

# Evidence Scan

## Reducing Missed Visits

### Questions

- (1) What patient and visit characteristics are associated with missing scheduled appointments?
- (2) What are evidence-based methods for intervening with patients who don't show up for appointments?

### Answer

Evidence indicates that patients with a prior missed-visit history, a long lead time since the scheduling of their appointment, young adults, and those with Medicaid coverage are at higher risk for missed appointments. Evidence-based strategies for reducing rates of missed visits include phone calls from clinic staff, automated phone reminders, and text message reminders. There is limited evidence showing benefits to scheduling-related strategies, and insufficient evidence on other types of interventions.

### Supporting evidence

Based on one systematic review and 8 primary studies, we found consistent patient and visit characteristics associated with missed health care appointments. We found 10 systematic reviews examining the effectiveness of various interventions for reducing no-show rates. These reviews primarily examined various types of reminder systems and scheduling-related strategies, providing little evidence on other types of interventions. Therefore, we supplemented these reviews with eight primary studies that examined the impact of other types of interventions, such as transportation assistance.

#### *Characteristics associated with no-shows*

We found consistent evidence that the strongest predictors of missed appointments are **prior history of missed visits** and a **long lead time** (i.e., a long length of time between the initial scheduling of the appointment and the actual appointment date). Two studies conducted in Kaiser Permanente Colorado clinics found that having  $\geq 1$  missed appointment in the prior 6 months and having a lead time of  $>30$  days (Steiner 2016) or  $\geq 61$  days (Steiner 2018) were strongly associated with missed appointments.

We also found consistent evidence that **younger age** (e.g., adults age 18-39) and **having Medicaid coverage** were associated with a higher risk of missed appointments.

#### *Reminder strategies to reduce no-shows*

We found consistent evidence that any type of reminder system results in significantly lower no-show rates compared with no reminders. While effectiveness is similar across reminder systems, **phone reminders from clinic staff** are slightly more effective than **automated phone reminders** for reducing missed visits, and both types of phone reminders are slightly

more effective than **text message reminders**, though text message reminders are generally less costly.

We found limited evidence that two or more reminders are more effective than a single reminder, and that the timing of reminders (1-7 days prior to appointment) does not have a significant effect on missed-visit rates. In addition, we found limited evidence that using predictive modeling to make targeted phone calls to patients identified as at “high-risk” for no-shows is more effective than non-targeted, automated reminders.

#### *Scheduling strategies to reduce no-shows*

We found limited evidence that open-access or advanced-access scheduling systems are more effective than traditional scheduling systems for reducing missed visits. We also found limited evidence that web-based appointment scheduling systems are more effective than phone-based scheduling systems for reducing missed visits. Finally, we found limited evidence for the effectiveness of a “recall reminder” system (i.e., having the clinic call patients to ask them to schedule their next appointment) compared with “365 scheduling” (i.e., asking patients to schedule their next appointment when they are leaving their current appointment).

#### *Other strategies to reduce no-shows*

We found insufficient evidence about the effectiveness of other types of interventions, such as transportation assistance.

## Additional considerations

- Scheduling multiple appointments on the same day decreased the likelihood of missing an appointment in one study (Goffman 2017).
- Offering transportation assistance through a complimentary ride-sharing service did not affect missed-visit rates in one study (Chaiyachati, 2018).
- Effective reminder systems include those that provide patients with an easy way to immediately cancel or reschedule unwanted appointments (e.g., via SMS response to a text message reminder) (McLean 2014, 2016; Peterson 2015).
- KP Colorado uses a combination appointment reminder system (called IVR-T) that automatically delivers interactive voice response (IVR) reminder calls to landlines and text message reminders to mobile phones (Steiner 2016, 2018).
- For appointments with a high risk of being missed, computer simulations suggest that the use of dynamic scheduling to proactively overbook could lead to an increase in clinic utilization and a decrease in patient wait times with a low risk of appointment conflicts (Crepes 2017, Goffman 2017).

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