

# Reducing appointment cancellations for prostate biopsy patients

UCSF Urology  
prospective cohort study\*

### Challenge

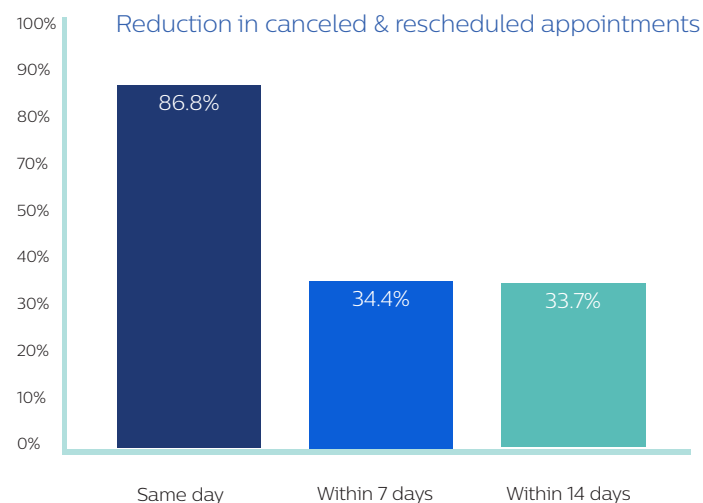
The University of San Francisco (UCSF) Department of Urology consistently ranks among the nation's best urological care departments, delivering coordinated care both in the inpatient and outpatient settings. Despite a high standard of care, many patients arrive inadequately educated and prepped for common outpatient urologic procedures, leading to delays in care, cancellations, decreased patient satisfaction, and lost revenue. In 2018, leaders in UCSF's Urology Department began a quality improvement initiative to bridge the gap in patient education and procedure preparation using Patient Engagement Manager's digital patient engagement solution for prostate biopsy patients.

### Solution

UCSF and Patient Engagement Manager (formerly Medumo) launched a comprehensive program to automatically text message and email precisely timed instructions, reminders, and notifications to patients. This ranged from educational content regarding antibiotic adherence and anticoagulation management, to prompts for patients to complete their enema and prostate MRI (see Table 1). To assess the effectiveness of this program, UCSF physicians launched a prospective cohort study to determine how this initiative would impact the percentage of canceled or rescheduled appointments and patient satisfaction.

### Results

There were 473 patients included in the pre-intervention group and 359 patients in the post-intervention group. Results showed an overall 37.3% reduction in canceled or rescheduled appointments in the post-intervention group compared with the pre-intervention. In drilling down further, same-day cancellations were reduced by a substantial 86.8%. On average, patients rated their satisfaction with Patient Engagement Manager's digital program as 4.5 out of 5, and they rated their satisfaction with their overall care experience as 4.8 out of 5.



**Table 1.** Schedule of text messages sent to patients.

Day†	Time	Content sent
Registration	Enrollment	Program welcome, patient homepage link
T-14	10 am	MRI and medication survey
T-12	10 am	Educational information & video on program
T-7	9 am	Key items to obtain & fleet enema instructions
T-1	9 am	Preprocedure readiness survey
T-0	7 am	Antibiotic and fleet enema reminder
T-0	5 pm	Postprocedure precautions
T+2	10 am	Follow-up symptom survey
T+4	5 pm	Satisfaction survey

### Conclusions

Overall, the program significantly reduced last-minute appointment cancellations and received overwhelmingly positive feedback from patients. This practice-wide quality improvement initiative increased communication between the clinic and patients, freeing-up more appointment slots and making scheduling more efficient. Its success demonstrated that SMS-based interventions likely have broad applications for improving the quality of care in surgery and across the health system.

*“The UCSF Department of Urology is committed to offering the highest quality urologic care, innovative research programs, and using digital health tools to engage with patients.”*

Dr. Anobel Odisho, MD MPH  
Assistant Professor of Urology  
UCSF School of Medicine

## 37%

Reduction in overall cancellations & reschedules

## 86%

Reduction in same-day cancellations

## 4.5/5

Patient satisfaction

philips.com/pem  
support@medumo.com

\* Data is based on the following peer-reviewed study: Balakrishnan AS, Nguyen HG, Shinohara K, Au Yeung R, Carroll PR, Odisho AY. A Mobile Health Intervention for Prostate Biopsy Patients Reduces Appointment Cancellations: Cohort Study. Journal of Medical Internet Research. 2019;21(6):e14094 <https://www.jmir.org/2019/6/e14094/>

Results from case studies are not predictive of results in other cases. Results in other cases may vary.

† “T-0” represents the procedure date. All other time points represent the specified number of days before and after the procedure date.