

Appendix 1

Improving NIV Through Understanding

A CLAHRC NWL funded research driven quality improvement project

Introduction - Improving NIV Through Understanding – what does that mean?

In 2016 it was becoming increasingly apparent that NIV care is widely poorly delivered. There were new guidelines, the prospect of new BTS standards and increasing pressures on trusts to improve care. I'm sure you will recognise the problem when I say that there had been numerous attempts in our trust to do this, lots of ad hoc work, many iterations of documentation proformas, leaflets and algorithms – but none had stuck, nothing had been sustained or become business as usual. Our outcomes were good but we realised that we could do better. We had to start again and from a different perspective. We chose the patient perspective.

The patient experience of NIV is poorly understood. There wasn't and still isn't much in the literature, but our own experience and day to day work with patients suggested that we had a lot to learn. So with the help of our trust's QI hub and funding from CLAHRC NWL we set up the project to improve the NIV care for patients by attempting to better understand their experience of NIV and hopefully from that understand how we could improve.

Understanding the patient perspective

Our patient involvement strategy was carefully planned and used a 4Pi approach in line with national improvement standards; if asking patients to be involved it is important to value their time and input and ensure that it is beneficial for you and them. We started with focused interviews with patients and their relatives and carers. The data was thematically analysed and used to inform how the project developed. We wanted to monitor our improvement in a continuous way and developed a brief questionnaire that could be readily used on the wards to continually get patient feedback (Appendix 2).

Amongst lots of other useful information, two unexpected themes came out of our initial work.

1. Patients did not understand NIV, why it was needed, what it did and afterwards they did not understand what had happened to them. This made them anxious, fearful of future admissions and reluctant to have the treatment again – even if it had been successful.
2. Patients felt that the medical staff didn't always understand NIV, that standards of care were very variable, that things were not explained properly and that care was not consistently delivered in the same way. So we asked our staff what they felt and they agreed – they also lacked understanding of NIV and confidence working with NIV patients.

From these themes we developed our approach: by improving the understanding of NIV for both patients and medical staff we hoped to improve NIV care.

QI in action

We used many of the QI techniques described in this BTS QI Tool, but the two that really stood out as making a difference were “stakeholder mapping and engagement” and “using measures for improvement”.

Stakeholder mapping and engagement: it was essential to really understand who needed to be invested in the project and to get them on board with the aims of the work. Stakeholders needed to feel not only involved but to have ownership. It was important to get senior management buy in to the project so that it becomes a high level priority. We used NIV champions to help bring the improvement to the shop floor and had regular meetings and feedback sessions with them; they were involved in the PDSA cycles and took ownership of separate aspects. In this way we developed a large team working towards the same aim.

Measures for improvement: Data are a powerful way of demonstrating the impact of changes and we had the support of the CLAHRC team to help us do this using live P-charts. Having accurate data which reflected changes in real time as we made them was a very useful way to show people that their work was valuable and helped us to evaluate the improvement changes. Data collection is time consuming, so developing a sustainable way of automatically collecting the information should be a priority for projects.

We developed a patient-centred NIV teaching package addressing not only the medical aspects of NIV but also the patient experience. This included an online training video, teaching slide set, local guidelines and a competency framework. For patients we developed a patient experience video explaining NIV, and leaflet (Appendix 3). We also spent time with patients in the community understanding what they wanted. To help to guide management in hospital we developed an algorithm, new guidelines and an electronic acute NIV bundle which included “explaining NIV to patient” as one of its elements.

Outcomes

We have started to see improvement in the care that we deliver. Figure 1 shows how we improved in our documentation with the introduction of the NIV bundle. We saw improvement in the percentage of patients receiving all 5 points in the treatment algorithm for treatment of acute exacerbations of COPD prior to starting NIV (controlled oxygen, steroids, nebulisers, antibiotics and chest x-ray prior to NIV) going from only 12 % at baseline to an average of 70% over the last 2 months of the project 15 months later. Perhaps most gratifyingly, our patient feedback has reflected our efforts to improve their experience and at the end of the project we saw a 33% improvement in positive responses to the questionnaire with the last analysis showing 54% of patients reporting an overall positive experience of NIV.

Ongoing work and challenges

Now we are faced with the challenge of how to make these changes sustainable and how to make the improved quality of care part of business as usual. Staff rotate and new doctors and nurses come in who need training again, new patients get admitted and they and their families often have no knowledge of NIV. Hopefully by developing robust and easily accessible tools to educate both staff and patients we can keep improving the understanding of NIV. By continuing to report our process and outcome measures we hope to respond early to changes in quality of care and by continually asking our patients how we are doing we hope to be able to keep getting better.

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16/09/2018

Percentage of NIV episodes, in which an NIV parameter plan was documented and followed.

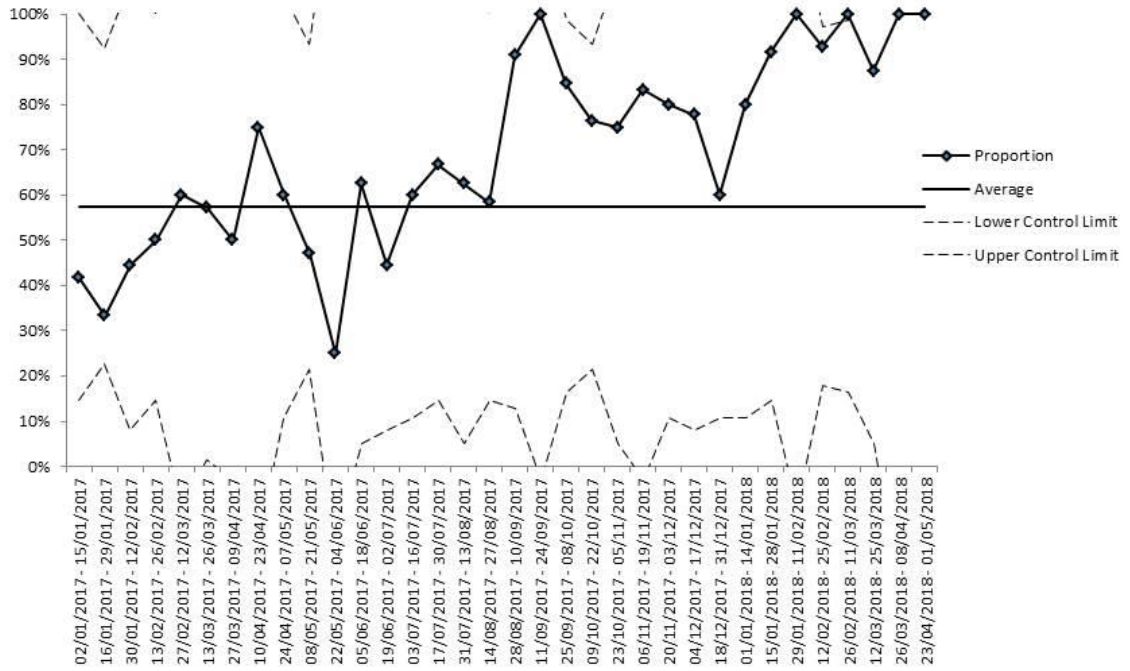


Figure 1: P-chart to show fortnightly percentage of NIV episodes, in which an NIV parameter plan was documented and followed from the 2nd of January 2017 till the 1st of May 2018. The average line is set to the first 20 data points. The percentage increases from approximately 50% to 76% (Note the recalculation is not shown in the image). There is evidence of special cause variation as indicated by a shift rule break (A run of 8 or more points above the average line) from the 3rd of July 2017, which is when the NIV bundle was launched.