Quality Improvement Project using a Telephone Proforma for Children with a Ventriculoperitoneal shunt in situ

St George's University Hospitals NHS Foundation Trust

Maya Lakhanpaul[1], Emily Okerchiri[2], Jessica Walbridge[2], Pushpa Subramaniam[3]

[1] FY2 Doctor St George's Hospital, [2] Clinical Nurse Specialist St George's Hospital, [3] Consultant Paediatrician St George's Hospital

OBJECTIVES

The aim was to determine the usefulness of a **telephone proforma** used in exchange of essential information with parents of children with **ventriculoperitoneal shunt** and it's role in enhancing **patient safety.** Telephone proforma's have been shown to be an effective way of communicating with patients to ensure '**red flag**' **symptoms are not missed** (1,2). Devising a robust telephone proforma to help gather information from parents regarding their children's symptoms will help to minimise ambiguity in advice, leading to fewer serious incidents from missed malfunctioning shunts.

METHODS

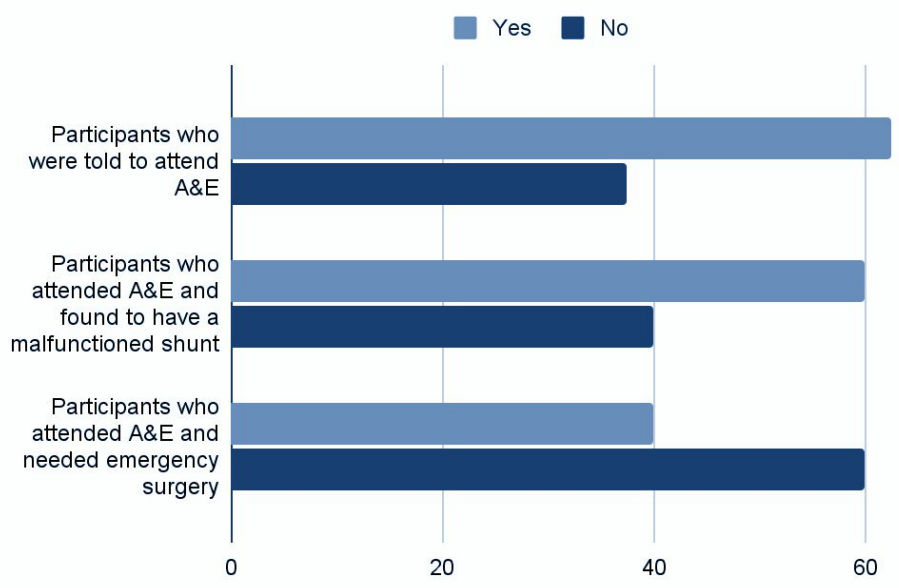
This was a **quality improvement project** which involved **two cycles**. The initial proforma was devised using the **PSDA cycle** alongside **brainstorming with stakeholders.** The proforma was set using two guidelines (3,4) and deemed **accessible** and **easy to fill in** whilst being able to capture maximum information. This first cycle of the proforma was rolled out by Neurosciences CNS in **March to July 2023** and retrospectively analysed. Following the first cycle, additional changes were made to the proforma: addition of the date of birth, information regarding if (and when) the shunt was revised.Information regarding the revision of the shunt was deemed essential, as it helps to identify if there have been any recent complications with the VP shunt. The second cycle of the telephone proforma was audited between **January 2024 and April 2024** and was analysed retrospectively.

RESULTS

During the time frame of January 2024 and April 2024, **8 telephone proformas** were completed. This was an average of 2 phone calls per month. The patient's age ranged from **1 year and 5 months** to **14 years and 0 months.** The median age was 4 years and 7 months. It was noted that the most common reason for a call was the child presenting with a **headache**, with 5 out of 8 of the patient's stating a headache as one of their symptoms. The second most noted symptom was **vomiting** with 50% of telephone proformas (4/8) highlighting this symptom.

Of these, **5 (62.5%) were advised to attend an urgent review in A&E** and 3 (60%) were found to have a shunt malfunction. **2 patients required emergency surgery** whilst one had their shunt tapped. 2 out of 5 (40%) patients who had urgent review did not have malfunctioning shunt and were discharged on that day. 3 out of 8 patients attended a non-urgent ward review and were discharged. Overall in 4 out of 8 (50%), it was a representation.

Table 1: A Table to Show the Participant Outcome from the Telephone Proforma



CONCLUSIONS

This study has shown that using a telephone proforma is an effective way to communicate with parents who are concerned about their child's shunt. It provides a **standardised checklist,** therefore facilitating safe communication and **reducing any misinterpretatio**n and number of **serious incidents** emerging from missed malfunctioning shunts. The data shows that the telephone proforma can correctly identify those patients who needed an urgent review and may subsequently have a shunt malfunction. Being able to **effectively triage** those who need to be reviewed urgently (and those who don't) helps to reduce the burden and waiting times in the paediatric emergency department. Going forward, if this telephone proforma was to be audited again it would be beneficial to separate the 'date of last shunt revision or insertion' in to two separate questions. When analysing the data, it was often difficult to depict whether the date given was for the shunt insertion or shunt revision. This is important as if the shunt has been recently revised, it is more likely to present with another shunt malfunction (5). In addition, it is recommended that this telephone proforma can be **adapted and extended further**, such as in **paediatric emergency departments**.

References:

1. Ventriculoperitoneal Shunt. Fowler JB, De Jesus O, Mesfin FB. [Internet] Jan 2024.
2. Ventriculoperitoneal shunt compilcations: A review. Paff M, Alexandru-Abrams D, Muhonen M, Loudon W. Interdisciplinary Neurosurgery. 2018 Sept; 13: 66-70
3. Patient Information: Ventriculoperitoneal Shunt. NHS University Hospitals Coventry and Warwickshire NHS Trusts. April 2022
4. A Comparative Study Between Laparoscopic and Open Techniques for Insertion of Ventriculperitoneal Shunt for Treatment of Congenital Hydrocephalus. Hannah RS, Essa AA, Makhlouf GA, Helmy AA. J Laparoendosoc Adv Surg Techa A. 2019 Jan; 29(1): 109-113
5. Forty years of shunt surgery at Righospitalet, Denmark: A retrospective study comparing past and present rates and causes of revision and infection. Kofoed Mansson P, Johansson S, Ziebell M, Juhler M. BMJ Open. 2017; 7 (1)