intervention made at the beginning of January 2024.

The project had a fixed improvement target which was achievable by the implementation of idea of change. This motivated the members to put their full efforts to achieve the target.

Most members of the project were experienced and had spent good amount of time working in the healthcare sector. Coordination and the efforts of the QI members were excellent, and everyone was flexible. The project was well understood by all the members of the project. The project had 3 virtual meetings which was very useful to discuss the project and clarify any doubt by the members. The meetings helped to plan the monitoring of the project, brainstorm ideas and improve cooperation between the members.

Going forward, in order to maintain the use of reminder system on cerner EMR software, it would be beneficial if the manual reminder is replaced to an electronic prompt reminder which appears to the triage nurse on initiation of triage process. These electronic reminders can improve the quality of care.¹⁷ This might sustain the rate of mental health screening during triage in the future.

The cerner EHR system is robust and accurate in recording the input data, storing and displaying it in a user-friendly format which makes it easier to record the data. This reduces the likelihood of missing data or error in the data.¹⁸ The data shows that the documentation of anxiety screening is higher compared to that of depression during both baseline data and that during the project period. The mental health documentation on the cerner has both the anxiety and the depression screening on the same screen, one above and the other below, without the need to change or move to the next screen for documentation. We are not able to explain the reason for this discrepancy. (human factor in quality improvement has impact)

The study has demonstrated that simple feasible changes in the existing triage process and involvement of clinical staff could bring excellent improvement in primary care mental health screening. The project was supported by the quality and patient safety directorate of PHCC at every level, from screening the project request application,

finding the problem in the system, analyzing and interpretation of data, taking part in every meeting and suggesting the changes. The Strong organizational support, strong team leadership, and high levels of interpersonal team skills help medical quality improvement teams go further.¹⁹ The project can be made sustainable by implementing simple changes. These could be by regular refresher triage training and continuous monitoring, which will also strengthen the use of triage systems and nurse's triage performance.²⁰

Are the results sustainable?

The project included a physical card reminder and also reminders by emails or social media closed group messages. As the initial cycle of the project has finished now, the physical reminder card continues to be with the triage nurse station but not the email reminders. In order to make the process sustainable, the reminder can be in an alternate form like 'electronic reminder' in cerner EMR. This reminder pops up when the nurse triage screen is opened. Electronic reminders on a prompt have shown to improve the practice. Other methods include automated regular emails to the nurses involved in triage with a reminder of screening for mental health during triage. This would need to be trialed and monitored.

The period of project is only 3 months and this has not been repeated yet for cycle 2 but has been planned. This would give us the sustainability of improvement with changes implemented. Meanwhile, the PHCC will continue share this every month with the employees as a form of reminder and monitoring.

Other limitation includes the subject age-selection, 18-65 years. This has excluded the important subjects who are at risk of mental health disorder, the elderly and the children. A survey found 12.8% of children of age 5 to 19 years had at least one mental disorder.²¹ And an average prevalence of depression among elderly was 31.74% according to a systematic review and meta-analysis and 28.4% by another.^{22,23} So this project may not represent fully the attending population to the health center.

When further explored, we found that the clinics like well-baby clinics which caters for children <14 years, were not covered by the project. The project also did not cover other clinics like nurse assessment for routine appointment where patients present mostly with chronic illness.

CONCLUSION

Mental health has been increasing in the community and is a major risk factor for the worsening physical health. Mental health screening provides a tool to recognize people suffering from mental health problems.

This QI project successfully improved mental health screening compliance at the Al Khor Health Center by

implementing structured reminders and refresher training sessions. The depression screening rate increased from 84% to 94%, and anxiety screening improved from 88% to 97%, demonstrating that focused interventions can lead to substantial improvements in patient care.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Quality and Patient Safety directorate of Primary Health Care Corporation

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