

KAIROI HEALTH



# INCREASING PATIENT ACCESS & PROVIDER PRODUCTIVITY

PrimeCareHealth Chicago

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# What's all the fuss about Provider Productivity?

PrimeCareHealth needed to increase patient access and providers' productivity.<sup>1</sup>

PrimeCareHealth had set a productivity target of 88% for their providers but had been unable even to reach 80%. KairoiHealth's "supply" approach to the problem offered to increase the yield of kept appointments without adding providers or extending the clinic day.



*At many provider systems, physicians' schedule density is currently about 80%, but high-performing practices can consistently reach a 90% to 95% density without physician burnout.*

MCKINSEY & COMPANY  
"The Productivity Imperative for Healthcare Delivery in the United States"  
February 2019

# The Process

KairoiHealth was engaged to increase patient access and provider productivity<sup>2</sup> beginning with a pilot experiment at two clinic sites.

KairoiHealth began by analyzing the appointment histories of all of PrimeCare's providers to determine what caused the number of kept appointments to fall well below the number of available appointments each day.<sup>3</sup>

The historic analysis showed that at the beginning of each day almost all providers were fully, or nearly fully, booked. The records also showed that most providers on most days added same day appointments to their schedules. However, for most providers even with the additions, most of their days ended with their seeing fewer patients than were on their schedules at the start of the day. Put simply, fewer patients “walked in” than cancelled or failed to show up for their appointments.



PRIMECAREHEALTH JANUARY THROUGH SEPTEMBER 2019

54,509

ACTIVE  
APPOINTMENTS

20,661

LATE CANCELLATION &  
NO-SHOWS

12,395

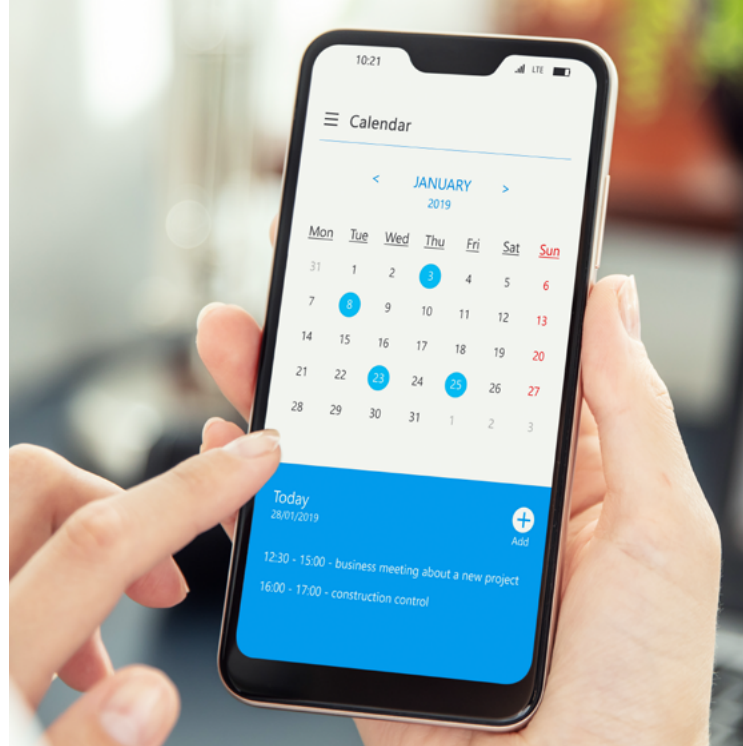
WALK-INS

46,243

KEPT APPOINTMENTS

15%

NET LOSS DURING  
THE DAY



## Patient Reminders

PrimeCare, like most practices, uses various “reminder” applications to increase the number of patients seen by decreasing the number of patients who cancel on their appointment day. Kairoi Health reported that the reminders did decrease the late cancellations and no-shows by increasing timely cancellations. However, there were only minor increases in the number of kept appointments.

	KEPT	LATE CANCELLATIONS & NO-SHOWS	EARLY CANCELLATIONS & RESCHEDULES
PATIENTS WITH REMINDER	58%	25%	17%
PATIENTS WITH NO REMINDER	63%	15%	22%

PRIMECAREHEALTH JANUARY THROUGH SEPTEMBER 2019

IN ADDITION, ONLY 70% OF PATIENTS WHO CONFIRMED THEIR APPOINTMENTS ACTUALLY KEPT THEM.

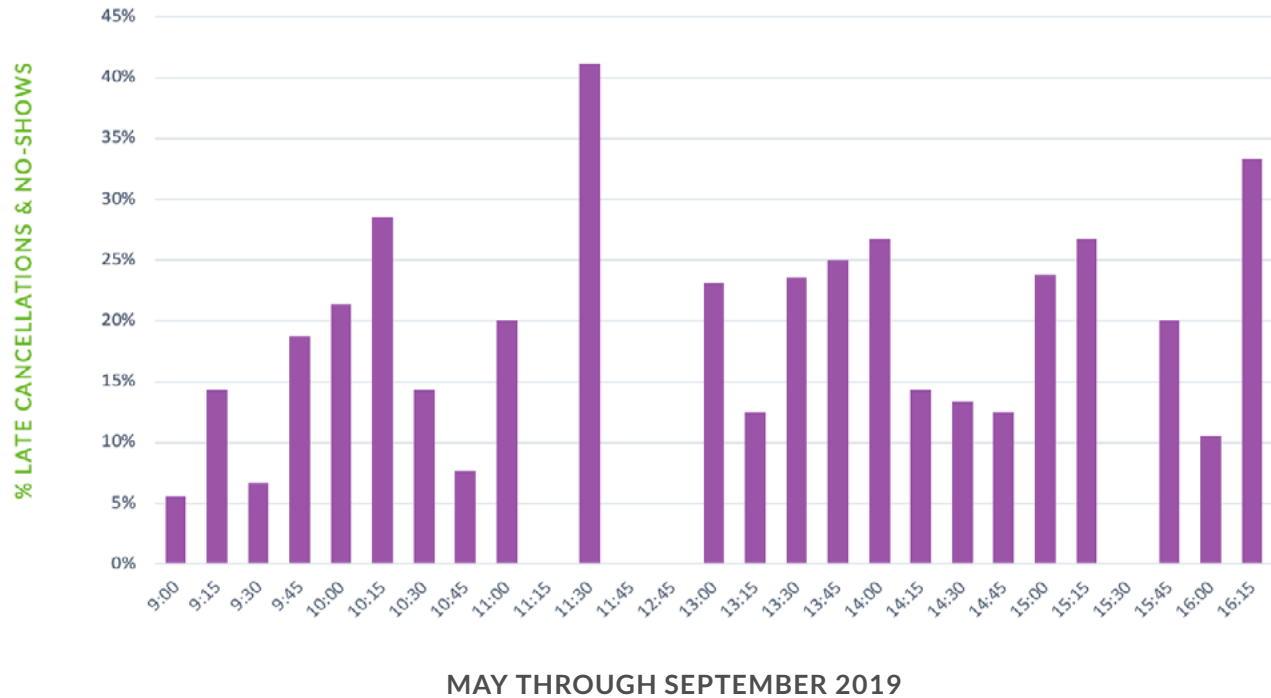
# The Pattern of Late Cancellations & No-Shows

PrimeCare had employed an application to identify patients who had a record of persistent no-shows and to double book them which did not solve the problem. Of the 25,000+ patients PrimeCare sees in a year, fewer than 900 were identified as missing more than 50% of their appointments. These patients were collectively responsible for 12% of the late cancellations and no-shows.

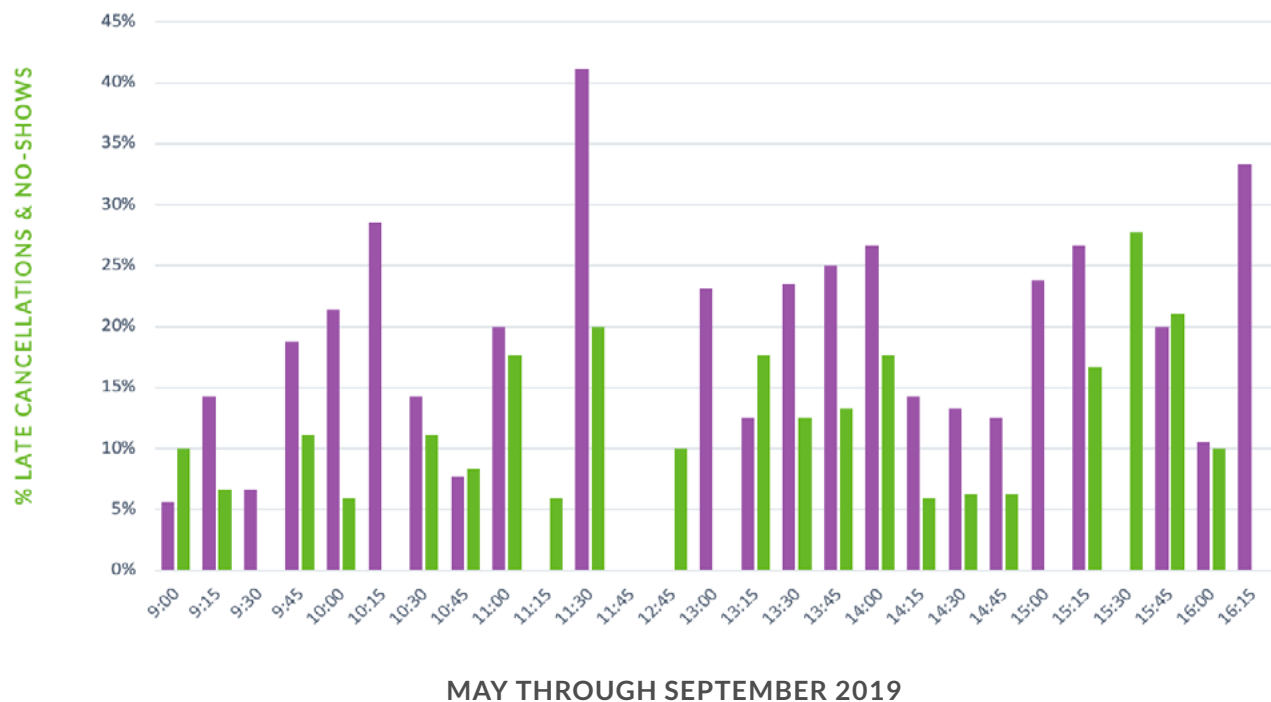
The analysis did support KairoiHealth's prior experience that each provider's panel has a unique pattern of late cancellations and no-shows. KairoiOptimize™ uses these patterns to insert backup slots into the provider's schedules. These additional slots increase the supply of appointments, letting more patients book appointments for the day. These "additional patients" take the place of the patients who do not come and so they do not impact the providers.

The patterns relate to the provider's panel and so they are different for each provider. They also vary by day of the week as illustrated in these graphs.

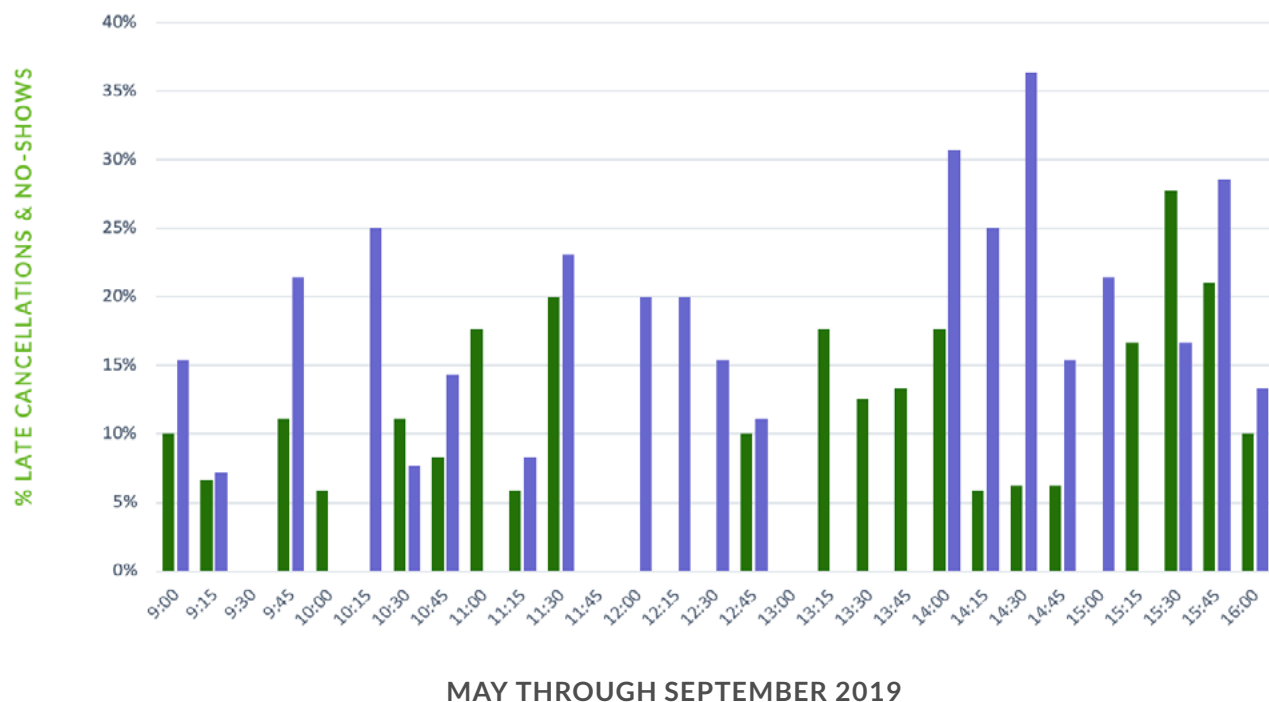
## PATTERN FOR ONE PROVIDER'S PANEL ON MONDAYS



## PATTERN FOR ONE PROVIDER'S PANEL ON MONDAYS & FRIDAYS



## PATTERN FOR TWO PROVIDERS' PANELS ON MONDAYS



## Morning and Afternoon Sessions

From the Monday pattern shown previously, KairoiOptimize™ has produced this schedule:

MORNING SESSION			AFTERNOON SESSION		
	9:00 AM	Any 15		12:45 PM	Any 15
	9:15 AM	Any 15		1:00 PM	Any 15   Any 15
SLOTS ADDED FOR BACKFILL	9:30 AM	Any 15   Any 15		1:15 PM	Any 15
	9:45 AM	Any 15		1:30 PM	Any 15
	10:00 AM	Any 15		1:45 PM	Any 15   Any 15
	10:15 AM	Any 15		2:00 PM	Any 15
	10:30 AM	Any 15		2:15 PM	Any 15
	10:45 AM	Any 15   Any 15		2:15 PM	Any 15
	11:00 AM	Any 15		2:30 PM	Any 15
	11:15 AM	Any 15		3:00 PM	Any 15   Any 15
	11:30 AM	Any 15		3:15 PM	Any 15
	RECOVERY & LUNCH			3:30 PM	Any 15
				3:45 PM	Any 15
				4:00 PM	Any 15
				Recovery	

SLOTS ADDED FOR BACKFILL

SLOTS ADDED FOR BACKFILL

MONDAY, SEPTEMBER 14, 2020



KairoiOptimize schedules were implemented at two sites. At one site productivity improved from 76% to 88% in the first month. At a second site with a history of 89% productivity, they maintained a 94% rate over the next 5 months.

Due to Covid-19 PrimeCare switched all appointments to video and phone starting in March. KairoiOptimize could not build back-fills into the new schedules because PrimeCare had no history of using telehealth appointments. At the time, no one believed there would be a late cancellation problem in the telehealth environment. After 7 months the data shows that there is still a need for back-fill appointments because there is a significant number of same day cancellations and no-shows and they still form patterns. The same day cancellation rate of telehealth appointments at PrimeCare has been 25% and is statistically identical to that of in-person appointments. The patterns have given KairoiOptimize the basis to build schedules starting in December for the current hybrid environment.

## Conclusions

The fact that a fully booked calendar in the morning will not meet productivity targets at the end of the day logically indicates that there need to be more places in the provider's calendar to hold additional appointments, i.e., what have been known as double books.

KairoiOptimize places those back-fill slots where the analysis indicates they are most likely needed, where they will not backup the provider or clog the waiting room. They are intended to have a patient ready to be seen when the provider is ready to see them.

PrimeCareHealth derived these benefits:

- ++ Increased patient access to care, improving outcomes
- ++ Minimizing disruption in the providers' days with improved patient flow
- ++ Additional revenue for the practice

## NOTES

<sup>1</sup> Setting a reasonable productivity rate in a primary practice environment has been studied widely. The studies all indicate that seeing patients in 90% to 95% of a provider's available appointments is achievable without stressing the provider. For a 25 appointment per day calendar this translates to more than 22 kept appointments. The recent McKinsey report defines that goal and clinics using our schedules have achieved it.

Additional studies of the topic and its related elements:

Rao N et al. "Revisiting the access imperative." *McKinsey white paper*. May 2018

2017 Survey of physician appointment wait times and Medicare and Medicaid acceptance rates. *Merritt Hawkins*. September 2017

Schneider EC et al. "Mirror, mirror 2017: International comparison reflects flaws and opportunities for better U.S. health care." *Commonwealth Fund*. July 2017

Goh J et al. "University Hospitals Cleveland Medical Center: Managing capacity in neurology." *Harvard Business School*. 2018 Mar 15.

### <sup>2</sup> Definitions used herein:

#### AVAILABLE APPOINTMENT

A unique date/time available to a patient

We measure provider productivity against their Available Appointments

#### BOOKED APPOINTMENT

A date/time booked by a patient

We measure patient performance against the number of Booked Appointments

#### NO-SHOW

Someone who does not cancel or show up for their appointment

#### LATE CANCELLATION

Someone who cancels or reschedules on the appointment day

These two categories have the same impact on provider productivity

#### BACKUP APPOINTMENT

A second appointment at a date/time available to a patient

#### ACTIVE APPOINTMENT

An appointment that is booked at the start of the appointment day

#### How the Statistics Are Used

##### AVAILABLE APPOINTMENTS

This is the basis for practice budgeting

##### PROVIDER PRODUCTIVITY

Kept appointments / Available appointments

##### PATIENT BEHAVIOR

++ Late cancellations + No shows / Booked appointments

++ Late cancellations + No shows / Active appointments

### <sup>3</sup> About the numbers

The EHRs are complex and practices and clinic staff do not always use the systems the way their designers intended. On another level, there is the problem of human oversight or error: people make mistakes when entering information. Kairoi has found both kinds of problems in all the EHR data that we have worked with. The solution we arrived at was to look at all possible data fields to confirm the numbers we produce. Our patented process compensates for both human error and misuse of the system.