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Brokering Innovation Through Evidence

Evaluation of interventions to reduce unplanned admissions.

What did we aim to achieve?

Increases in health care utilization threaten the sustainable provision of health care within current funding constraints. Many health systems are, therefore, developing new approaches to reduce unplanned hospital admissions. Two key approaches have been implemented in Liverpool - the introduction of Integrated Care Teams and the Local Quality Improvement Scheme (LQIS). Utilising methods developed through the Health Foundation Rapid Intervention Causal Evaluation (RICE) project we aimed to estimate the impact that these interventions had on unplanned admissions and whether these effects differed between places based on their level of deprivation.

What were the interventions?

Integrated Care Teams (ICTs). ICTs were introduced in Liverpool in 2017 bringing together existing community teams. This established direct referral to ICTs for people who required multidisciplinary support due to complex health and social conditions. A bespoke team is brought together for each person based on their needs including: GPs, clinical specialists, community nurses, palliative care nurses, mental health workers, social workers and third sector advocates. Weekly ICTs are chaired by clinical care-coordinators, who develop personalised plans including goals and review points. A case manager is responsible to oversee and review the patient's goals and plan. The annual cost of the ICT programme is approximately £300,000 and the service sees around 700 patients a year.

The Local Quality Improvement Scheme (LQIS). LQIS was introduced in 2011 to all GP practices in Liverpool to increase more equitable investment in primary care and provide incentives for quality improvement. Prior to the introduction of LQIS there was considerable variation in funding between practices, after its introduction an additional £30 million was invested in GP practices between 2011 and 2016 ensuring each practice received a minimum of £90 per needs weighted population. Receipt of this additional funding was conditional on achieving a set of 13 key performance indicators. One of these included a reduction in emergency admission for ambulatory sensitive conditions.

What did we do.

To understand the impact of these initiatives we needed to compare what happened to emergency hospital admissions after the intervention to what we think would have happened in the absence of the intervention. To do that we matched those receiving the intervention to a comparison group that was similar in all respects that we can measure, except that they did not receive the intervention. We then compared emergency hospital admissions before and after the intervention in these two groups. The change in admission rates in the intervention group compared to the change in the comparison group provides an estimate of the impact of the intervention on emergency admissions.

For the ICT we constructed a comparison group from other people in Liverpool, using electronic health records, who were similar in terms of age, gender, deprivation, number of medications, chronic conditions and previous emergency admissions.

As the LQIS intervention involved the whole population of Liverpool we constructed a control group of small geographical areas outside of Liverpool, that were similar in terms of age and gender profile, trends in emergency admissions, deprivation and trends in unemployment.

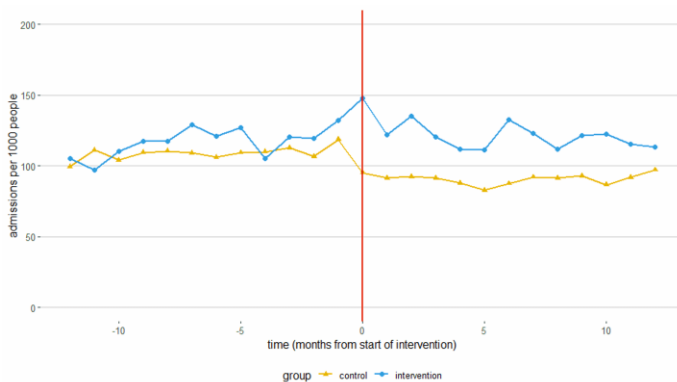
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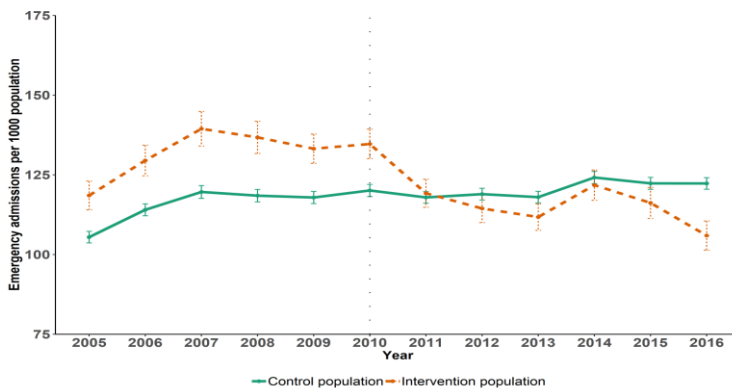
What did we find?

We found that the introduction of ICTs was not associated with a reduction in emergency admissions of people receiving the intervention compared to the comparison group.[1] The introduction of LQIS however was associated with a reduction in emergency admissions, which fell by 19 per 1000 people following the intervention (95% CI: 17 to 21) compared to the control. This effect was greater among more disadvantaged populations, narrowing socioeconomic inequalities in emergency admissions. The LQIS intervention was associated with 78,000 fewer emergency admissions over the 6 years of the intervention period (2011-2016).

Admission rates for ICT before and after intervention in the intervention and comparison groups



Admission rates for LQIS before and after intervention in the intervention and comparison groups



Conclusion.

- Integrated Care Teams alone are unlikely to reduce unplanned emergency admissions. Further evaluation should investigate whether they have beneficial impacts on quality of life.
- Investing in a local primary care quality improvement scheme co-produced with GPs that improves the level and equitable distribution of investment alongside performance incentives can be effective at reducing demand on secondary care.

What does this mean for practice?

Our analysis shows that the multidisciplinary care teams did not lead to a reduction in emergency admissions. This is broadly consistent with previous research which has failed to show an impact on unplanned care from similar initiatives (Stokes 2015).

We did however find that a GP quality improvement scheme was associated with a reduction in emergency admissions. While the evidence for other similar schemes has been more mixed (Harrison et al., 2014; Roland & Guthrie, 2016; Ryan et al., 2016) our more positive findings may reflect the relatively unique aspects of the intervention e.g.:

- A significant increase in overall funding rather than just reallocating a portion of current funding into a performance incentive scheme.
- A more equitable distribution of resources relative to need.
- The development of the scheme by GPs could have led to better design of performance indicators and greater sense of ownership leading to greater changes in practice.

References

[1] Piroddi R, Downing J, Duckworth H, Barr B. The Impact of an Integrated Care Intervention on Mortality and Unplanned Hospital Admissions in a Disadvantaged Community in England: A Difference-in-Differences Study. *Health Policy*, 23 March 2022. <https://doi.org/10.1016/j.healthpol.2022.03.009>.

[2] Khedmati Morasae E, Rose TC, Gabbay M, Buckels L, Morris C, Poll S, Goodall M, Barnett R, Barr B. Evaluating the Effectiveness of a Local Primary Care Incentive Scheme: A Difference-in-Differences Study. *Medical Care Research and Review*, 29 July 2021. <https://doi.org/10.1177/10775587211035280>.