



# NETIMIS

## CASE STUDY

Using NETIMIS to investigate alcohol-related admissions and model variations in patient demographics to better understand the care pathway in the North West Coast

Client: North West Coast Connected Health Cities

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# Overview

The NHS is facing increasing demand to provide a high-quality service for modern health problems with its limited resources to support growth which has been described as “the biggest challenge in its existence” (MyHealthNHS 2018). To tackle these challenges, the government has funded a £20 million programme across the North of England called CHC (Connected Health Cities). CHC aim to better understand and apply healthcare data to improve the effectiveness and efficiency of the NHS.

This project involves a collaboration with the University of Liverpool, from CHC's North West Coast division, and X-Lab, from the Connected Yorkshire division of CHC, to construct a real-world representation of the healthcare system for alcohol misuse care with a focus on alcohol related admissions.

## About

Across the North West Coast, “alcohol admissions are rising by 11 per cent each year and the NHS cannot sustain this.” As a result of the current drinking culture, alcohol misuse is leading people to develop chronic diseases, such as Alcohol-Related Liver Disease (ARLD), with new figures showing a lower survival rate than most common cancers. It is part of the North West Coast's initiative

to improve the healthcare systems and support clinical professionals through a better understanding of healthcare data.

The University of Liverpool have created a data framework to practically apply historical patient data to better understand and plan for future patient care. Pairing the newly created data framework and X-Lab's simulation software tool, NETIMIS, a detailed model of the care pathway can be produced. This visual model will provide a greater insight into the patterns of care and a deeper understanding of the health needs of patients in this area.

## Challenges

The main challenges of improving the alcohol admission rate is to gain a clearer understanding of the current alcohol admission care pathway to better accommodate and manage the growing number of patients on the North West Coast. To accomplish this, a method must be constructed to properly utilise the Connected Yorkshire approach with the historical patient data provided by the University of Liverpool. To develop a true representation of the care pathway, a balance between the qualitative and quantitative data must be found.

## Method

By replicating the Connected Yorkshire approach in the North West Coast to visually map care pathways, a realistic model can be produced. The process of constructing the model is a combination of qualitative and quantitative investigation. Most of the structural data was collected by interviewing NHS staff members, conducted by members of the University of Liverpool. This information was then used to develop the NETIMIS model structure; the model was populated with real patient data values from the University's data framework.

## Solution

To gain a deeper understanding into alcohol admissions, multiple models will be created. The structure of the models will remain constant but the data populating them will change to show how different patient demographics flow through the care pathway. This will show how different types of patients interact within the system and their distribution throughout the pathways and services.

## Conclusion

Through a successful partnership with the University of Liverpool and X-Lab, multiple models have been created to visualise different patient demographics for alcohol admissions across the North West Coast. Using an intuitive simulation software tool, NETIMIS enables intelligent models to visualise a clear, real-world representation of the alcohol admission healthcare pathway. By following the Connected Yorkshire innovative approach to modelling care pathways, supported by the data framework developed by the North West Coast, it proves transferability of CHC assets at scale and across regions.

## References

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LiverpoolAlcoholService (2011). City Alcohol Service Launches. [online] Available at: [http://www.liverpoolalcoholservice.nhs.uk/aboutus/news/City\\_Alcohol\\_Service\\_Launches.aspx](http://www.liverpoolalcoholservice.nhs.uk/aboutus/news/City_Alcohol_Service_Launches.aspx) [Accessed 1 Apr. 2018].

# All Alcohol Admissions Care Pathway Within the North West Coast

