Opinion
Volume 10:11, 2022

Journal of General Practice

ISSN: 2329-9126 Open Access

A Programme Study of the Influence of a Community Nursing Programme on Healthcare Usage

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Introduction

To address the social and medical demands of high-need, high-cost patient populations, a number of care coordination and delivery methods have been deployed. However, the evidence on the efficacy of such models is mixed. The goal of this research is to see if the Community Health Team (CHT) programme, a community-based care management programme in Rhode Island, had any effects on health care utilisation and cost. The highest 5% of users account for roughly half of total health-care spending in the United States. High utilizers frequently have untreated; severe health conditions that necessitate repeated hospitalisation. Payers across all markets, including Medicare, Medicaid, and commercial insurers, have been experimenting with various care coordination models in an effort to improve care quality and cut costs for heavy utilizers. The Camden Coalition of Healthcare Providers promoted one approach in particular, which drew national attention. The Camden approach brings together an interdisciplinary team, frequently a combination of nurses, community health workers, and behavioural specialists, to recognise not only the medical but also the social requirements of high utilizers. The Camden model has been implemented by many care groups across the country [1].

Despite the popularity of these care coordination approaches, which address both medical and social requirements of high utilizers, the data on their efficacy is mixed. Although some reviews of these models found significant improvements in care quality and decreases in usage and spending among participants, others were equivocal. Small sample sizes or a lack of a suitable control group sometimes limit such studies. Important factors that could skew the study results are neglected in the absence of a similar control group, because participants in these models are frequently chosen based on their current health care utilisation. Even if no intervention is provided, a reduction in consumption is to be expected as the severity of their condition improves [2].

The Community Health Team (CHT) programme, a community-based care management programme implemented at the Thundermist Health Facility, a federally designated health centre in Rhode Island, was examined in this study. Our research offers various advantages over earlier research. For starters, the CHT programme did not limit patients to a specific population, such as those with a particular coverage type or chronic disease. This enabled us to investigate outcomes in a larger population than prior research could. Second, we examined utilisation and expense patterns using the state's all-payers claims database (APCD), which comprises deidentified enrollment files and health care claims from Medicare, Medicaid, and the state's nine major commercial health insurers. Every year, the Thundermist Health Center treats around 51,000 patients. 9 A multidisciplinary team of nurses, community health workers, mental health care managers, and administrative and management support professionals comprise the Thundermist CHT programme. The programme extends primary care at the centre by providing social and behavioural health support, care coordination with health care professionals, chronic disease management, and follow-up treatment after ED visits, hospital hospitalisations, or transfers from skilled nursing facilities. It also offers nonmedical assistance, such as applications for social services programmes (e.g., housing, transportation, and financial resources) and assistance with entitlement programmes like Medicaid and Social Security disability benefits [3].

We used APCD data from Rhode Island from 2014 to 2018. Nearly 85% of the state's population is represented by deidentified data in the APCD. We included 2282 of the 3393 CHT patients for whom we were able to get enrolment and claims records from the APCD in our analysis. We employed a propensity score matching (PSM) technique to find prospective comparison individuals from the APCD sample, which produced a propensity score based on a bivariate logit model. The propensity score was then used to generate a matched comparison group with comparable baseline characteristics to the intervention group. Individual matching was performed using one-to-many matching without replacement. A mix of demographic factors, CHT's selection criteria, and comorbidities were used to match variables [4].

Description

A propensity score-matched DID framework was used to evaluate the difference in outcomes between CHT patients and comparison group patients months before and months after the start date of the programme. There were two types of outcomes studied: use and cost. The cost outcomes were inpatient cost, outpatient cost, professional cost, pharmacy cost, and total cost, while the utilisation outcomes were ED visit rate and hospitalisation. The approach used to categorise health services into these outcomes was based on the Health Care Cost Institute's 2017 Health Care Cost and Utilization Report. Despite the fact that both sets of outcomes were modelled using generalised linear models, utilisation outcomes were modelled using a negative binomial distribution with a log link and cost outcomes were modelled using a gamma distribution with a log connection [5].

Estimates were given as incidence rate ratios as relative effects (IRRs). A lower IRR suggested that the CHT programme was related with a drop in outcome, whereas a higher IRR indicated that CHT was associated with an increase in result. The parallel trends assumption was met by all matched models. The person-month was used as the unit of analysis, and covariates included demographics and comorbidities, the number of face-to-face contacts between patients and the CHT, and month fixed effects. At the individual level, robust standard errors were utilised to adjust for heteroscedasticity. Details on parallel trends can be found in eAppendix Part A, and the regression specification can be found in appendix Part D. The effects varied greatly across patient subgroups. There was a significant decrease in ED visits, hospitalisations, inpatient cost, outpatient cost, professional cost, and total cost for patients in the low subgroup. Although no statistically significant effects were detected for individuals in the medium category, patients in the high subgroup had an increase in pharmacy and total costs.

This study assessed the effects of the CHT programme, a community-based care management programme in Rhode Island, on health care utilisation and cost using APCD data. Overall, the approach reduced hospitalisations

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Received: 02 November, 2022; Manuscript No. JGPR-22-84943; **Editor Assigned:** 04 November, 2022, PreQC No. P-84943, **Reviewed:** 17 November, 2022; QC No.Q-84943, **Revised:** 22 November, 2022, Manuscript No. R-84943; **Published:** 28 November, 2022, DOI: 10.37421/2329-9126.2022.10.483

and inpatient costs associated with hospitalisations. Hospitalizations could have been reduced, for example, since the programme assisted patients with medication adherence by assisting them in devising and adhering to a drug plan. Similarly, the initiative may have avoided unnecessary hospitalisations by assuring prompt referrals to counsellors and physicians, including specialists. Reduced hospitalisations most certainly resulted in lower inpatient costs. Patients in the low grouping (those who had just one or two experiences with the CHT programme) experienced a drop in all outcomes except pharmacy cost, which remained unchanged.

The findings for this subgroup may imply that the health care costs and use associated with this grouping were less complex and more immediately manageable, and that they may be effectively addressed by an intervention, such as CHT, that caters to both medical and nonmedical requirements, which reveals that participants in the low subgroup had a lower likelihood of having numerous chronic diseases or being dual-eligible. The increase in pharmacy expenses among patients with more than six interactions shows that patients' diseases require longer-term monitoring and management. This subgroup is also more likely to have insecure housing, which might limit access to prescription medications and affect health outcomes. The rise in pharmaceutical prices could imply that the participants in this study.

Conclusion

Our research has limitations. First, because the intervention was personalised to each patient's particular needs, we were unable to determine the specific programme qualities that resulted in changes in our outcomes. Second, we had no idea what the patients' final status was in the programme (ie, whether they had graduated or were still engaged by the end of our study period). Nonetheless, our findings show that over 95% of research participants were enrolled for at least a year. Third, the PSM technique is dependent on observable characteristics and does not take unobserved confounders into consideration. Finally, the APCD database's lack of statistics on health care utilisation does not imply that uninsured people did not receive medical care. These individuals are more likely to receive uncompensated/charity care.

Acknowledgement

None.

Conflict of Interest

None.

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How to cite this article: Davidson, Patricia. "A Programme Study of the Influence of a Community Nursing Programme on Healthcare Usage." J Gen Prac 10 (2022): 483.