WNB AI Innovation Programme

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Alder Hey Innovation

Today's Child, Tomorrow's Healthier Adult

WNB AI Innovation Programme: Background

Problem:

- In England 2018/19, almost eight million outpatient appointments were not attended, costing around £1 billion. More than 15% of the missed appointments were for patients up to 19 years old for £150m. Across the 10 trusts involved at the time this equated to:

Rate of WNB (mean, lower and upper limit)	6.7%-11% Mean: 9.3%
Total missed appointments	110,078
Total cost	£13.2m

Solution:

- £1m funding invested in the technical implementation of a WNB AI tool which provides services with cutting-edge technology that automatically identifies risk factors which a human clinician would need to amass from multiple sources.
- It allows Trusts, services and individuals to identify in advance which patients need support in accessing their appointment and intervene, resulting in increased attendance, reduced WNB rate, re-allocated released appointments, and a reduction of waiting lists.

Alder Hey WNB AI predictor tool – embedded this innovation across 10 Trusts:

- **Selection process** of Alder Hey AI tool on Was Not Brought.
- **All 10 Trusts** signed a data sharing agreement and financial governance.
- **User testing** and rollout across Trusts.
- **Product development** to ensure commercially viable.
- **Continuous improvement** through lessons learnt and evaluation.

"It was convenient, no travel time for either of us, less disruption and the appointment was on time so no waiting - brilliant service!"
Leeds

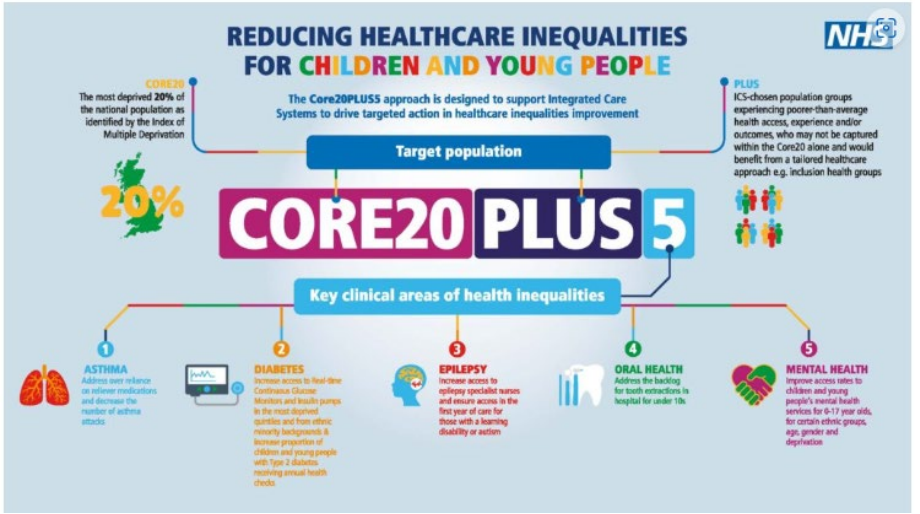
"The pilot data speaks for itself, results are showing more than a 50% reduction in WNB rates."
Ophthalmologist, Alder Hey

WNB Interventions: Approach to using AI to tackle health inequalities

CHA Intervention Leads developed interventions which use the WNB predictor tool to reach the children who are at risk of missing their appointments

Working together the CHA trusts have designed CYP appropriate interventions including:

1. **Free** transport
2. **Appointments** in schools
3. **Additional** clinical conversations or MDT's
4. **Focussed** clinical support.
5. **Interrogating** patient portals



"It was convenient, no travel time for either of us, less disruption and the appointment was on time so no waiting - brilliant service!"

Leeds

"I really feel valued, with a clinician making the call and being listened to".

Patient, Alder Hey

"Students felt better as they were not missing school time."

Teacher, Leeds

Methodology

7400+

Pieces of intervention data collected

- Quantative data actively collected by each Trust using an agreed standardised approach

245

Pieces of Parent/Carer feedback collected

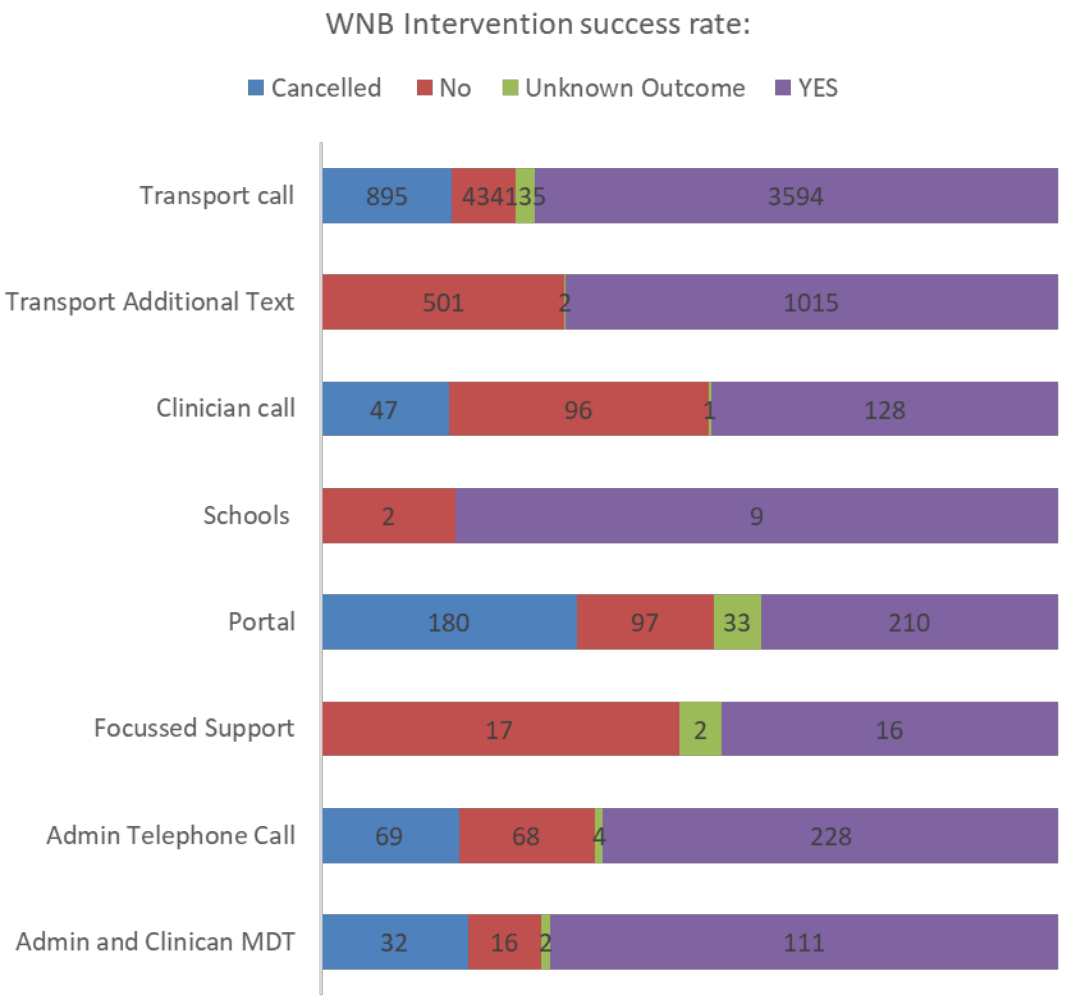
- Each Trust were expected to have meaningful conversations with families to prompt them to consider any barriers they may face with attending an appointment

10

Trust reflection workshops held

- Sessions held with all staff members involved in Trust pilots to gain an understanding of key benefits, challenges and ideas for improvements when implementing an innovation project.

Was the intervention successful?



The WNB evaluation has collated and analysed 7944 WNB AI interventions. The biggest drivers for a WNB are the waiting date since bookings are made and the time to treat the impact on WNB rates within all trusts. Overall, 69% attended the appointment and a further 20% cancelled and rebooked their appointment after an intervention.

Difficulties:

- **Capacity and competing priorities** were the biggest barriers for operational staff delivering the pilot interventions.
- **Data quality and incorrect demographics** data were a source of frustration “wasting valuable time” trying to deliver the interventions.

Lesson learnt:

- **Internal communication,** staff were empowered by the positive impact they were making to vulnerable families and the reflection workshops captured their motivation at providing patient centred service improvement initiatives.

- WNB AI algorithm highlighted **the different levels of digital maturity** across the paediatric trusts understanding their clinical systems state of readiness to integrate digital technologies, for wider deployment their should be an agreed criteria and thresholds.

- **Better collection and reviews of patients demographic data** would improve contact with patients and families. A significant proportion of the referral were internal, which leads to poor information being passed from service to service.

- **Capacity** was an issue and contacting patients did provide them with an additional opportunity to cancel. Longer term models should include administration and clinical capacity to ensure interventions are safe and effective. The CHA PMO model of support was also seen as a positive having oversight of the whole programme managing risks and issues and facilitating opportunities to collaborate.

Talking to patients is the best way to get to know more about them- the information from this project can be beneficial to so many services.

Recommendations:

- **Business Intelligence and Operational Capacity** - Having technical and operational capacity to produce, interpret and validation the data is really important.

- **WNB AI & Clinical EPR system interoperability** – Both Alder Hey and Sheffield automated some of the WNB AI processes linking it with the EPR to improve efficiencies creating dashboards and text messages, the learning from the pilots will be shared across the CHA.

- **Adoption and Spread** – We are working with all trusts to make sure the best practises are implemented and the WNB AI tool is spread across Outpatient services. Over thirty members of staff were interviewed as part of the evaluation reflection workshops and the majority welcomed the development of health inequality focussed interventions recognising the need for targeted action.

- **DNA/WNB AI NHS Product and Pipeline** – Alder Hey Innovation Centre are currently working on a WNB commercial model in response to interest received nationally. Looking at other speciality models, for example Women's, Adults and CAMHS, respectively.