Is my patient here?

The value of predicting no-shows in independent physician practices

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How'd we end up here today?

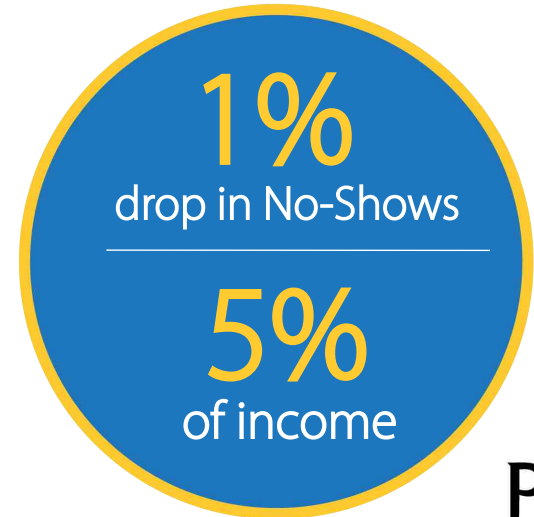Pediatricians are at the bottom of the totem pole.

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**.

1%
drop in No-Shows

5%
of income

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Industry Sells "No Show Solutions"

So what do we know?

Is our wisdom too conventional?

68% of Pediatric practices have no-show rates < 5%

4% of Pediatric practices have no-show rates of 15% or higher
– They account for 12% of total missed appointments
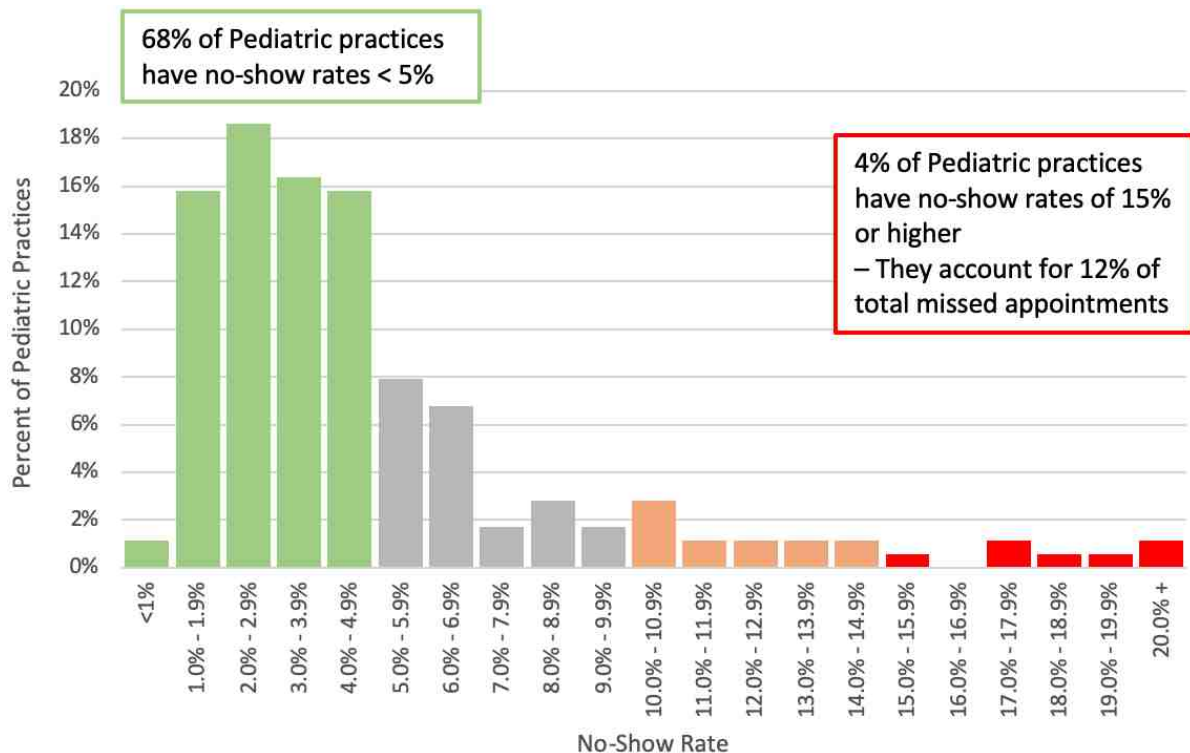
Over **30%** of practices had missed appointment rates of **5%** or higher

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.

Practices with more than **36%** Medicaid volume are **3x** more likely to have a high no-show rate

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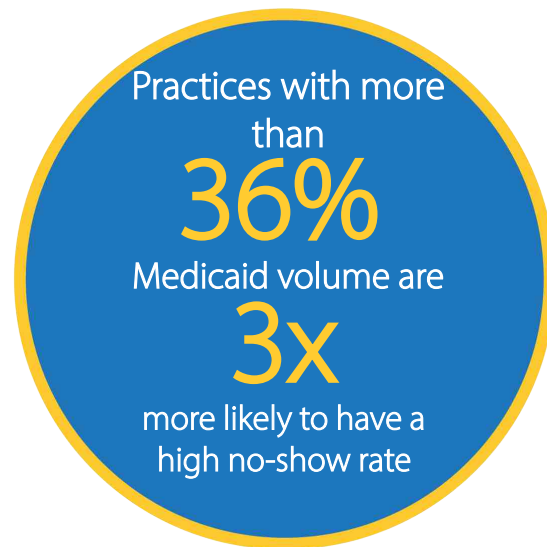
Hypothesis #1

- 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

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

- Increase revenue!

- Improve clinical response!

- Save some high Medicaid practices!

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.
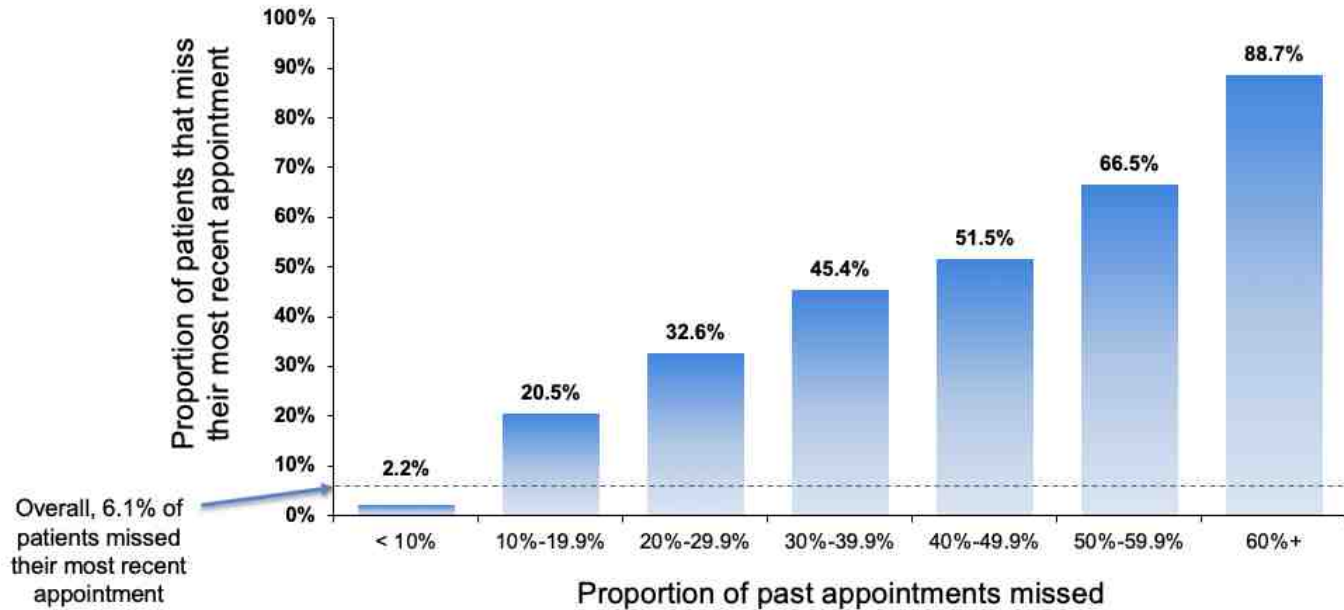
15%
Of patients make up

60%
Of the no-shows

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Analysis & Results

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

271,863 patients
(1 appointment each)
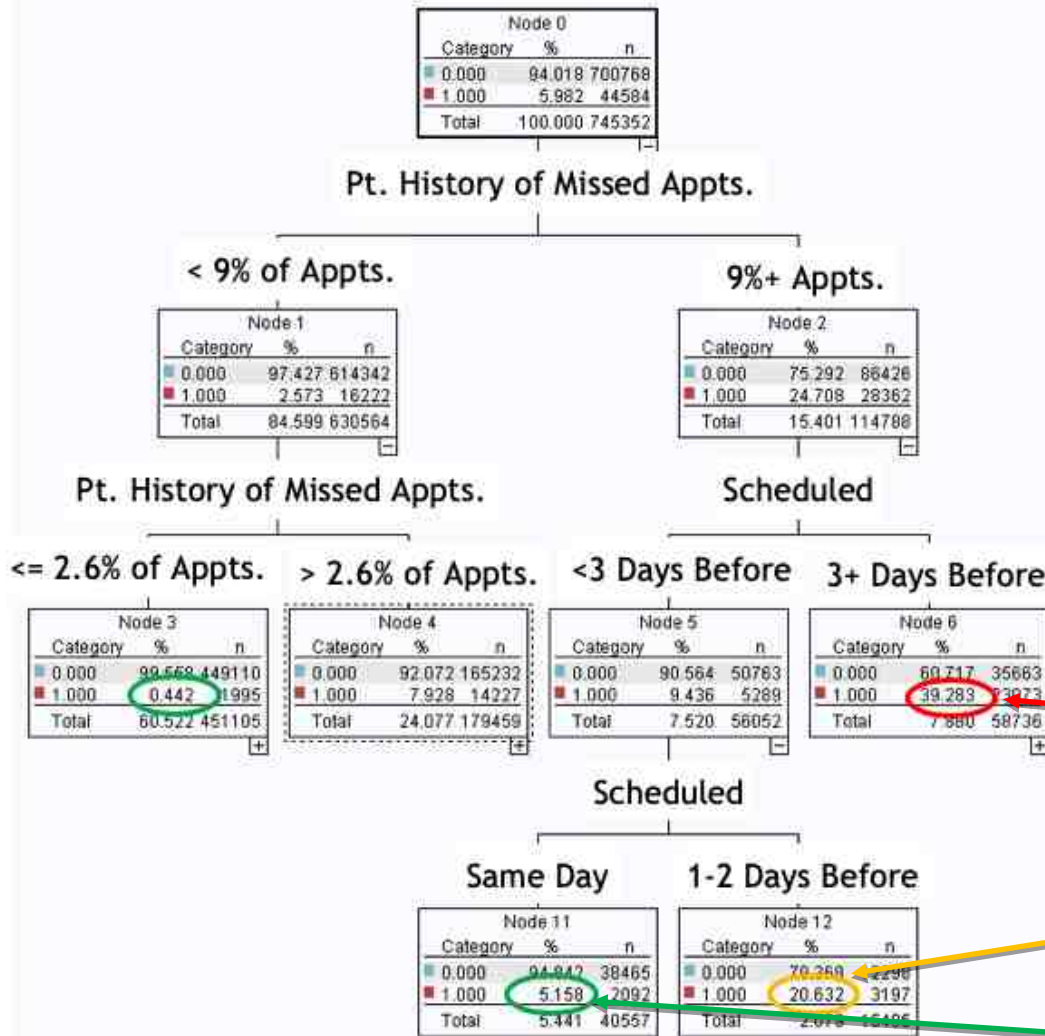
Analysis & Results

- 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

271,863 patients
745,352 appointments

Analysis & Results

Appointments scheduled far in advance are more likely to be missed.
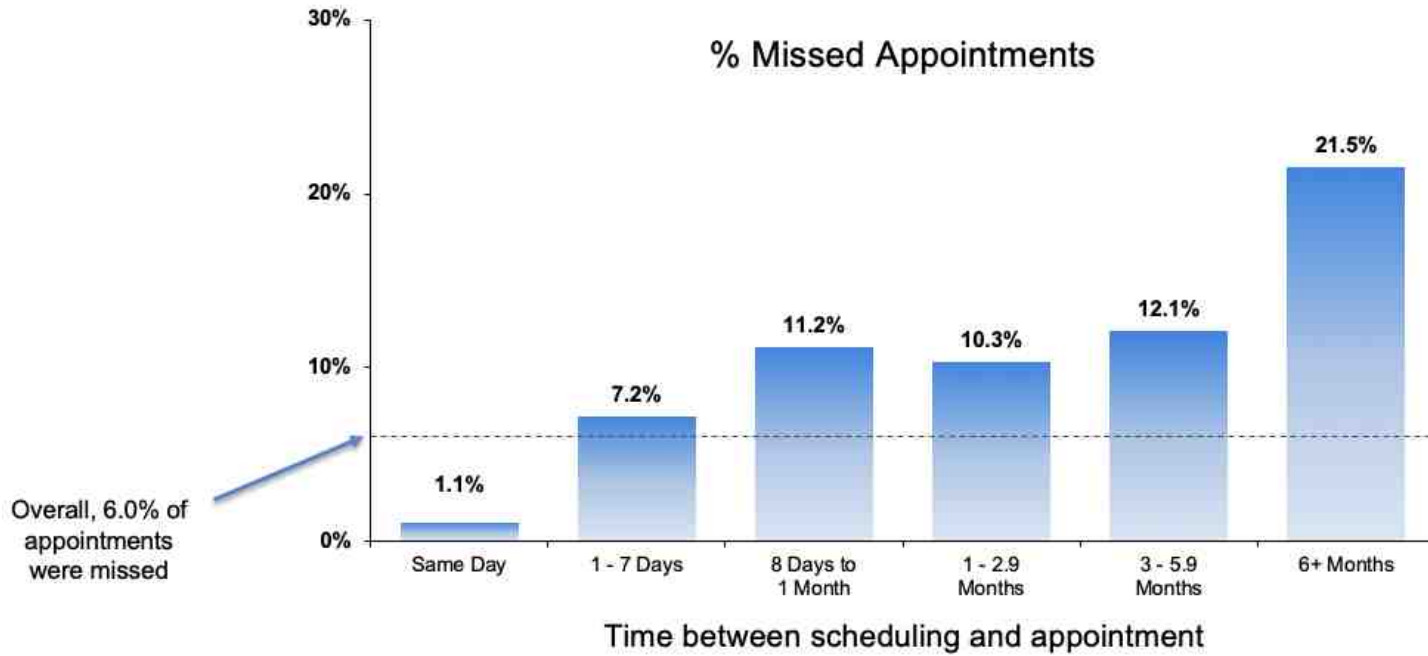
271,863 patients
745,352 appointments

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."

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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.

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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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