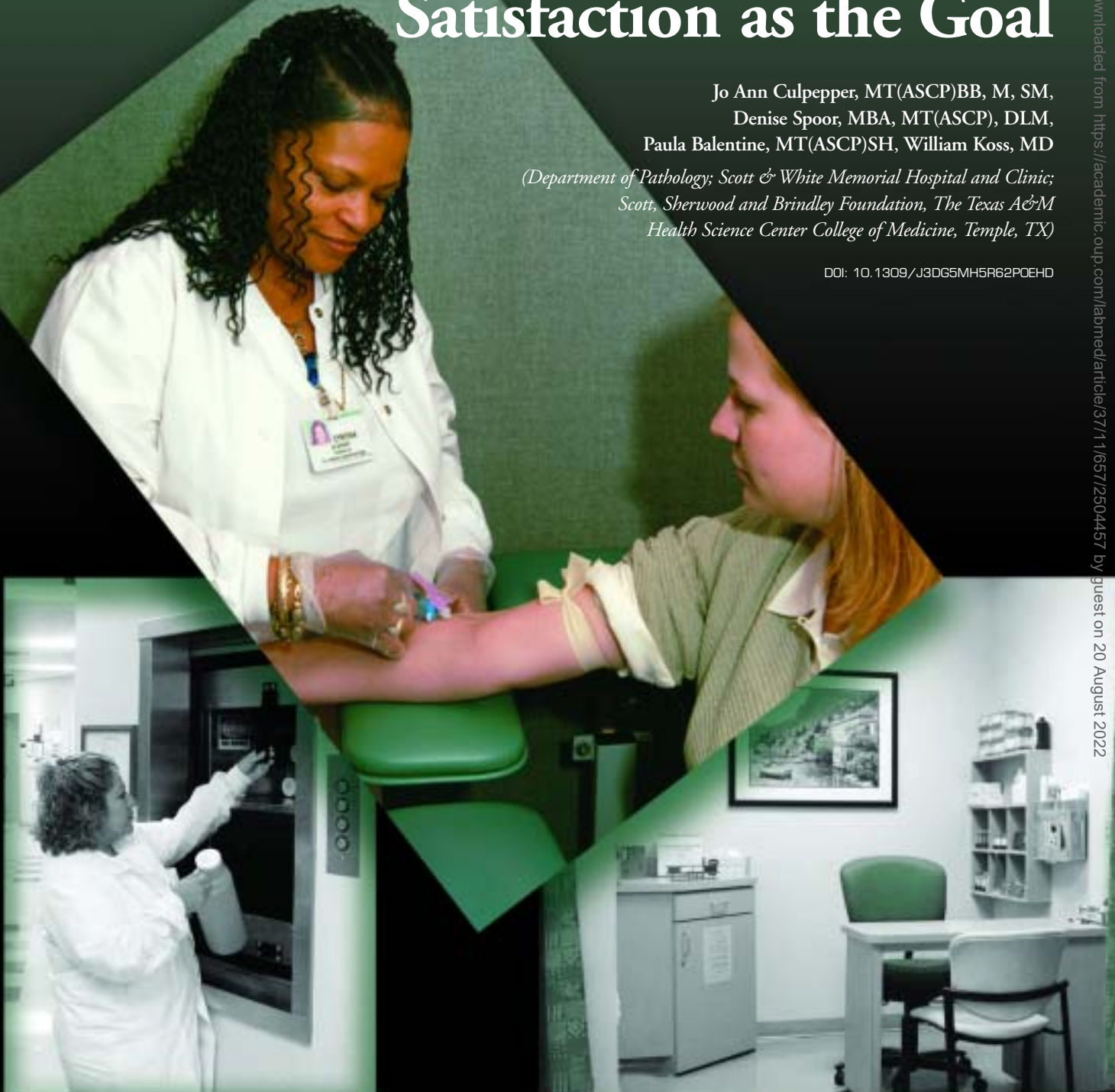


A New Approach in Outpatient Phlebotomy Services With Patient Satisfaction as the Goal

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Laboratory interactions with patients are one of the most important functions that managers oversee and perhaps the one that is most likely linked to patient satisfaction. At Scott & White Hospital and Clinic & Hospital in Temple, TX, our pathology department was challenged with providing more services and improving patient satisfaction in an outpatient hospital and clinic setting.

Our primary responsibility was to provide outpatient phlebotomy services to more than 200,000 patients annually. The challenge came as we were asked to relocate to another area in order to allow for the expansion of the radiology department. This apparent inconvenience actually provided an opportunity for the laboratory to redesign processes to more efficiently provide patient services. Due to space limitations, the laboratory had a chronic concern with how some patient services were provided. We were aware of a considerable degree of patient dissatisfaction during peak hours when waiting time for phlebotomy was as high as 30 to 40 minutes even though the goal was less than 15 minutes.

As we embarked on this journey, we confirmed that our design in the new space was in compliance with all accrediting agencies involved with laboratory and phlebotomy functions. However, along with safety and efficiency, patient convenience and a patient-friendly atmosphere were maintained as top priorities.



Image 1_Pager device given to patients while they wait.

The planning process started during the middle of 1999, and the move to the new facility was completed in July 2002. The new design and the implemented changes have dramatically changed our approach to outpatient phlebotomy and allowed us to achieve a new level of patient satisfaction and process efficiency. Four years later, we are motivated to share our experience and discuss our processes.

Historical Background

Patients who reported for outpatient phlebotomy parked at the ground level and entered the facility through a common lobby. They then needed to find the elevators to take them to the second floor. The area designated for outpatient phlebotomy included a large waiting room that was shared with radiology. In that location, radiology functions were adjacent to the outpatient phlebotomy area. This had been the case for many years

with the explicit intention of providing a single waiting area for patients who required x-rays as well as laboratory specimen collection. However, during peak hours, this advantage also generated significant congestion as the waiting room only accommodated 150 seating spaces. Patients and their escorts often increased the need to 200 to 250 waiting spaces. To complicate matters, a new hospital information system required a new process for tracking patient orders. Consequently, a patient's waiting time for phlebotomy was a combination of 2 single queues. The first was reporting for orders, and the second was reporting for laboratory phlebotomy services. After check-in, functions were completed depending upon the time of the day. Patients were either directly invited to the collection rooms or asked to wait in the lobby. Space limitations prevented the combination of these functions at a single reception area. They shared space within the same lobby, but were apart from each other by location.

During peak hours, patients were called for phlebotomy by their names, following the first-come, first-served rule. Fasting patients were the only exception. This exception was, however, inefficient and sometimes annoying to other waiting patients. The phlebotomy collection space consisted of a total of 8 cubicle areas each separated by a solid wall. This created a patient-friendly space and provided privacy and comfort for the phlebotomy service; however, the number of rooms was not sufficient to handle the demand at peak hours. This in itself also contributed to longer waiting times for patients. Although the laboratory and clinical services scheduled patients for elective draws to minimize wait time and increase efficiency, one third to one half of the workload were unscheduled patients who needed to be served.

As patients moved from laboratory receiving to the phlebotomy area, a single open doorway provided entry into and exit from the phlebotomy area. Although the doorway was wide, congestion remained a problem during peak hours and was aggravated by wheelchair traffic. Patients were escorted to the phlebotomy area, directed to a phlebotomy room, and given their paperwork. If all rooms were in use, the patient was invited to sit in a sub-waiting area. Following the first-come, first-served rule, the next available phlebotomist called the patient. Using this process, the goal was to serve patients with no more than 15 minutes of wait time. Although this goal was realized during slow times, it was not consistently achieved during peak times. Even with the eight rooms operating at full capacity, it was not unusual for patients to wait a total of 30 to 40 minutes. This created a significant level of patient dissatisfaction as well as a stressful atmosphere for laboratory employees. This scenario presented many opportunities for improvement.

New Approach

The new available space was located on the first floor, which is the same level as patient parking. This in itself was very appealing as phlebotomy functions could be performed in a location that would be easier for patients to locate and would not require elevator use.

The new design was driven by our goals to consistently minimize patient waiting time to 10 minutes, maximize patient confidentiality, provide a safe environment, and create a pleasant patient experience. This was achieved by significantly increasing the number of collection rooms and decreasing the size of the waiting room to 50 seating spaces. Reducing the size of the waiting area was a system-wide initiative to present



Image 2_Phlebotomy control desk used for triage operation by the control person.

or seated in the waiting area after receiving a pager. The average wait time is now 5 to 10 minutes. This specimen collection efficiency has been achieved, in great part, by the new redesigned processes described below and by the supporting architectural design.

Each collection station is equipped with a button to indicate that a phlebotomist is present, a next-patient call button, and an emergency alert button. By this design, the personnel at the control desk can assess and monitor the number of manned stations available at any given time and triage patient flow accordingly. This design allows staffing changes to be made continuously as needs demand. The new design



Image 3_Master Control Board—alerts the control person of the personnel/patient availability.

a more patient-friendly atmosphere. We introduced the use of a pager system to alert patients of their turn for phlebotomy, as opposed to calling out their name in the waiting area. We also decided to combine the functions of 2 reception desks into 1 to create efficient 1-stop re-

porting for patients. The new desk has 4 queuing stations to accommodate both patient receiving and problem troubleshooting.

includes a total of 16 private cubicle stations. Staffing is accomplished not only by full-time equivalents (FTE) from phlebotomy, but also by the flexible scheduling of other individuals from the clinical laboratory staff. The new design accommodates a unidirectional patient entrance and exit. Patient flow is further enhanced by clear signage and colored floor tile.

When patients are invited to the phlebotomy area, control desk personnel generally escort them to the next available phlebotomy room. This creates a new level of efficiency, as patients are always accompanied by a laboratory employee to eliminate any patient confusion. Phlebotomists generally stand and greet the patients at the entrance to their stations; however, during peak hours each phlebotomist remains in his/her room to maximize efficiencies. Privacy is provided in

Public restrooms are available near the waiting area; however, 2 restrooms are also incorporated into the drawing area to allow for urine specimen collection at the time of phlebotomy. The patient receiving area also has a built-in private space if laboratory personnel need to have a discussion with a patient. This prevents intrusion from other patients or staff. Waiting lines have essentially been eliminated, as patients need only report once now. At the time of reporting to the reception desk, they are either invited directly into the specimen collection area

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Image 4_Phlebotomy facility as seen by patients entering the area.

each of the individual phlebotomy areas by solid side and back walls and a retractable curtain at the entrance. The design utilizes a color scheme that provides an inviting and serene atmosphere for patients of all ages. Two of the rooms are designed for patients with special needs. These rooms are equipped with recliner chairs, wheelchair arm boards, infant collection stations, and height-controlled phlebotomy chairs. Solid doors at the entrances provide additional privacy. Lighting design and placement in all of the phlebotomy rooms was carefully planned to eliminate any shadows that could interfere with collection site visibility.

There are now 12 phlebotomy rooms in the laboratory space, but a buffer back-up design allows for 4 other rooms to be easily and quickly converted into additional drawing rooms. These extra rooms are part of the pre-op anesthesia evaluation department. While the pre-op anesthesia peak time is in the afternoon, phlebotomy peak time is in the

or sight impaired, found the lights and vibration features very convenient. The pager also creates a pleasant diversion for the patient and their family. (Image 1)

2. Phlebotomy Control Desk: This new area is located directly behind the patient reception desk and behind a glass partition. It supports a process that is new to this location. The control desk personnel initiates the pager call of the next patient in queue, greets and confirms identity when the patient reports with the pager, escorts the patient to the phlebotomy station and introduces the phlebotomist to the patient. The pager is collected by the control person and returned to a charging base for further use. (Image 2)

3. Master Control Board: This tool is used by control personnel to determine the availability of phlebotomy rooms and phlebotomists. The board consists of lights that are wired



Image 5 (a)_Phlebotomy drawing room.



Image 5 (b)_Light switchboards in the phlebotomy drawing room used for communication with the master control board.



Image 6_Dumb waiter used to transport samples from the outpatient phlebotomy area to the central specimen processing area directly below.

early morning. This cooperative team approach allows the efficient use, by both neighboring departments, of highly valuable first-floor space.

With the intent of improving patient satisfaction by decreasing waiting time, the following measures, process changes and innovations were implemented:

1. Pager Device: Pagers are labeled and issued following a process that links a single device to each patient. Patients are alerted to return for phlebotomy by the device's flashing lights and vibration. The goal was to improve patient confidentiality by eliminating the calling of names and allowing the patient more freedom to ambulate in the area. We were pleased to discover that most patients, and especially those who are hearing

to each phlebotomy room. Each light is identified with the corresponding room number. The phlebotomist communicates by 2 lighted buttons that he/she is staffing the room (red color) and is available for the next patient (green color). An emergency alert button is available in each room as well. When the emergency button is used, a room-specific light flashes on a second light board (to the right of the clock). This allows for immediate response by the control person. (Image 3)

4. Phlebotomy Area: This is the area as seen by the patient and control personnel. Rooms are separated by solid walls and equipped with curtains to provide privacy, easy access, and efficient use of space. Arrows identify the control desk, master control board, and emergency lights. (Image 4)



Image 7 Recessed computers that prevent patients from viewing confidential information.



Image 8 Sub-waiting area for patients inside the drawing facility.

5. Phlebotomy Room: A room consists of a custom desk, cabinet, sharps disposal container, and supply area. **(Image 5a)** As previously described, the phlebotomist uses lighted buttons to communicate with control personnel. **(Image 5b)**

6. Dumb Waiter: A dumb waiter connects the first floor outpatient phlebotomy area with the central specimen processing area located directly below on the ground floor. Specimens and containers are transported between the 2 locations by the press of a button. A pneumatic tube system is also available for specimen transportation to the main laboratory as well as to other areas of the institution. **(Image 6)**

7. Recessed Computers: Computer monitors that face the public at the reception desk are located beneath the counter to prevent the possible viewing of confidential information. **(Image 7)**

8. Sub-Waiting Area: Patients sitting in the sub-waiting area have the feeling of being served as opposed to still waiting. The area accommodates a maximum of 10 patients and at peak hours assures the continuous flow of patients to the drawing rooms with a minimum of standby time. During slow times this area is used as a semi-private space to speak to patients while giving further instructions. **(Image 8)**

9. Entrance and Exit, Specimen Drop-off, and Reception: A separate entrance and exit for patients enhances patient flow. This prevents congestion and allows for patient flow, including wheelchair traffic, to be very efficient. **(Image 9)**. The new reception desk can accommodate all necessary functions required to provide a single encounter between the receptionist and the patient. The desk itself is designed at an angle to provide convenient access to patients using wheelchairs. This feature has been very well received as handicapped patients can more comfortably interact with staff. The specimen drop-off area allows for



Image 9 Entrance and exit, specimen drop-off and reception area as viewed by patients entering our facility from the main clinic.

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convenient delivery of urines and/or other specimens collected by patients at other locations. Receiving personnel communicate with the control person and others by a pass-through located beneath the glass partition. A floor plan is shown in **Image 10**.

Summary

Our team approach to improving patient satisfaction with our outpatient phlebotomy services has been successful. Patient comments are received daily about the pleasant atmosphere and efficient services. In addition, external surveys have shown a steady increase in patient satisfaction.

The improvement in the total patient experience is the combined result of many innovations. These include pagers, light control system, control desk area with pass through window, and dumb waiter. Although these items had no previous proven record of success, they were implemented based on the process redesign. During early planning, we recognized that future success was dependent more upon a series of intertwined and complementary steps as opposed to a single specific change. The process we created maximizes the efficient use of the phlebotomists' time and minimizes patient waiting. This was clearly evident the day that more than 115 patients reported and had their specimens collected within a single hour. The current record is 576 patients reporting for outpatient phlebotomy in a single day.

Even though we have made huge strides we continue to seek ways to improve our operation. Success is gratifying, but always much more rewarding when it comes in the form of patient satisfaction. LM



Image 10_Floor plan.