

Is my patient here?

The value of predicting no-shows in independent physician practices

Predictive Analytics World for Healthcare – Las Vegas 2019

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How'd we end up here today?

Pediatricians are at the bottom of the totem pole.



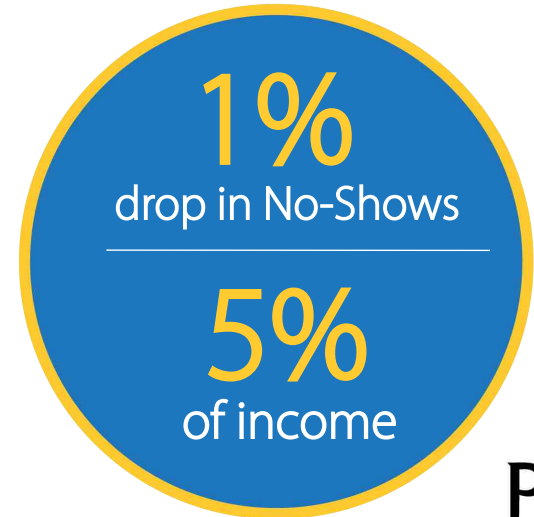
Our Assumption: Time Is Money

Every no show represents lost income.

If a typical pediatric visit is \$150, and a **1% drop** in no-shows

represents 50 visits annually,

... that's \$7,500 in lost income,
or **5% of a pediatrician's income.**



Industry Sells “No Show Solutions”

The screenshot shows a website with a dark blue header. On the left, a red sidebar contains an advertisement for MGE management experts, featuring a woman's photo and a quote: "WE STRUGGLED WITH A 50% CANCELLATION RATE. NOW CANCELLATIONS ARE INFREQUENT AND COLLATERAL INCREASES HAVE DECREASED." The main content area has a dark grey header for "APA 2019: Top News". Below this is a blue banner for a seminar titled "What to Do When Evidence-Based Therapies Fail: Treatment-Resistant and Treatment-Refractory Schizophrenia". To the right of the banner is a photo of a doctor. Below the banner, the article title "'3 Strikes 'n' yer out': Dismissing no-show patients" is displayed, along with its source "Current Psychiatry, 2017 June;16(6):32-35" and a link for "Author and Disclosure Information". To the right of the article is a video player showing a digital clock at 2:39 AM and safety information for a device called reSET-O. The footer includes the Current Psychiatry logo and the PCC logo.

MGE management experts
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UPCOMING SEMINARS SERVICES EBOOKS VIDEOS ONLINE TRAINING BLOG

APA 2019: Top News

FREE The Real Solution to Cancellation
Cancellations and no-shows can cost a dentist in excess of \$100,000 a year in lost productivity. Learn how to fix it - and it isn't "just send more appointment reminders".

“ WE STRUGGLED WITH A 50% CANCELLATION RATE. NOW CANCELLATIONS ARE INFREQUENT AND COLLATERAL INCREASES HAVE DECREASED.”

What to Do When Evidence-Based Therapies Fail: Treatment-Resistant and Treatment-Refractory Schizophrenia

Jointly Provided By: University of Cincinnati, National Academy for Medical Direction, supported by an independent educational grant from Alkermes

MEDICOLEGAL ISSUES
'3 Strikes 'n' yer out': Dismissing no-show patients
Current Psychiatry. 2017 June;16(6):32-35
[Author and Disclosure Information](#)

2:39 AM

Please see [Clinician Brief Summary Instructions](#).
Important Safety Information:
Warnings: reSET-O is intended for patients whose primary language is English and who have access to an Android/iOS tablet or smartphone. reSET-O is intended only for patients who own a smartphone and are familiar with using one.

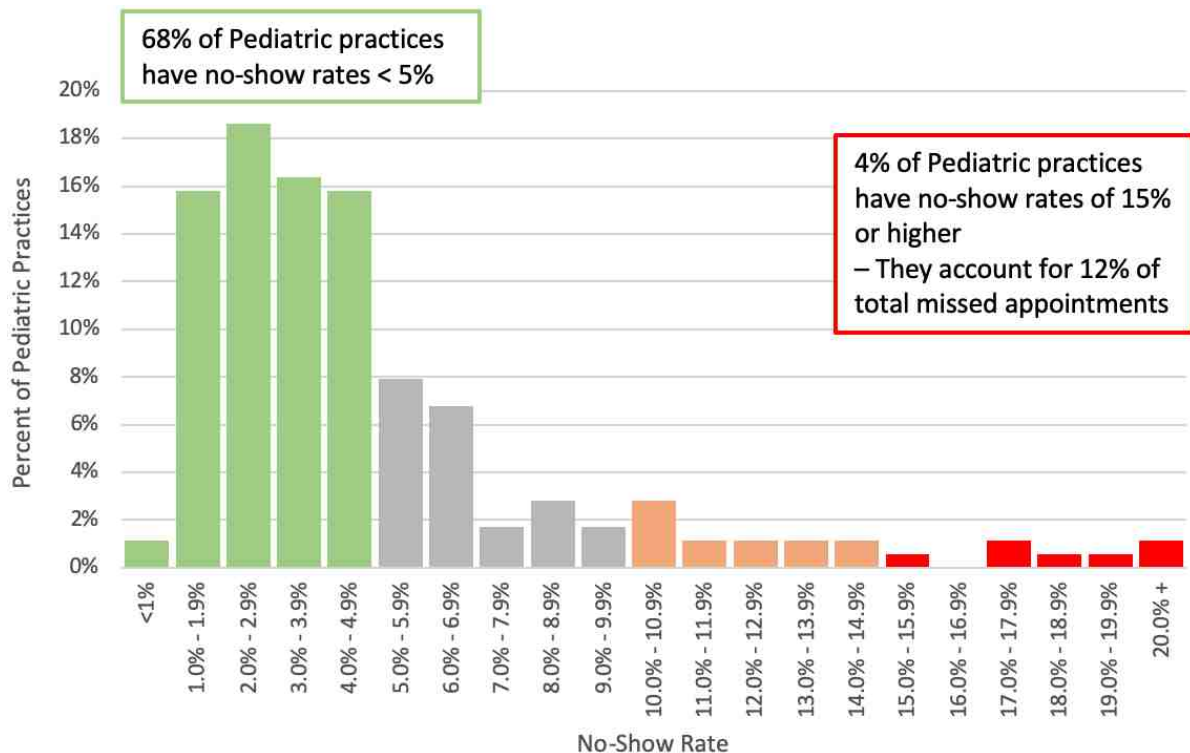
Advertisement

Current PSYCHIATRY

PCC

So what do we know?

Is our wisdom too conventional?

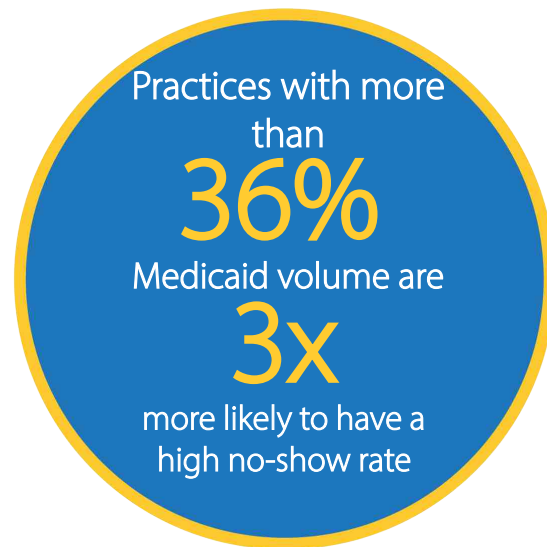


Over
30%
of practices had missed
appointment rates of
5%
or higher

What did we learn?

Is our wisdom too conventional?

- Size, region, state have no significant relationship.
- Clinical quality measures (well visit rates, immunization coverage) don't affect no-show rates.
- Pricing, coding expertise, appointment volume, use of patient portal, use of patient reminder system – nada.



Hypothesis #1

- If we can identify the families most likely to no-show at the time of scheduling we can fill those appointments!
- There are going to be hot times/days we want to avoid
- Those Medicaid families are the big problem

Let's **predict** no-shows when we schedule!

- Increase revenue!
- Improve clinical response!
- Save some high Medicaid practices!

	Monday 12/03/18	Tuesday 12/04/18	Wednesday 12/05/18
2: 2:15 pm	Red	Red	Green
2: 2:30 pm	Red	Red	Red
2: 2:45 pm	Blue	Lauren Trott 18mo Well Visit	Red
3 3:00 pm	Red		
3: 3:15 pm	Red	Blue	Red
3: 3:30 pm	Red	Carlin Setlock 4yr Well Visit	Red
3: 3:45 pm	Red		Green
4 4:00 pm		Green	
4 4:15 pm	Green	Taryn Brodhead 4mo Well Visit	Green
4 4:30 pm			Red
4 4:45 pm	Green	Green	Red

Analysis & Results

- There really aren't hot spots!
- A majority of patients never no-show.
- A huge majority of patients almost never miss.
- The ones who miss, miss consistently.
- The impact of the 'age' of the appointment isn't intuitive.



Analysis & Results

- The strongest predictor of missing an appointment is having a history of missing appointments.
- However, those who schedule an appointment the same day rarely miss an appointment. This holds true even among people with a long history of missing appointments.
- Among those who have scheduled an appointment in advance, having either Medicaid or no insurance is a strong predictor of missing the appointment.

15%

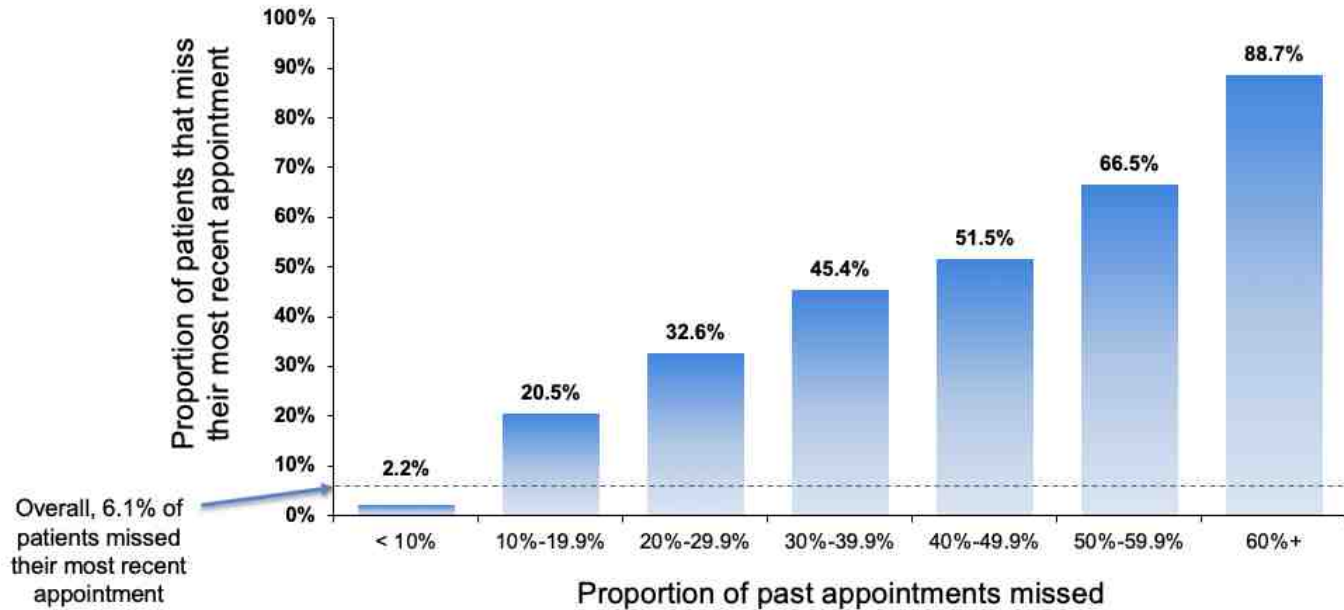
Of patients make up

60%

Of the no-shows

Analysis & Results

The strongest predictor of missing an appointment is having a history of missing appointments.

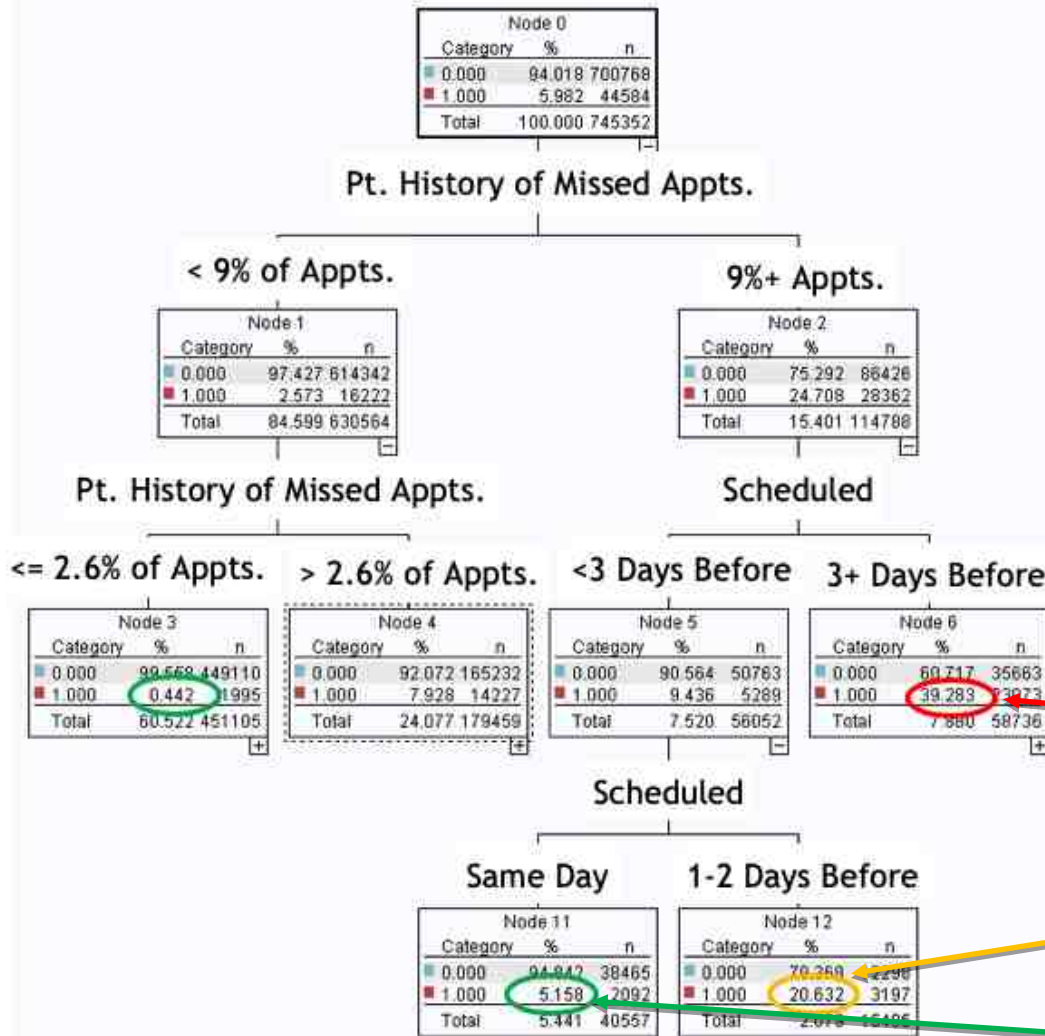


Percent of patients	85.6%	8.7%	3.3%	1.3%	0.4%	0.4%	0.3%

271,863 patients
(1 appointment each)

57% of patients have NEVER missed an appointment

Analysis & Results

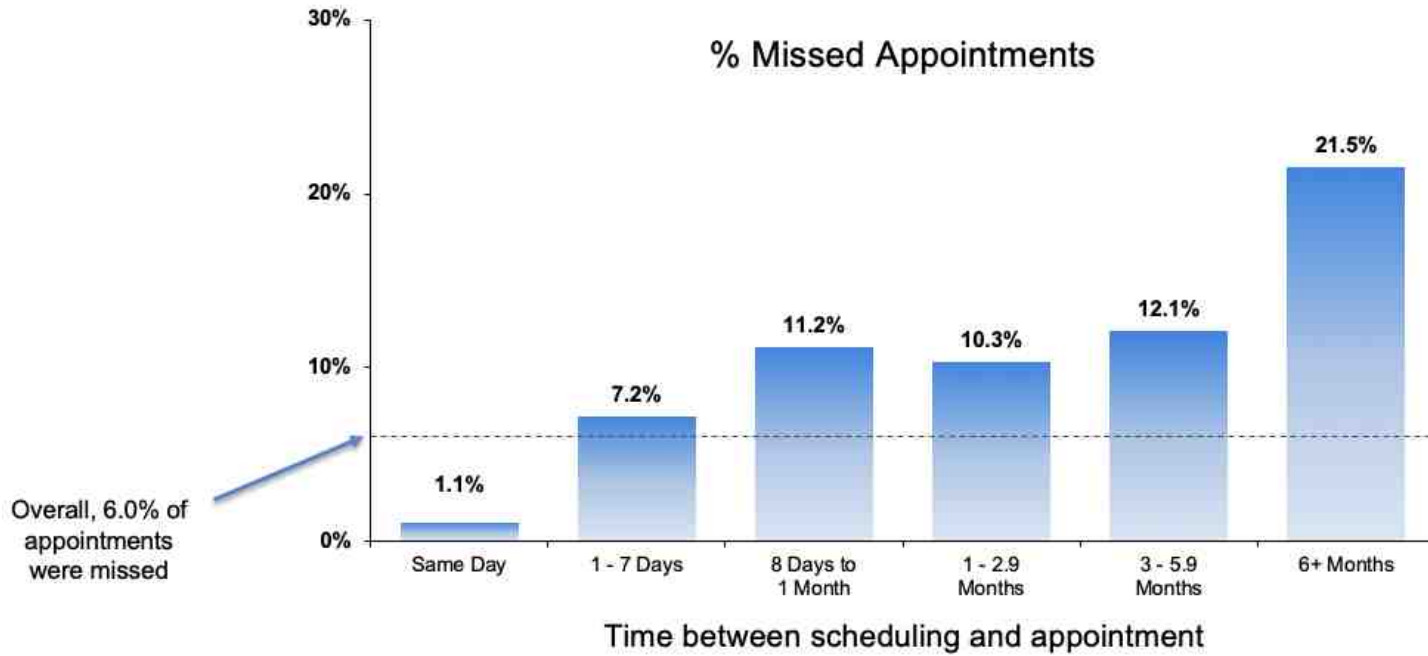


271,863 patients
745,352 appointments

- Logistic regressions and decision tree analyses also revealed some interesting patterns.
- Among patients that historically have missed 9% or more of their appointments...
 - They have an almost 40% no-show rate when they schedule appointments 3+ days in advance
 - About a 20% no-show rate when they schedule 1-2 days in advance
 - And a 5% no-show rate on same day appointments

Analysis & Results

Appointments scheduled far in advance are more likely to be missed.



271,863 patients
745,352 appointments

Percent of appointments	44.8%	17.5%	17.6%	14.6%	4.6%	1.0%
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Hypothesis #2

- Let's initiate a **second reminder call** for high no-show people!
- It's better to have a canceled appointment than a missed appointment.
- **Reducing no-shows isn't about the \$\$**, it's about reducing the chaos and knowing what kind of time you have with the patient in front of you.

"If I am in an exam room working with a depressed teen, knowing that I don't have to leave the room in 2 minutes is so much more important to me than filling that overbooked slot to make more money."

Analysis & Results: Round 2

- The vision of scrolling around for the best place to drop a patient is backwards — we want to know what's happening *today*. Not only does knowing what will happen today reduce chaos, it will be more accurate than the prediction made last year.
- Patients who were unable to be contacted by the automated notification process were literally 2x more likely to miss appointments and 25% less likely to cancel them.

Next Steps

If:

- 15% of the patient base makes up 60% of the no-shows
- **AND**
- We can identify which patients aren't answering their phones
- **AND**
- We just want to know what's going to happen *today*
- **THEN**
- Let's predict the top 3-4 patients/day and call them personally to determine what's going to happen

Questions? Comments?

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