

Original Article

## Improving Delirium Assessment in Palliative Homecare – A Quality Improvement Project at CanSupport

Ishita Gandhi<sup>1</sup>, Reena Sharma<sup>1</sup>

<sup>1</sup>Department of Palliative Medicine, CanSupport, New Delhi, India.

### ABSTRACT

**Objectives:** Delirium increases distress in patients and caregivers and often leads to hospitalisation and increased health-care costs. It is early diagnosis and management improves the quality of life (QoL) of advanced cancer patients as well as their families. This quality improvement (QI) project aimed at increasing delirium assessment in poor performance advanced cancer patients receiving palliative homecare.

**Material and Methods:** The A3 methodology for QI was used. Our SMART goal was to increase the assessment of delirium in poor performance advanced cancer patients from 25% to 50%. The Fishbone and Pareto analysis helped to determine the reasons for low assessment rates. A validated screening tool for delirium assessment was selected and the homecare team doctors and nurses were trained to use it. A flier was designed to help educate families about delirium.

**Results:** Regular use of the tool helped to increase delirium assessment from an initial 25–50% at the time of project completion. The homecare teams learnt the importance of early delirium diagnosis and the need for regular delirium screening. Family caregivers were empowered through education and use of fliers.

**Conclusion:** The QI project helped to improve delirium assessment and leading to improved QoL of patients and their caregivers. Regular training and awareness and continued use of a validated screening tool should help to sustain the results.

**Keywords:** Palliative care, Home-based palliative care, Delirium assessment, Quality improvement

### INTRODUCTION

Delirium has been characterised as an ‘aetiologically non-specific, global, cerebral dysfunction characterised by concurrent disturbances of level of consciousness, attention, thinking, perception, memory, psychomotor behaviour, emotion and the sleep-wake cycle’. Disorientation, fluctuation or waxing and waning of these symptoms, as well as acute or abrupt onset of such disturbances are other critical features of delirium<sup>[1]</sup> that often causes significant distress to patients and their caregivers.<sup>[2]</sup>

Research has shown that a median range of 60% patients developed delirium in inpatient palliative care setting and overall about 12% in community setting.<sup>[3]</sup>

Delirium is known to contribute to increased patient morbidity and mortality<sup>[4]</sup> and is associated with longer hospital stays and increased health-care costs. It is an independent risk factor for poorer prognosis and one of the

predictors of the end of life. It is a source of much distress for patients and families and can preclude a patient’s wish to die at home due to the challenges in treating the patients.

Delirium frequently occurs due to acute and often reversible causes such as infection and dehydration. Reversibility of the process of delirium is often possible even in the patient with advanced illness; however, it may not be reversible in the past 24–48 h of life. Delirium occurring in these past days of life is often referred to as terminal restlessness or terminal agitation.<sup>[5]</sup>

In addition to contributing to patient and caregiver distress, delirium at times necessitates hospital admission or complicates the care of a patient at home. Although delirium is highly prevalent in palliative care settings, most of the delirium episodes go unrecognised or misdiagnosed or are diagnosed late and are poorly documented.<sup>[6]</sup>

The effective recognition, assessment and management of an episode of delirium hinge on vigilance and commitment by

\*Corresponding author: Ishita Gandhi, Department of Palliative medicine, CanSupport, New Delhi, India. [igandhi5@gmail.com](mailto:igandhi5@gmail.com)

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the whole health-care team.<sup>[7]</sup> Although reversal of delirium may not always be possible or desirable, symptomatic management helps relieving the distress of the patient and their families and improves their quality of life (QoL). With increasing availability of palliative homecare services, it is important that the homecare teams are able to assess the initial symptoms of delirium to manage it early and effectively to improve the QoL of the patient.

The aim of our quality improvement (QI) process was to improve the assessment of delirium for poor performance advanced cancer patients in homecare setting at CanSupport using the appropriate screening tools and management skills. CanSupport is a non-governmental organisation which provides home-based palliative care services in Delhi and some districts of Haryana, Punjab and UP. The goal was to recognise and treat delirium as early as possible and differentiating it from other differential diagnoses so that mistreatment and under treatment of the symptom can be minimised, thereby ensuring a better QoL for patients.

## MATERIAL AND METHODS

We undertook this QI project under The EQUiP India: Enable Quality Improve Patient Care Course conducted by the National Cancer Grid in collaboration with Stanford Medicine – USA, to develop competencies in improving Quality of clinical cancer care and palliative care in India.

A3 methodology for QI offered by the EQUiP India was used for this project. The A3 process is a problem-solving tool introduced by ‘Tai Chiano’ which facilitates QI project by bringing about multiple changes by incorporating the principles of Plan-Do-Check-Act (PDCA) cycle. The term ‘A3’ is derived from the size of paper used to outline ideas, plans and goals throughout the A3 process (A3 paper is also known as 11” × 17” or B-sized paper).

The left-hand side of the A3 paper includes the background, the problem statement, the Specific, Measurable, Achievable, Relevant and Time bound (SMART) goal and the root cause analysis. The SMART goal comprises outcome goal, process goal and balancing goal and the root cause analysis is done by tools like fish bone analysis and pareto analysis. The key drivers based on the root cause analysis, the interventions, its application, reliability, sustainability and results make up the right side of the A3 sheet. The results are depicted in the form of a run chart that tells the story of the project from baseline to completion.

Through discussions with the homecare teams and consensus with the medical director the problem statement were identified as ‘Delirium in advanced cancer patients is often diagnosed late or misdiagnosed in homecare setting increasing the distress of patients and families’. Baseline data were collected between January and April 2021. It revealed that clinical assessment of only around 25% patients was being done initially which was taken as baseline. SMART goal

was formulated as ‘To improve the assessment of delirium for poor performance advanced cancer patients from current 25% to 50% by September 2021’.

We performed a GEMBA walk<sup>[8]</sup> with the teams, wherein it was observed whether the assessments were being done or not, the hindrances were understood and what can be done was discussed. A Gemba Walk is a way to gather information through observation and interaction. In the PDCA cycle, Gemba Walks help with the identification of the problems, the analysis of the situation and the creation of a proper action plan. We, thus, identified the potential contributors leading to the lower assessments of the patients with delirium and plotted those on a fish-bone diagram<sup>[9]</sup> [Figure 1]. Next, we did a Pareto chart analysis [Figure 2] to find out among all the potential causes which occurred more frequently and were significant to the problem. We found that 75% of root causes for poor assessment were because there was no single tool used to assess delirium and neither the staff was trained to use delirium assessment tools nor the patient’s families were educated to recognise delirium and report to teams. Based on these root causes, we defined four key drivers to achieve the target [Figure 3] which, in turn, helped us align our interventions.

While analysing the root causes, we realised that our homecare teams were not using any single tool to assess delirium and most of the assessments were done based on clinical judgements. Hence, our first key driver was to streamline the screening process. Accordingly, our first intervention was to introduce a standardised screening tool in the patient’s files. After discussion about various delirium assessment tools, we decided to use the nursing delirium screening scale (NuDESC)<sup>[10]</sup> [Figure 4], as it is a validated low burden screening tool taking <2 min to complete making it suitable for assessment of delirium in poor performance advanced cancer patients at every visit in the homecare setting. Our second key driver was training which included interventions focussed on educating nurses and doctors to use the tool and regular team meetings and review of the assessment. The third key driver we chose was awareness. For this, we made fliers for empowering and educating families about delirium and the homecare teams explained the signs and symptoms to patient and families at each visit.

The outcome measure which was the percentage of patients assessed for delirium using the NuDESC was recorded weekly for seven homecare teams of CanSupport from the month of May to end of September 2021.

## RESULTS

The run charts, in [Figure 5], show the record of the percentage of poor performance advanced cancer patients assessed for delirium weekly during home visits for the duration of the project. The baseline calculated on the basis of clinical assessments done between January and April 2021

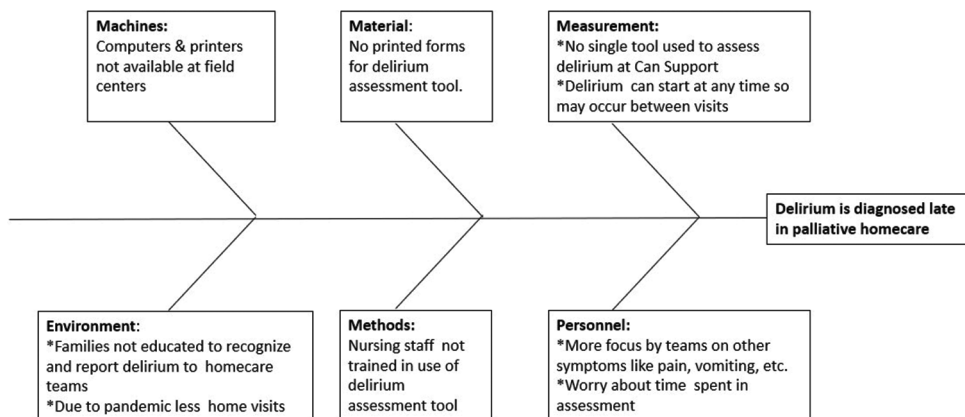


Figure 1: Fish bone analysis.

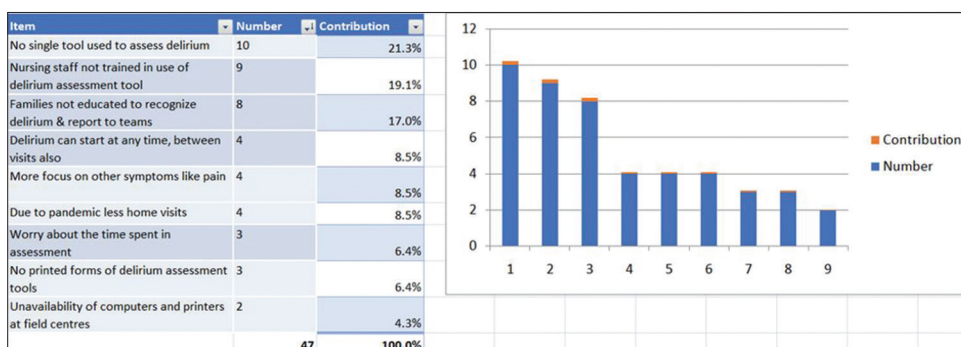


Figure 2: Pareto chart analysis.

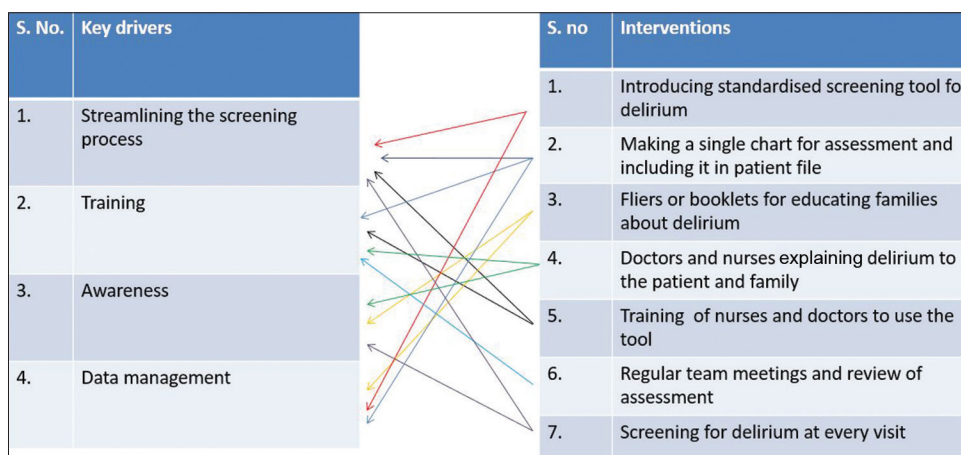


Figure 3: Key drivers and interventions.

was approximately 25%. We had a dip in the run chart in the month of May due to the pandemic when the number of visits was reduced. With the implementation of the interventions, the number of assessments done increased gradually yet significantly. There were a few dips and spikes throughout the run chart; yet, it depicts a distinct improvement in the number of assessments done with the interventions in place. The SMART goal of improving the assessment of delirium

for poor performance advanced cancer patients to 50% was achieved by the end of the project by September 2021.

## DISCUSSION

The QI project helped the teams learn the significance of early delirium diagnosis and highlighted the need for delirium screening. At CanSupport, a number of patients present with delirium in the last month of life and its early

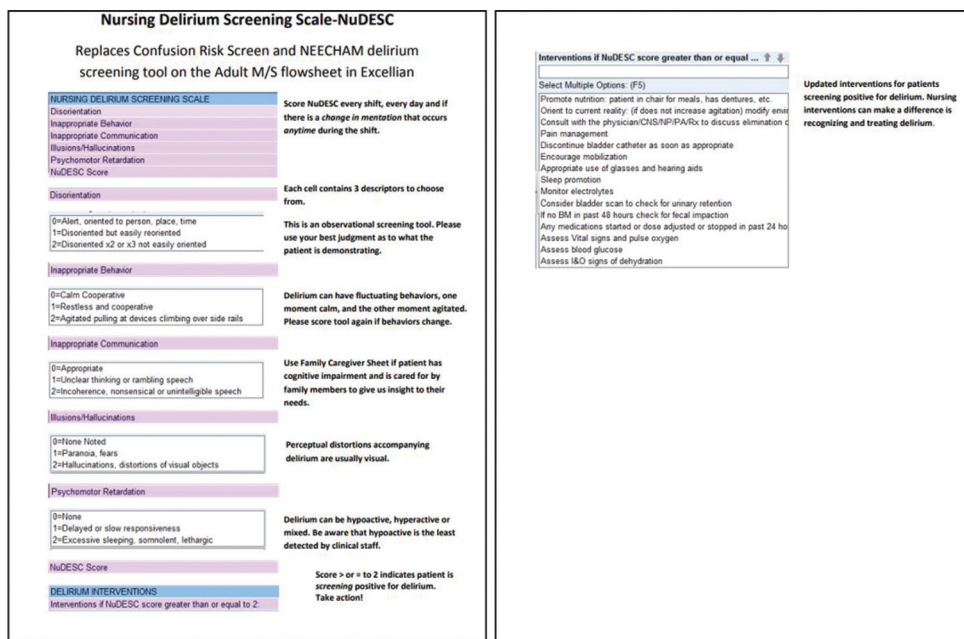


Figure 4: Nursing delirium screening scale.

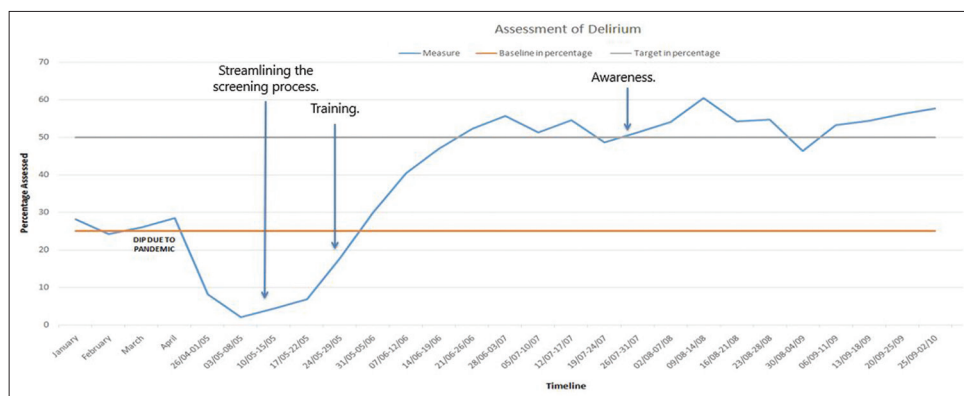


Figure 5: Run chart.

assessment and management helps improve their QoL as well as of their families. Our study showed an improvement in the assessment of delirium for poor performance advanced cancer patients from 25% to 50% in 5 months. These improvements seemed to be maintained consistently over time. With the use of QI tools such as Gemba walk and process map, the reasons for lower assessments of the patients with delirium could be identified. The interventions we used were focussed on pre-emptive screening approach and training, education and awareness of delirium. We qualitatively observed a marked change in delirium assessments after screening tool –NuDSEC was implemented. The cost of QI on the service was the time spent on training, the extra work in completing the assessment forms in the field and the cost of printing assessment forms and delirium pamphlets. Targeting the interventions with team effort helped in achieving our SMART goal. In addition, we also

achieved improved teamwork within the homecare staff and empowered caregivers. Our study demonstrates that a simple measure can bring about a big change. To sustain our success, we are planning to include all the teams of CanSupport in this process. The possibility of sustaining the quality of delirium assessment and care requires continuous effort. We would be including the assessment in the patient file, training all the teams plus any new staff, following up on assessments completed, retraining those who are having difficulties and keeping everyone motivated until it becomes a part of the system.

### CONCLUSION

Delirium is often reversible condition which is mostly misdiagnosed or diagnosed late leading to high preventable costs. It causes severe distress to patients and family and is difficult to diagnose, especially in a home-based palliative

care setting. Early assessment and management can help improve the QoL of patients and families. Introduction of a validated screening tool – NuDSEC helped streamline the process and regular training and consistent awareness would help sustain the results. The QI exercise led to improved delirium assessments which, in turn, led to better QoL of patients and their families.

### Acknowledgement

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### Declaration of patient consent

Patient's consent not required as there are no patients in this study.

### Financial support and sponsorship

Nil.

### Conflicts of interest

There are no conflicts of interest.

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