Managing uncertainty throughout rapid evaluations

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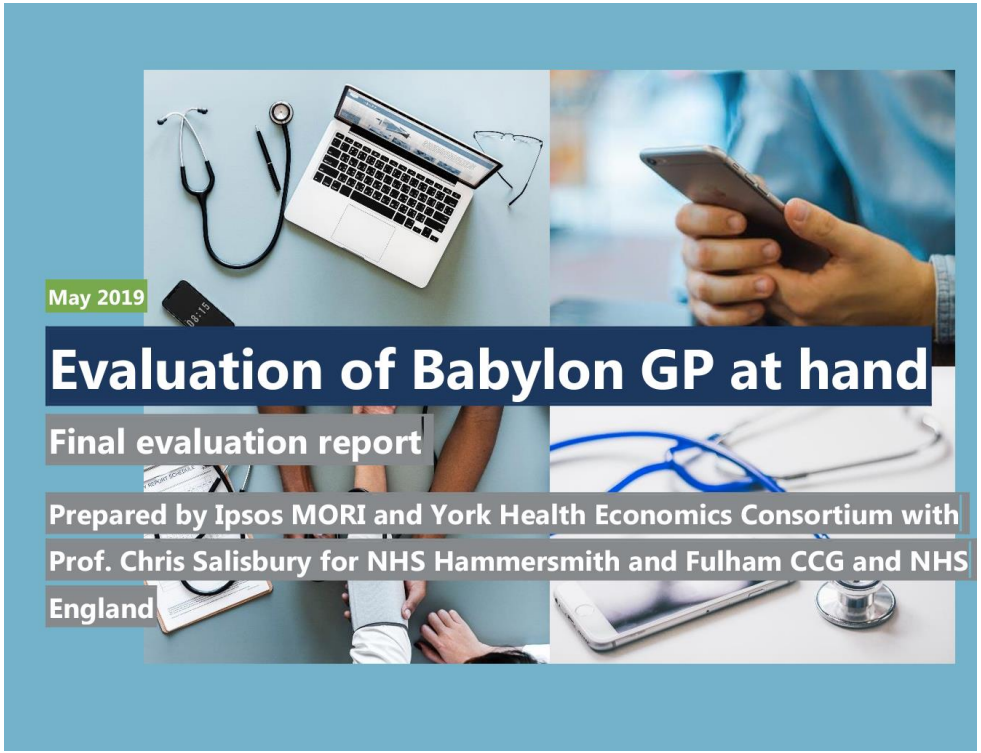
The Health Foundation

Why is it important?

	It works	It doesn't work
People think it works		Costs of intervention, no benefits or harm caused
People think it doesn't work	Costs of intervention saved but benefits foregone	

Source: Data availabilty



"Babylon were unable to provide data on the outcomes of patient consultations in terms of onward referrals and there were no data on presenting conditions.

Information considered by Babylon to be commercially sensitive cannot inform the report. In particular, it has not been possible to include data relating to the cost of Babylon of establishing and running the service."

Source: Data quality

1 Evaluation of the new care models: Main findings

Key messages

- **There is evidence that the multi-speciality community provider (MCP) and primary and acute system (PACS) vanguards have had an impact on reducing emergency admissions after the first three years**. They have had **slower growth in emergency admissions per capita** than non-vanguard areas of the country; between 2014/15 and 2017/18 MCP emergency admissions grew by 0.6%, PACS by 2.6%, and non-NCM areas by 6.9%.
- **Vanguards also reduced emergency bed days**: in MCPs by 0.7%, PACS by 1.5%, compared to an increase in non-NCM areas of 1.7%. Non-emergency bed days increased by more in vanguard than non-vanguard areas. One explanation for this might be **that vanguards have used the hospital capacity liberated by the slowed growth in emergency activity to deliver more elective care.**
- These findings present an emerging positive picture. However caution should be exercised in interpreting **the scale of the difference between vanguard and non-vanguard areas, and the extent to which flagship interventions (e.g. risk stratification or MDTs) were the primary cause of slower growth in emergency admissions.**
- In some cases, MDTs may have led to increased emergency admissions, through addressing unmet needs. This phenomenon is also seen in the wider literature, with some studies suggesting benefits are seen in the third year – beyond the scope of our evaluations. They may also have led to higher quality of care for patients and may help reduce health inequalities.

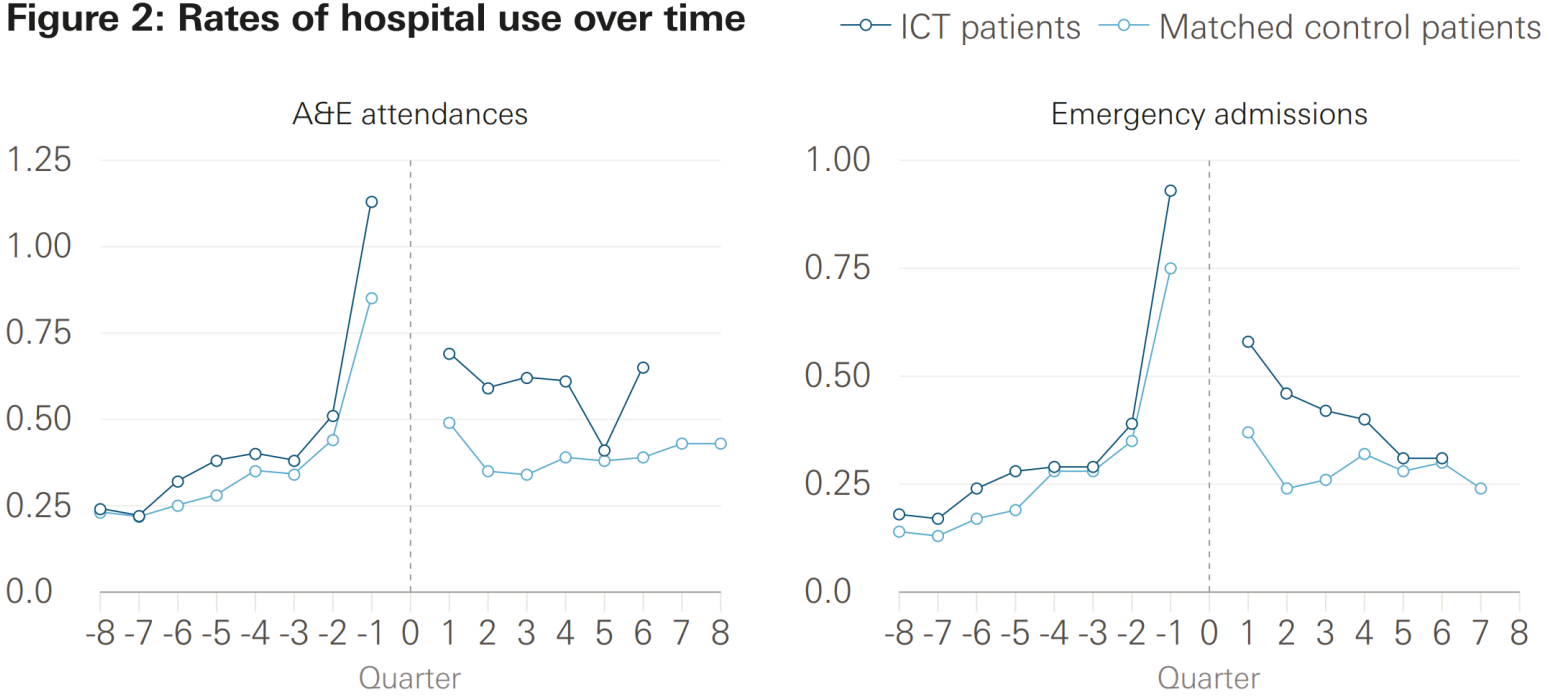
The analysis was based on data drawn from the Secondary Uses Services repository. System changes implemented in some of the vanguards over the programme led to newly coded activity and also recoding of activity.

Although there were changes in non-vanguard areas, recoding that diverts patients activity from an admission to another part of the system may have been more common in vanguards because of the incentive created by making year 3 funding conditional upon achieving certain levels of reductions in emergency admissions.

Source: Analytical methods

Improvement Analytics Unit briefing September 2018: the impact of integrated care teams on hospital use in North East Hampshire and Farnham

Figure 2: Rates of hospital use over time



Source: Analytical methods

When interpreting these findings, it is important to remember that the ICT and the matched control group might have differed in unobserved ways (for example, in their degree of family support, social isolation or severity of or ability to manage their health conditions) and we could not adjust for these statistically as we did for age, prior admissions and health conditions.

Source: Interpretation

When interpreting these findings, it is important to remember that the ICT and the matched control group might have differed in unobserved ways (for example, in their degree of family support, social isolation or severity of or ability to manage their health conditions) and we could not adjust for these statistically as we did for age, prior admissions and health conditions.

In the absence of a randomised controlled trial, we cannot be sure whether the higher rates of emergency hospital use could be explained by unobserved differences in the characteristics of the two groups. However, it seems unlikely that unobserved differences could explain the much higher emergency admission rates amongst the ICT patients. Furthermore it is very unlikely that any such differences could hide a decrease in hospital use. Therefore, we interpret the findings to show that the ICTs did not reduce A&E attendances and emergency admissions in the early stages (first 23 months) of its implementation and may even have led to increases. Other evaluations of ICTs and similar interventions have reached similar conclusions.[1,2,3,4]

Tips for communicating

Educate customers and decision makers: uncertainty, counterfactuals, regression to mean

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Quantify uncertainty: best guess + confidence intervals, degree of uncertainty

Table 2: Summary of hospital utilisation – 2014/15 to 2017/18[17]

Metric	Result	Chance of result emerging by chance[18]
Emergency admission	Emergency admissions have grown by 1.5% which is 4.5% below the national growth	0.1%
Emergency admissions lasting 2+ days	NCM emergency admissions of 2 or more days have grown by 0.5% which is 1.7% below the national	8.5%
Total bed days	NCM total bed days declined by 1.1% which is 0.6% greater than the national decline of 1.7%	50%
Emergency bed days	NCM emergency bed days have declined by 1.1% which is 2.5% below the national growth	6-10%

The figures show that on emergency admissions, it is highly unlikely that the result would have emerged by random chance. However, looking at two metrics which try to remove some of the possible data coding issues related to looking at admissions – emergency bed days and 2+emergency admissions – there is a much less certainty about this. **This analysis does not therefore support that vanguard actions have caused all differences observed.**

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Quantify uncertainty: best guess + confidence intervals, degree of uncertainty

Guide decisionmakers in using evaluation findings: generalisability, causation/correlation, impact of making wrong decision, communication


I'm Cautiously Optimistic
I'm Completely Certain
I'm mildly encouraged
I'm Statistically Significant
I'm Being Misquoted

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