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Introduction

- Parenteral nutrition (PN) is a high alert medication, essential for the survival of infants born preterm.
- European expert guidelines recommend standardised parenteral nutrition (SPN) over individualised (IPN) for most infants, both for patient safety and resource efficiency.¹ There has been a failure to implement this practice, with large variations in the quality and models of PN provision and practices.^{2,3}
- Neonatal units in Ireland have recently introduced an innovative multi-modal nutrition system including two externally compounded SPN bags (cSPN1 and cSPN2) and accompanying clinical decision support tool.³ (Figure 1)

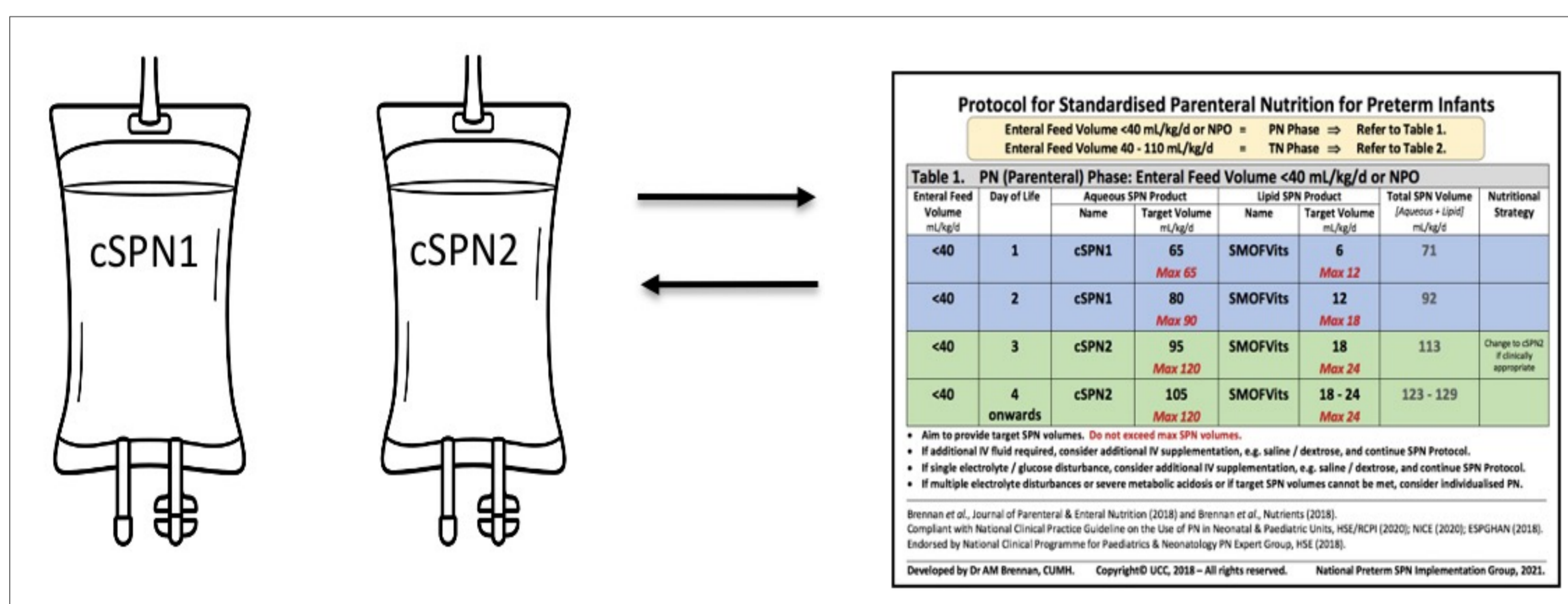


Figure 1: Preterm SPN and clinical decision support tool

- The SPN system, developed over ten years of multidisciplinary (MDT) translational research has demonstrated improved clinical and economic outcomes.^{4,5,6}
- In 2018, the SPN system was endorsed as the national Model of Care for Preterm Standardised Parenteral Nutrition in Ireland and an implementation group oversaw national roll-out, completed in July 2021. (Figure 2)

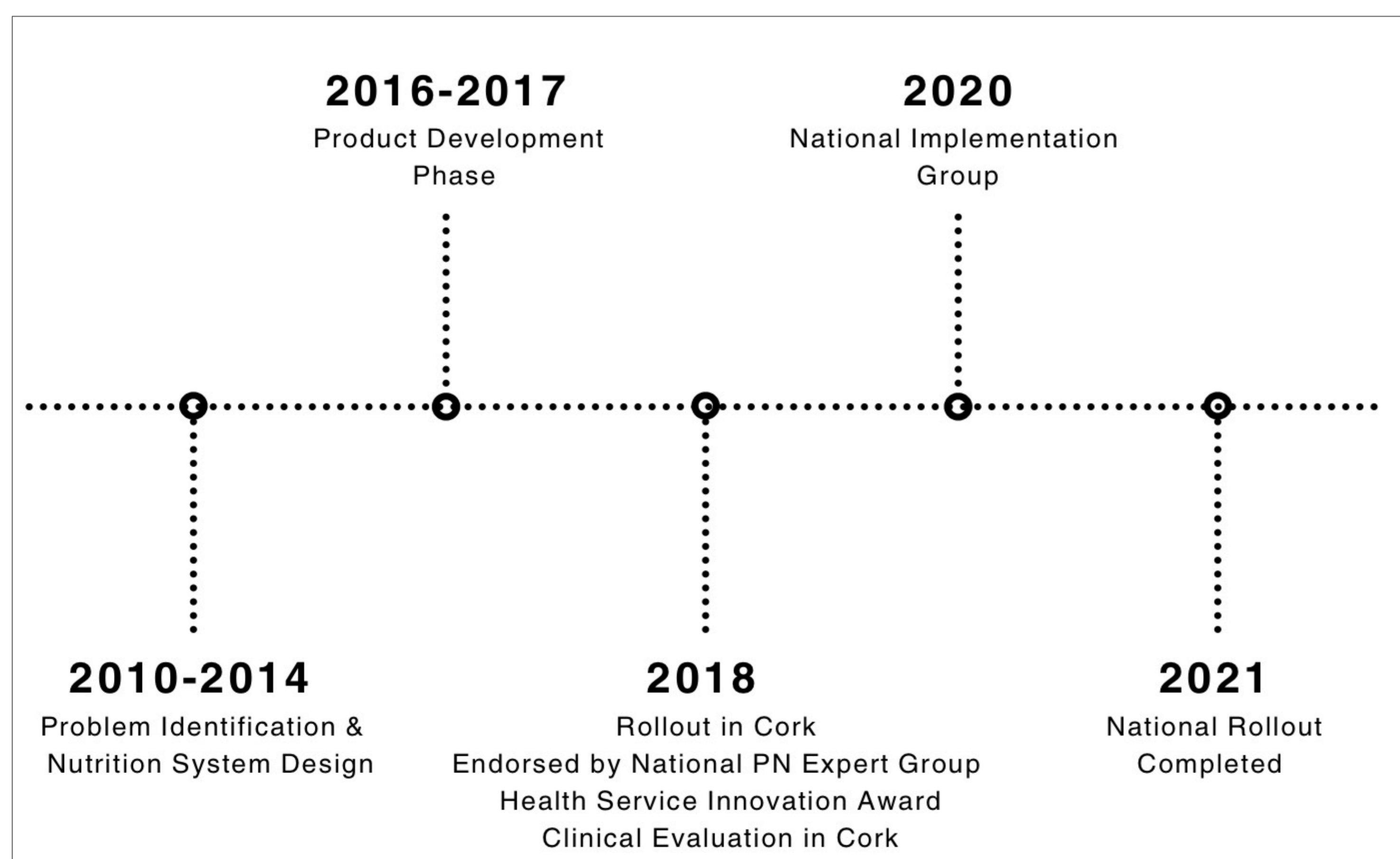


Figure 2: Timeline of National Rollout

Aim

To describe the pattern of preterm PN purchased by neonatal units from before implementation to the completion of national roll-out.

Methods

A retrospective analysis of preterm PN purchasing data from neonatal units (n=13) over 6 years, 2017 – 2022.⁷

Results

The percentage of preterm SPN purchased increased nationally year on year from 56% (3,662/6,522 bags) pre-implementation to 95% (4,823/5,074 bags) in the first full year following roll-out. (Figure 3) This corresponds to a 90% reduction in IPN.

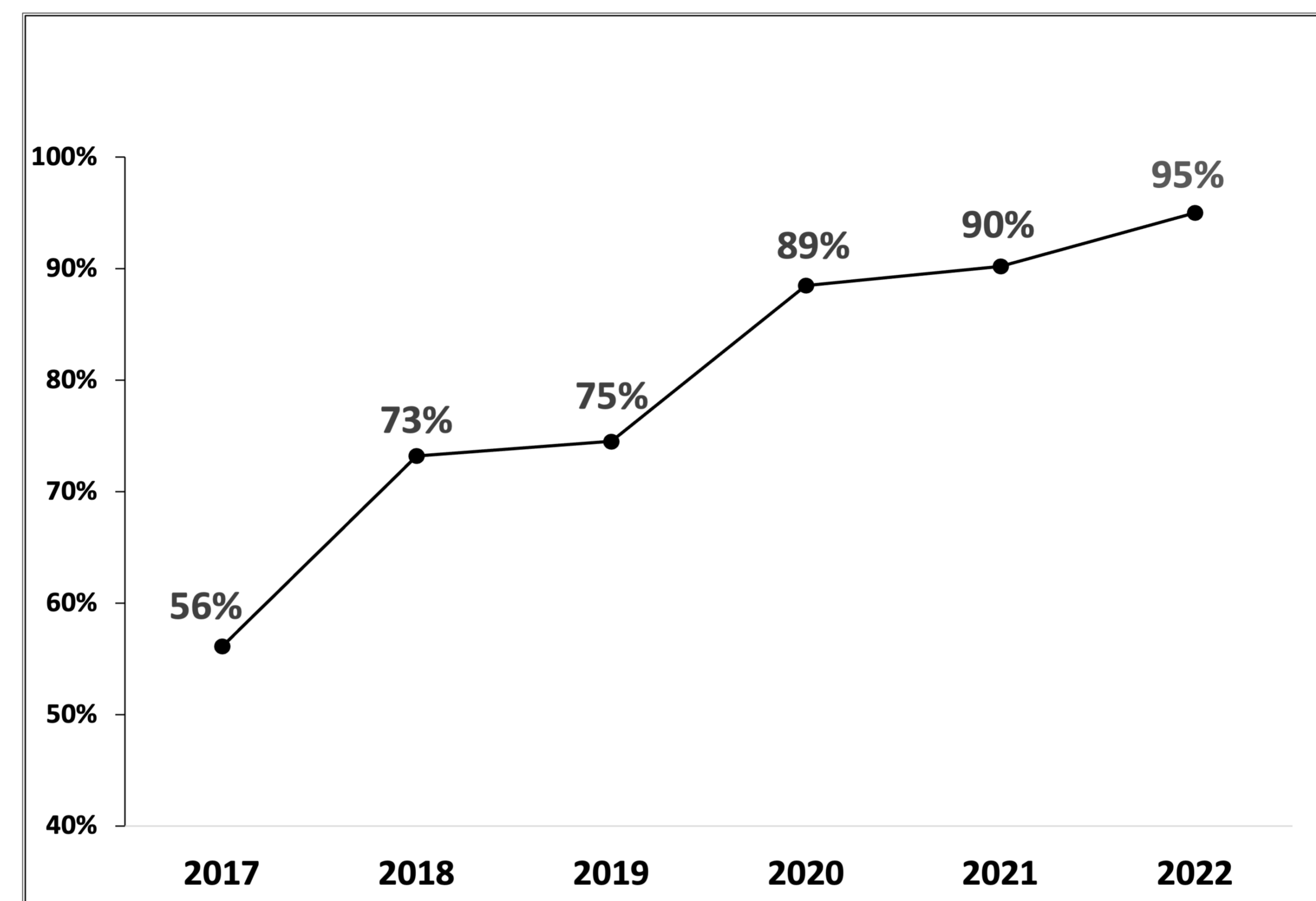


Figure 3: Preterm SPN Purchased 2017-2022

Conclusion and Future Work

Ireland is the first country to report this high level of usage of preterm SPN in neonatal units. Reducing variability in practice, in line with European guideline, delivers safer and more equitable care for this vulnerable population.

A transdisciplinary Employment-Based PhD by a hospital pharmacist, in collaboration with the neonatal MDT, health economists and health information systems is underway. This will evaluate the national implementation of the SPN system, its economic impact and explore future digitalisation. The aim of this research is to inform the future development of the SPN system and facilitate sharing of the Irish experience across Europe.

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Contact

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