



# Using BI to Improve Patient Outcomes by Implementing a Dashboard for the Maternity & Neonatal Network

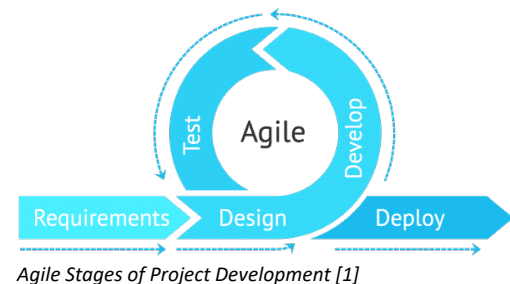
## Introduction

The aim of the project was to implement a dashboard for the Maternity & Neonatal Network that can be used to help improve patient outcomes, using research to help aid in the design of this.

A Magnesium Sulphate case study was used as the main measure to be monitored in the dashboard and it was shown that the rate of uptake of this has increased over the years, leading to several potential cases of Cerebral Palsy being avoided and therefore a future cost saving for the NHS.

## Methods

The Research Onion was used for the research method, with a positivism philosophy and deductive approach to best suit the project. While a PRINCE2 Agile framework was followed as a developmental methodology to create the final product.



## Aims

- Research BI implementations in the wider industry and understand whether the implementation has aided in improving patient outcomes, in particular the use of dashboards.
- Research Dashboard Design and User Experience to aid in the development of the dashboard.
- Implement a MVP dashboard for stakeholders to use to improve patient outcomes.

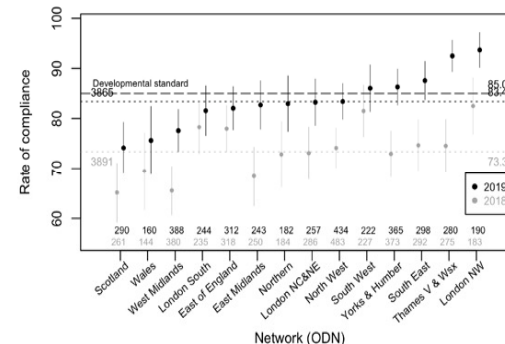
## Objectives

- Investigate literature and wider case studies to understand the benefits of implementing a BI solution, and to aid in the development of the dashboard.
- Use the PreCePT Programme as a case study to improve Magnesium Sulphate data in Wales.
- Case study of a dashboard being implemented within the NHS.
- Look at examples of Dashboard designs and the user experience to aid in the design of the MVP dashboard.
- Hold stakeholder meetings to understand user requirements and gain feedback.

## Research

From reading various literatures and case studies it was clear to see that implementing a dashboard within an organisation can bring many benefits. In particular, it was very positive to see how the implementation of a dashboard within the NHS has improved the patients care and provided strong evidence to back the project in the network of implementing a dashboard to help improve patient outcomes.

The Magnesium Sulphate case study also provided evidence of a simple and effective measure to consider bringing into the dashboard to monitor in order to help the improvement. There are clear benefits from this such as improved patient outcomes as well as a substantial NHS cost saving.



Caterpillar plot of the rates of compliance for administration of magnesium sulphate: neonatal networks, 2018 and 2019 [2]

## Design & Implementation

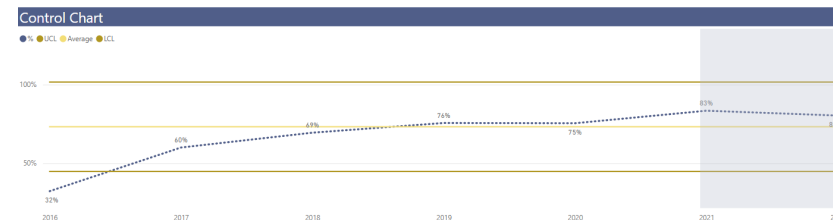
The design and development phase of the project looked to establish strong relationships with stakeholders and understand their requirements using a MoSCoW analysis. This was followed by exploring GDPR guidance and ensuring the network was compliant with this.

A MVP dashboard was created using the principles and literature reviewed, for example the principles which help produce a well-designed dashboard. This was deployed and presented to stakeholders for feedback, which showed that their requirements were met, with some further recommendations and improvements for future iterations, which were completed to produce the final product.

## Results

The SPC chart below, shows the progress of administrating Magnesium Sulphate for Wales.

The highlighted sections of the chart are unpublished data so this is a predication of what the rate will be in these years. This is calculated using the NNAP methodology and is updated accordingly if this changes. Having this ability is a big improvement, as being able to monitor and predict any dips in progress can be detected early and be rectified accordingly.



## References

- [1] J. Dudovskiy, "Research Philosophy," Business Research Methodology, [Online]. Available: <https://research-methodology.net/research-philosophy/>. [Accessed 28 11 2021].
- [2] RCPCH, "National Neonatal Audit Programme 2020 Annual report on 2019 data," RCPCH Audits, London, 2022.