

VENICE FAMILY CLINIC: Improving capacity and managing patient lead times

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Dr. Susan Fleishman, Medical Director at the Venice Family Clinic (VFC) returned to the clinic after her early morning meeting with CEO, Elizabeth Forer. It was a typically warm and sunny Southern California day as she approached the front door of the clinic. She walked past a line of six to eight people waiting to check in at security and then proceeded upstairs to the waiting room. Almost every seat was taken. The room was full of elderly people, homeless men and women, young mothers, babies, toddlers with runny noses, school-aged children watching TV and adult men and women dressed for work. Some clutched papers indicating they had been seen by either registration or a provider, but most were holding only their color-coded cards given to them as they passed through security.

As she headed towards the patient rooms, she noticed two resident doctors holding charts and chatting about their upcoming ski trips, one attending physician talking to a medical assistant about lab work and another on the telephone impatiently waiting on hold. A quick walk by the patient rooms showed that despite the crowd in the waiting room, only about half of the rooms had patients in them. She knew that many of the patients seen by the clinic spent hours there each visit, and that most of that time was spent waiting. She thought back to her meeting with Liz. She had been told that there were projections for a 26% increase in visits over the next year. How would the clinic be able to handle such a large influx of patients? She had already begun hearing grumblings from her patients

about how long the waits were. How could operations be improved to decrease lead times for patients and make things flow more smoothly? She hoped that the results of the newly completed time study would be useful.

THE VENICE FAMILY CLINIC

The Venice Family Clinic was founded as a storefront operation over 30 years ago with the intent to care for low-income and uninsured members of the local community. Its mission:

“to improve the health of people and communities through accessible, quality care”

It has grown through community and volunteer support to become the largest free clinic in the country. It serves nearly 19,000 patients a year, a third of whom are children, with over 95,000 clinic visits at 4 sites. It provides vital services in primary health care; women’s health care; prenatal, well-baby and pediatric care; HIV/AIDS prevention and medical treatment; ongoing care for chronic diseases such as asthma, diabetes and hypertension; specialty care in a variety of areas including cardiology, dermatology, ear, nose and throat and neurology. In addition, it also provides laboratory and diagnostic services as well as running its own in-house pharmacy, dispensing medications that have either been donated to the clinic or purchased at a reduced price.

The clinic is staffed by over 500 physician-volunteers as well as 14 staff physicians in addition to multiple medical assistants, laboratory and pharmacy personnel and administrative support. The total budget for the Venice Family Clinic exceeds \$16 million and is funded through a combination of local and federal government aid and community contributions.

THE ROSE AVENUE GENERAL MEDICINE CLINIC

The Rose Avenue Clinic is the flagship site of the VFC. Patients are seen in the clinic by the physicians between the hours of 9:00am and 12:00pm and between 1:00 and 5:00pm. Patients must typically call at least one day ahead for an appointment, but a few spots are reserved in the schedule for urgent care or walk-in visits. The clinic sees, on average, 165 patients per day. There are usually nine physicians on duty to see patients during each clinic session. They are supported by two registered nurses (one for triage and one to help with procedures), as well as seven medical assistants who take vital signs and put patients in exam rooms. There are four registration clerks present to

register patients, enroll them in federal and local aid programs, prep their medical records and collect co-payments. In addition, there are three coordinators who make follow up appointments and arrange referrals, a security guard, a pharmacist, two pharmacy technicians and two laboratory technicians (see Exhibit 1 for salaries). The facility itself has a security window at the front door with a guard-controlled entry door, a large waiting area, a smaller waiting room with toys for children, 4 registration windows, 11 exam rooms (3 of which are used for taking vitals), a casting and procedure room, a charting area for doctors, 4 coordinator's desks and, on a separate level, several doctors' and administrative offices.

PATIENT PERSPECTIVE

Each patient cared for by the Venice Family Clinic is unique and brings their own special combination of needs and issues; therefore, depending on the type of visit, patients use different resources in the clinic (see Exhibit 2). Patients typically schedule their appointments one day prior, but, if the matter is urgent, a small number of open slots (about 10%) are reserved for same-day appointments. Usually, those slots can only be filled by walk-in patients who are triaged by a nurse and determined to need a same day appointment. If the patient is homeless, they come to security at 8:00am and register for a same-day appointment. At 11:00am, the triage nurse will see all homeless patients that have been registered and schedule as many as possible for the open slots that day, depending on need and availability. In addition to patients with appointments, other patients are seen by the clinic for laboratory tests, prescription refills, nursing visits and for eyeglasses.

When the patient arrives, they must first pass through security. Often, there is a small wait outside at the door, but it can be fairly long early in the morning. The average wait time at security is 10 minutes, while the average processing time is 2 minutes. The security guard is present from 7 a.m. to 6 p.m. The guard at the door double-checks the appointment time and issues the patient a colored card with a number on it — either red, yellow, green or blue. Red cards are reserved for patients without appointments who need only lab tests, medication refills or eyeglasses. These patients must pass through registration, but do not need to see a provider. All patients then proceed to the waiting room where they wait for their color and number to be called. This wait can often be quite long, but on average, takes 24 minutes. Once called by a registration clerk, their address, insurance information, income and enrollment status in several government aid programs is verified. This process can take anywhere from 1 minute up to 40 minutes if the patient is new and needs to be enrolled in several programs. Average time to complete registration is 7 minutes for returning patients and 22 minutes

for new patients with an overall average registration time of 8 minutes. The patients then return to the waiting area and wait another 15 minutes to be called by a medical assistant to have their vital signs taken. This takes 6 minutes, after which they return again to the waiting area and wait 8 minutes more to be called back to a provider room.

Once in a provider room, the patient waits 5 minutes on average for their provider (physician) to arrive. Providers spend approximately 15 minutes with each patient, but if the patient needs urgent labs or nursing procedures, this time can be longer. After they have finished seeing the doctor, the patient's chart either goes to a coordinator or to the pharmacy if there are prescriptions to be filled. The patient waits 25 minutes to be called by a coordinator to schedule further laboratory tests, get referrals to specialists, make follow up appointments and receive their prescriptions, which takes an additional 7 minutes. If the patient only needs a prescription, the wait is 13 minutes before the pharmacy can process the prescription and it takes an average of 11 minutes for the prescription to be filled. Each pharmacy technician works independently and fills the prescription after consulting the pharmacist. The pharmacy is open from 9:00am to 5:30pm, with a lunch break from Noon to 1:00pm.

On average, a patient spends about 67% of their time waiting (see Exhibit 3: Waiting and Processing Times). Patients who see providers spend the longest total time in the clinic — about 2 hours and 5 minutes — and patients just refilling prescriptions spend the least — 46 minutes on average (see Exhibit 4: Total Clinic Time by Visit Type). In general, patient satisfaction with the quality of medical services at VFC remains high, but there are still complaints each day about the waiting times for these services. Waiting times are critical for these patients, as they often directly lead to lost income during the hours they wait.

PHYSICIAN PERSPECTIVE

Physicians working at the Venice Family Clinic are either volunteers or staff physicians. Staff physicians work regular shifts each week, volunteers are often scheduled weeks in advance for various days. There are between eight and ten physicians working each day, but there are no back-ups available if a physician does not make it to their scheduled clinic. Each of the staff physicians is placed on a team, either A, B or C. These groups of two or three physicians all see the same patients, helping to ensure continuity for the patients. Each patient, therefore, will see one of the team's physicians at any given visit and has a higher likelihood that they will see the same doctor each time they come.

In addition to the physicians, there is often a medical student from UCLA, as well as a family practice resident rotating through the clinic. These trainees will see patients waiting for any physician and then present that patient's case to the staff physician when they are available. Having the trainees present can be either helpful or a hindrance to staff physicians. Staff must spend some time teaching and trainees often keep exam rooms tied up longer. However, if the physicians are behind, patients are seen sooner and the burden of charting or tracking down lab results is relieved from the staff.

Each day, a specific team is assigned to a group of exam rooms. Patients placed in those rooms will see providers for that team only. Physicians arrive at 9:00am and wait for their first patients to arrive. Often, due to the lag at registration and the wait for open rooms for the medical assistants to take vitals, patients are not in the exam rooms until well after 9:30am. In addition, due to the team system, one provider may have three patients waiting for him or her while another is still waiting for their first patient to check in at registration. The registration desk has no communication link to the physicians' area, consequently clerks may check in three patients in a row for one team, but none for another. In addition, new patients are randomly assigned to teams irrespective of who is busiest that day. Once a patient is in an exam room, their chart is placed in a rack for the physician to review prior to seeing the patient. If key lab or x-ray results are missing, the physician must call for medical records or to outside facilities and wait for the results to be faxed or called in before they can see the patient. This happens 60 to 70% of the time, causing a 10-minute delay per patient. These challenges often lead to inefficient use of the provider's time. Clinics are usually so busy that they often run overtime and physicians working both morning and afternoon clinics may not even have time for lunch.

After the physician has seen a patient, they will either complete their chart note and have the patient wait in the waiting room to see the coordinator or they will have the patient wait in the exam room for further testing or nursing procedures. Rarely, if there is no follow-up needed or prescriptions to obtain, the patient is free to leave the clinic.

VFC physicians generally are extremely committed to the clinic's mission, but were frustrated with their patient's long lead times, the incomplete medical records and the disorganized patient flow through the clinic.

ADMINISTRATION PERSPECTIVE

At the start of each day, four registration clerks prepare by printing out copies of that day's scheduled appointments. Charts of patients with appointments are pulled the night before and placed within easy reach of the clerks. The four clerks work from 8:30am until 11:00am and close the registration windows until 12:30pm. During this time, in addition to eating lunch, the clerks pull the charts for the afternoon clinic and finish up paperwork. At 12:30pm, the registration windows are reopened for the afternoon clinic and patients are checked in until 4:00pm.

There is significant variability in arrivals at registration. Registration is busiest early in the clinic session (see Exhibit 5: Arrivals by Hour). Currently, patients are told to arrive 15 minutes before their scheduled appointment. Still, 12% of patients arrive more than thirty minutes before their scheduled appointment, compounding the congestion early in the clinic session. Congestion is further exacerbated by the fact that 52% of the red-card patients arrive during the first hour of the clinic session and by the fact that new patients are typically scheduled earlier in the clinic session.¹ New patients take significantly longer to register — approximately 22 minutes versus 7 minutes on average for a returning patient. As the clinic session continues, arrivals at security drop off and the wait for registration decreases; however, wait times for providers and coordinators increase as the clinic goes on (see Exhibit 6: Wait Times by Time of Day).

Providers and coordinators see patients from 9:00am until 5:30pm with a one hour break during the day. However, they frequently have to work longer hours to see all the patients that have been checked in. Since many of VFC's providers are volunteer physicians and the staff physicians are the clinic's most highly paid employees, it is especially important that their time be used in the most effective manner possible. Currently, physicians are idle for many periods during the day while waiting for patients to be put in rooms or for lab results to be found, but then have to stay late each clinic session to finish up. A new computerized laboratory records system currently being installed should alleviate the problem of missing lab results, but more efficient patient flow would allow the physicians to both see more patients as well as have a more regular schedule.

¹ It was originally thought that new patients would take longer for providers to see; therefore, they were scheduled early in the session. However, the results of the time study did not show a significant difference in the amount of time physicians spent with new versus returning patients.

Dr. Fleischman considered what options she has to reduce lead times and what additional staff she would need to hire in order to increase overall patient visits by the desired 26%.

SUGGESTED QUESTIONS

1. Draw process flow diagrams for each type of patient visit as outlined by Exhibit 2.
 2. Calculate the capacity and utilization for each of the resources listed in Exhibit 2 and identify the bottleneck of the process.
 3. Should this stage be the bottleneck if this is a well designed process? If not, what stage should be the bottleneck and why?
 4. Calculate the average number of patients that will be present at the clinic at any given time during the day.
 5. Where should Dr. Fleischman add capacity to accommodate the expected 26% increase in patient visits?
 6. How does variability in patient arrivals and clinic procedures affect lead times?
 7. Produce a detailed list of recommendations to reduce patient lead times.
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EXHIBIT 1: MONTHLY SALARIES EXCLUDING
BENEFITS

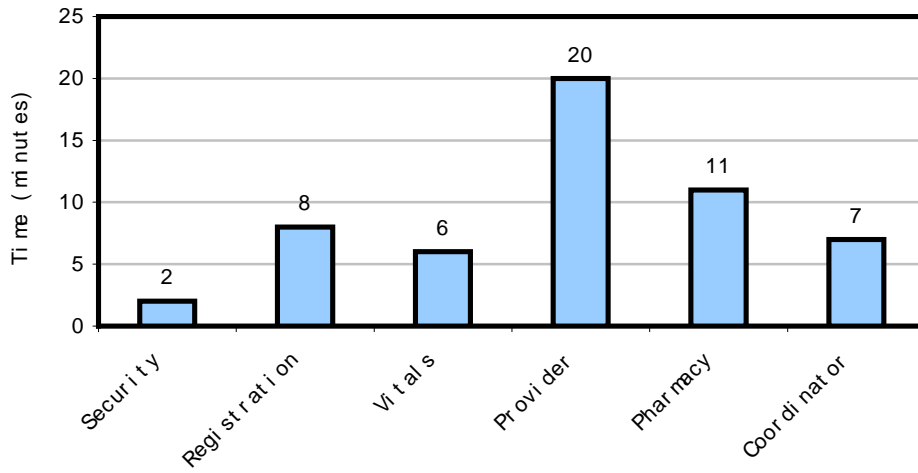
Staff Physician	\$10,583
Pharmacist	\$7,916
Registered Nurse	\$6,250
Medical Assistant	\$3,500
Laboratory Technician	\$3,208
Pharmacy Technician	\$3,208
Registration Clerk	\$2,363
Security Guard	\$2,125
Patient Coordinator	\$2,613

EXHIBIT 2: PERCENT OF PATIENTS REQUIRING A GIVEN RESOURCE BY VISIT TYPE

Visit Type	Resource					
	Security	Registration	Vitals	Provider	Pharmacy	Coordinator
Provider	100%	100%	100%	100%	50%	70%
Nursing	100%	100%	100%	rare	rare	rare
Refills	100%	100%	—	—	100%	rare
Lab	100%	100%	100%	—	—	rare
Glasses	100%	100%	—	—	—	—

EXHIBIT 3

Average Process Times By Station



Average Wait Times By Station

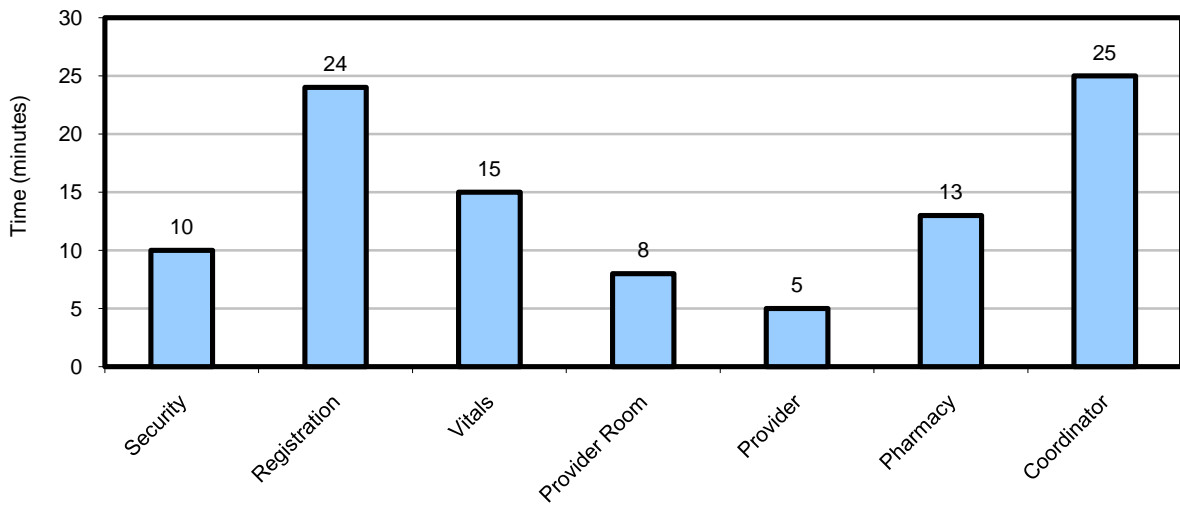


EXHIBIT 4

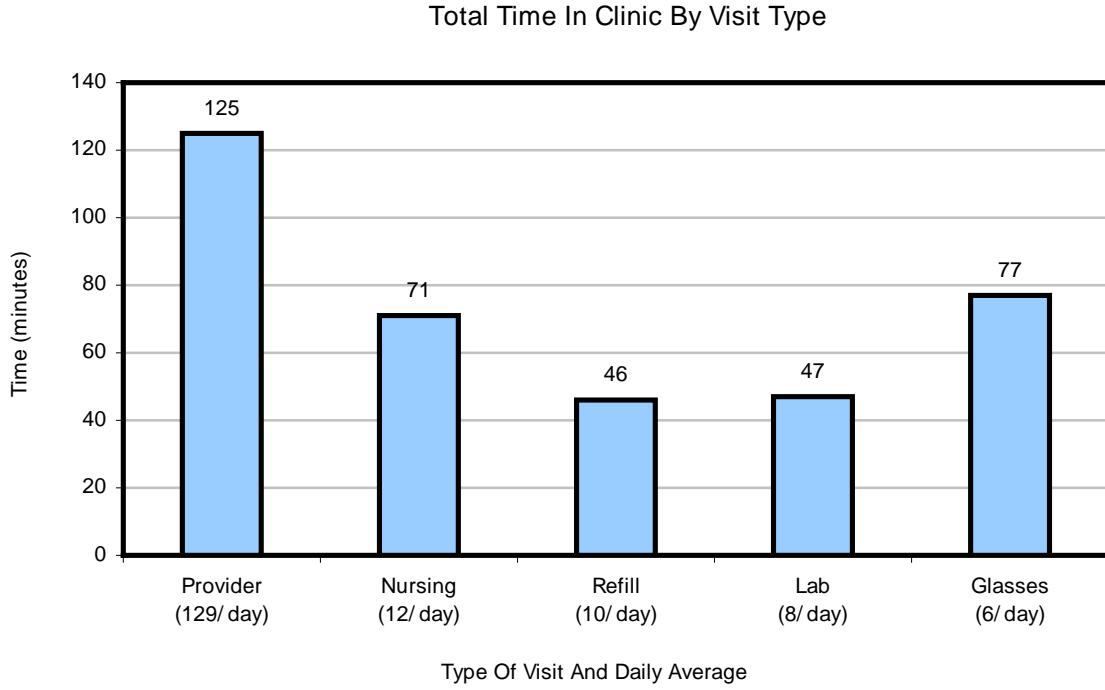


EXHIBIT 5

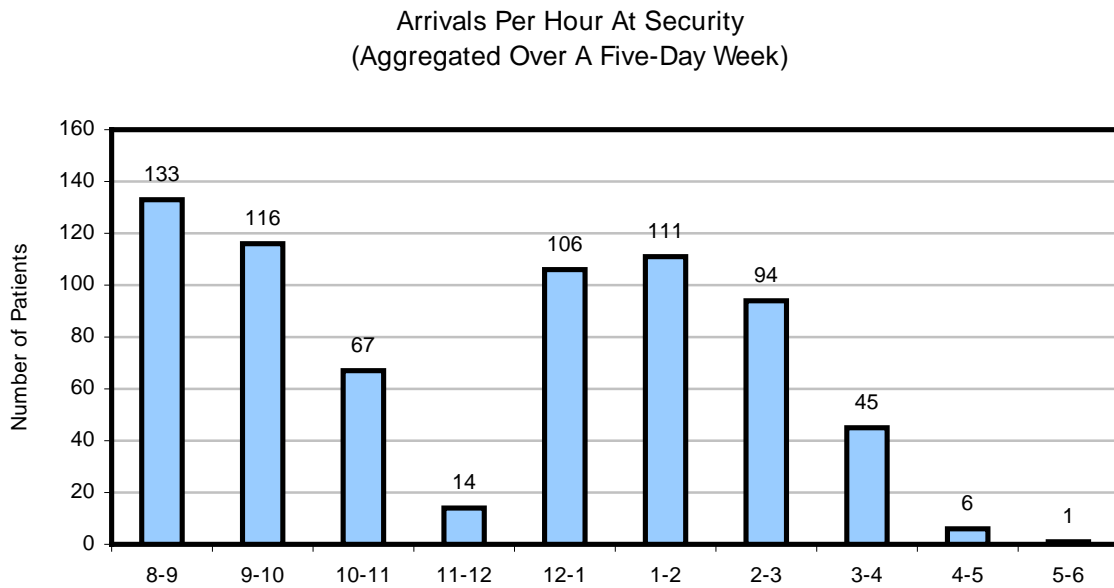
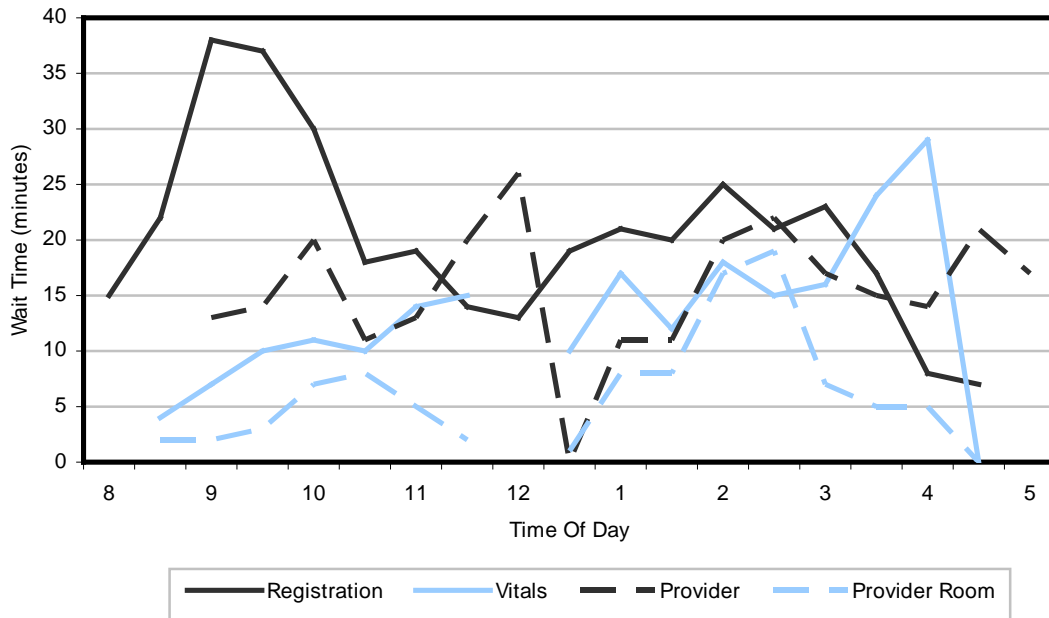


EXHIBIT 6

Pre-Process Wait Times By Time Of Day



Post-Process Wait Times By Time Of Day

