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Association of Rideshare-Based Transportation Services and Missed Primary Care Appointments: A Clinical Trial

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Abstract

In a pragmatic trial, offering complimentary ridesharing services broadly to Medicaid patients did not reduce rates of missed primary care appointments. The uptake of free rides was low, and rates of missed appointments remained unchanged at 36%. Efforts to reduce missed appointments due to transportation barriers may require more targeted approaches.

Keywords
ridesharing, Lyft, primary care, Medicaid

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KEY**FINDINGS**

In a pragmatic trial, offering complimentary ridesharing services broadly to Medicaid patients did not reduce rates of missed primary care appointments. The uptake of free rides was low, and rates of missed appointments remained unchanged at 36%. Efforts to reduce missed appointments due to transportation barriers may require more targeted approaches.
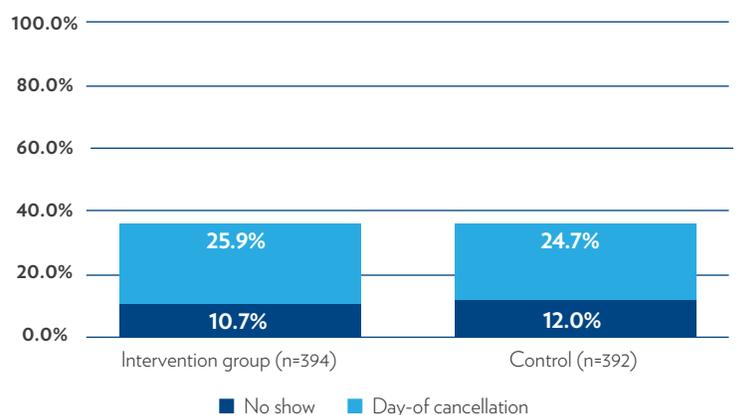
THE QUESTION

Low-income patients frequently report unreliable transportation as a reason for missing medical appointments. Lack of reliable, affordable transportation may have significant costs: outpatient care becomes less convenient and patients are more likely to use expensive acute care settings for care.

Medicaid coverage includes non-emergency medical transportation as a benefit, and in most states, does not discriminate based on need. However, the service may not fully address patients' transportation needs because it requires days of advance planning and uses indirect routes. In contrast, ridesharing services such as Lyft and Uber are commonplace, affordable, direct, and available on demand. As a result, an increasing number of partnerships have been forming between these companies and hospitals or non-emergency transportation companies. Can offering complimentary ridesharing to Medicaid patients improve appointment keeping and reduce emergency department (ED) visits? The authors randomly assigned 796 Medicaid patients at two academic primary care practices to a control and intervention arm. Each group received automated reminders and reminder calls from research staff, but patients in the intervention group were offered a complimentary Lyft ride, arranged by the researchers.
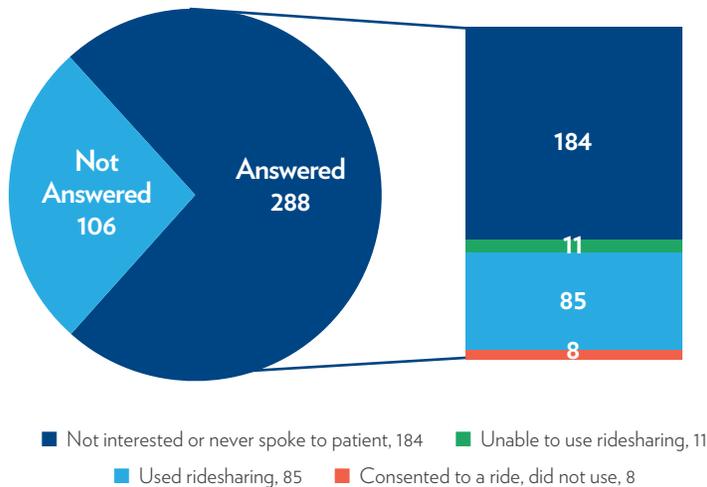
THE FINDINGS

The rate of missed appointments did not differ between the groups: 36.5% in the intervention group and 36.7% in the control group (**Figure 1**). The results remained essentially unchanged when the analyses only included patients who could be reached by phone: 30.6% among the 288 patients in

FIGURE 1. RATE OF MISSED APPOINTMENTS

	No show	Day-of cancellation
Intervention group (n=394)	10.7%	25.9%
Control (n=392)	12.0%	24.7%

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FIGURE 2. UPTAKE OF RIDESHARING SERVICE IN INTERVENTION GROUP

- Not interested or never spoke to patient, 184
- Unable to use ridesharing, 11
- Used ridesharing, 85
- Consented to a ride, did not use, 8

the intervention group who answered phone calls, compared to 34.8% among the 270 patients in the control group who answered the phone. There were no significant differences in use of the health system's emergency facilities.

As shown in **Figure 2**, 288 of 394 patients in the intervention group (73.1%) could be reached by phone, and of those 288 patients: 85 (29.5%) used the ride. A significant proportion were not interested.

THE IMPLICATIONS

The uptake of ridesharing was low and did not change the rate of missed primary care appointments. The negative finding raises questions about how transportation barriers are currently being addressed and highlights important considerations to take into account before paying for rideshare services. Several of these factors may explain the null finding. First, a more targeted approach, like identifying and offering rides only to patients with transportation needs, may have a different finding. Second, the trial was conducted in a relatively small urban environment, with accessible public transportation. Third, transportation is only one of several risk factors for missed appointments, such as unstable home environment, which frequently co-occur. Finally, phone calls may be a suboptimal method for recruiting patients, and the service still required comfort with text

messaging. These considerations may contribute to the low interest in rides. This study suggests that more qualitative research on the causes of missed appointments is required before initiating large-scale, targeted or not, transportation support.

THE STUDY

The authors conducted a pragmatic clinical trial of a ridesharing intervention between October 2016 and April 2017 in two academic internal medicine clinics in West Philadelphia. They randomized 786 existing patients with Medicaid coverage into a control and intervention arm. Patients in both arms received two types of phone call reminders for their upcoming appointments – one from an automated system and one from research staff, with a maximum of three attempts to make verbal contact. Research staff set up Lyft rides for patients in the intervention group who answered the phone and expressed interest, and patients communicated with their driver via text message. Patients were also given a number to call to arrange a ride home. Thus, patients did not need a smartphone. For each arm, the authors measured the number of missed appointments (number of no-shows and same day cancellations divided by the total number of patients) from each practice's medical records. They also analyzed rates of emergency department visits to Penn Medicine facilities. They used an intention-to-treat analysis, in which outcomes were compared regardless of whether or not phone calls were answered, as well as an as-treated analysis, which only compared data from patients who were reached by phone.

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