

Hospital planning strategies for improving patient access and orientation within the hospital

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Most hospitals have been designed through a process of accretion where new areas are constantly added or modified to account for increasing volumes, changing technologies, codes and patient populations. The result is a very complicated building which poses several difficulties in terms of wayfinding and orientation to patients, visitors as well as staff. This paper describes the results from a programming and planning project at a large hospital where the focus was on relocating the admissions department within the hospital to improve patient access and orientation.

The study was conducted during a one-month period at a private non-for-profit tertiary care hospital in Atlanta, Georgia. The hospital offers most major medical, surgical and diagnostic services. It has 500 beds, 3,000 employees and a medical staff of more than 800 board certified physicians. It has grown incrementally over the last 46 years, at its current location, with periodic vertical and horizontal expansions as well as continual renovation projects. This growth and expansion has resulted in a complicated building layout, and there are problems with patient access and movement through the building. The admissions department - the focus of this study is plagued by several problems:

- Inadequate space for waiting and consultation
- Difficult to reach from parking structures: the admissions department is located near the main front entrance where there is no parking, only a drop off area; the parking is located on the opposite end of the site, 'behind' the hospital.
- Functional areas are not well connected resulting in more wayfinding problems

The admissions department comprises the inpatient admissions and outpatient admissions. Currently, these are two physically separate entities and their functions do not overlap much. The inpatient admissions department is responsible for registering and admitting inpatient surgery, outpatient surgery and direct admit patients, while the outpatient admissions registers patients receiving outpatient services at the hospital (such as x-rays, blood tests etc.).

Study Objectives:

- To propose a planning strategy to address patient access and orientation problems at Piedmont Hospital.
- Focus on the location of the admissions department within the hospital and how a move to an alternative location may improve patient access.

Scope of Project:

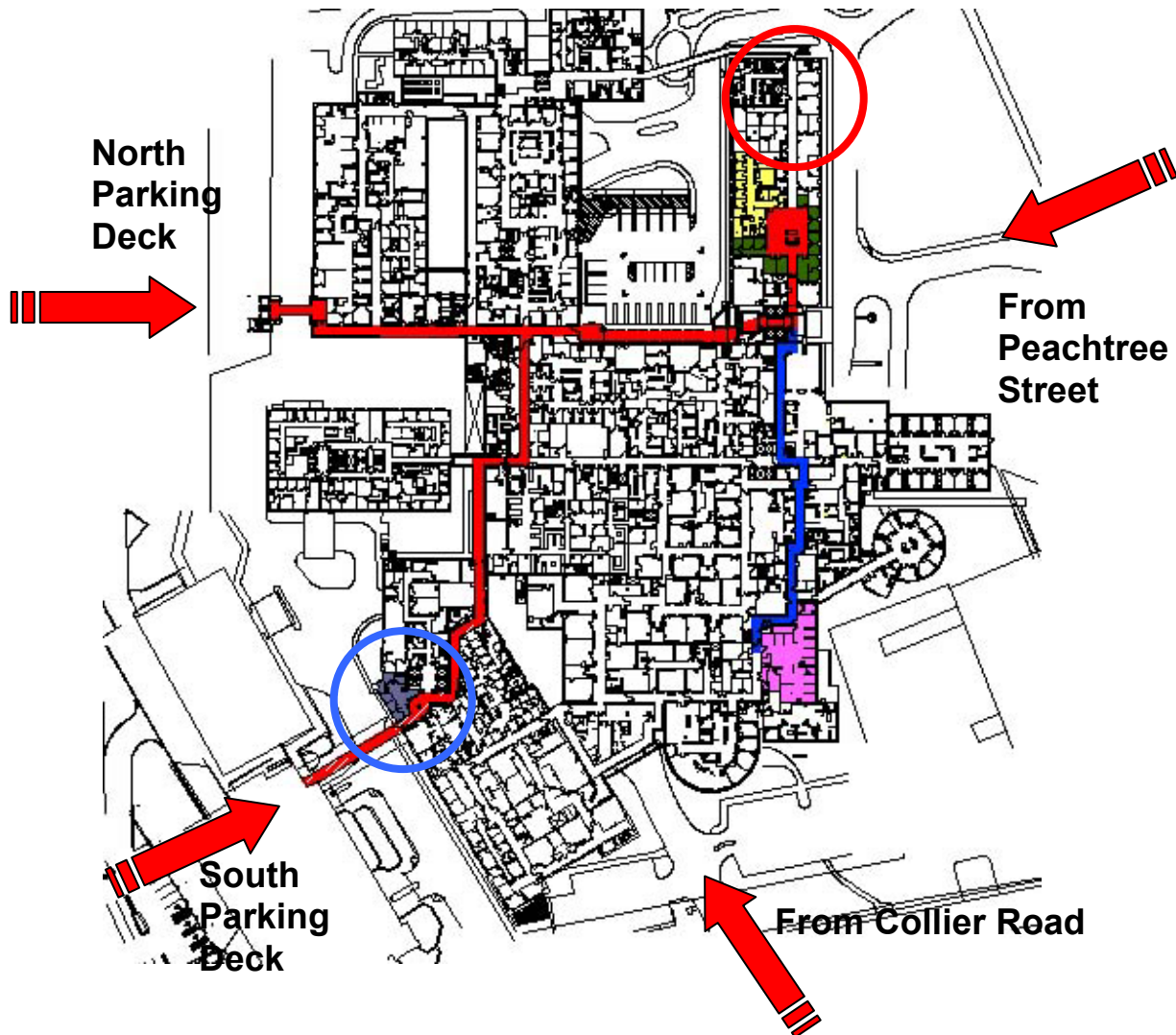
- Departments and activities on first floor
- Site circulation and access issues.

Method:

- Analysis of floor plans
- Observations
- Interviews with staff and department heads

Current Situation

The problem of access and movement through the building starts at the site level. The hospital, built in the 1960s, was much smaller and designed to be accessed by pedestrians and a small number of cars. Currently, most people use cars to come to this site, though it is also accessible by public transportation. There are two main access roads. The ‘main’ entrance to the hospital faces Peachtree Street, an important busy street. Visitors entering from this street may drop off patients at the drop off circle at the front entrance and proceed around the building to the back where two parking structures – North and South Parking are available for public parking. Visitors may also enter from Collier Road and proceed directly to the parking structures (see plan 1)



Patients then walk a long distance from the parking structures to the inpatient. They walk a long way to Inpatient Admissions (circled in red) along the path shown in red. The outpatient admissions department (circled in blue) is located in a remote corner of the hospital and is very difficult to find from the North Parking Deck or the front entrance. Inadequate space for waiting is a problem in both these areas. The tight space in

the outpatient waiting area also results in confidentiality problems during consultations with staff.

Since a key aspect of this project involved proposing a design solution within an overall systems framework, it was critical to understand how patients interacted with different spaces in the process of receiving care at the hospital. Here, I will briefly outline the steps involved for an inpatient surgery patient.

Inpatient: Process

Inpatient surgery: pre-surgery visit

Step 1: Surgery scheduled by physician's office

Step 2: Patient is given a map with directions to admissions

Step 3: Patients goes over to inpatient admissions 30 to two days before surgery

Step 4: Patient registers with the admissions desk

Step 5: Patient discusses demographic, financial and insurance related information with the admissions staff in room. Photocopy of insurance card is taken

Step 6: Patient waits in admission area

Step 7: Patient is called in for pre-surgery testing in the Admit Testing Area (ATA). Basic lab work, EKG etc done based on physicians orders. If chest x-ray or additional procedures are required, patient is sent to other inpatient departments.

Step 8: Patient leaves for home

Inpatient surgery: day of surgery

Step 1: Patient checks in at the admissions desk 2 hours prior to surgery, is given a wristband and papers are checked to see if all is in order

Step 2: Patient waits in admissions waiting area until *AM admit calls admissions* for the patient

Step 3: Admissions staff give directions to the AM admit

Step 4: Long confusing walk with misleading signs

Step 5: After preoperative procedures in AM Admit are completed patient goes to the operating room for surgery

Step 6: Patient goes to Post Anesthesia Care Unit (PACU)

Step 7: Patient taken to inpatient bed or Intensive Care Unit (ICU)

Breakdowns, in terms of disorientation and communication problems occur during both visits, though during the second visit the problems with location of functional areas become more evident:

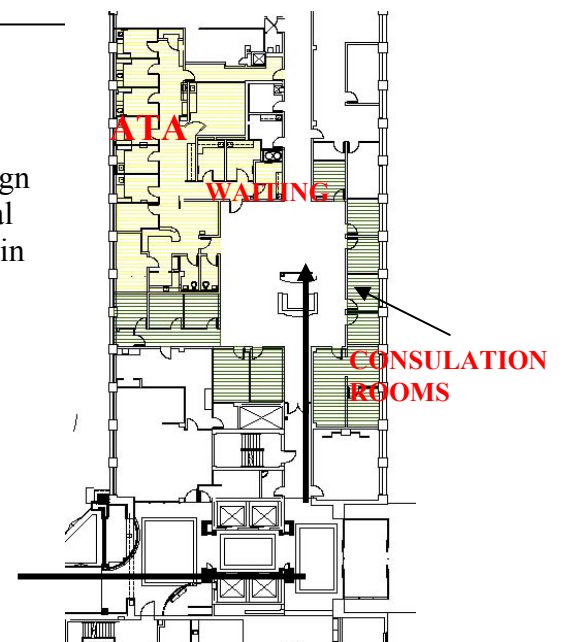


Fig. 2: Pre-surgery visit

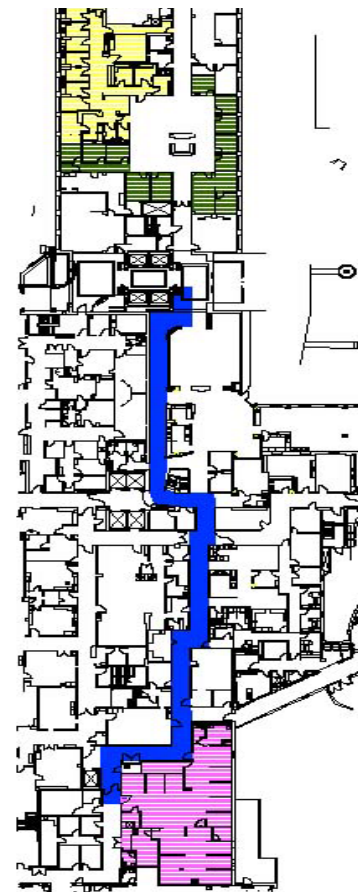


Fig 3: Day of surgery visit

- AM admit calls the admissions desk to let them know that a patient is to be sent over. Problem occurs when no one is at the desk to take the call – as a result of the lack of proper communication the patient keeps waiting.
- The waiting area fills up quickly with pre-surgery patients and surgery patients who are waiting to be sent to AM admit.
- The long walk to AM Admit is confusing without adequate signage. Also, it is not clear when one reaches ones destination – AM Admit is not marked clearly.m Unaccompanied ambulatory surgery patients are stressed as it is, this walk adds to their confusion and disorientation.

Outpatient

The figure below shows the location of the outpatient admissions and the different outpatient departments that patients must find their way to. Clearly, the outpatient admissions is very remotely located. According to staff members it is a nightmare to give directions to patients to the different departments. The neuro-physiology and respiratory

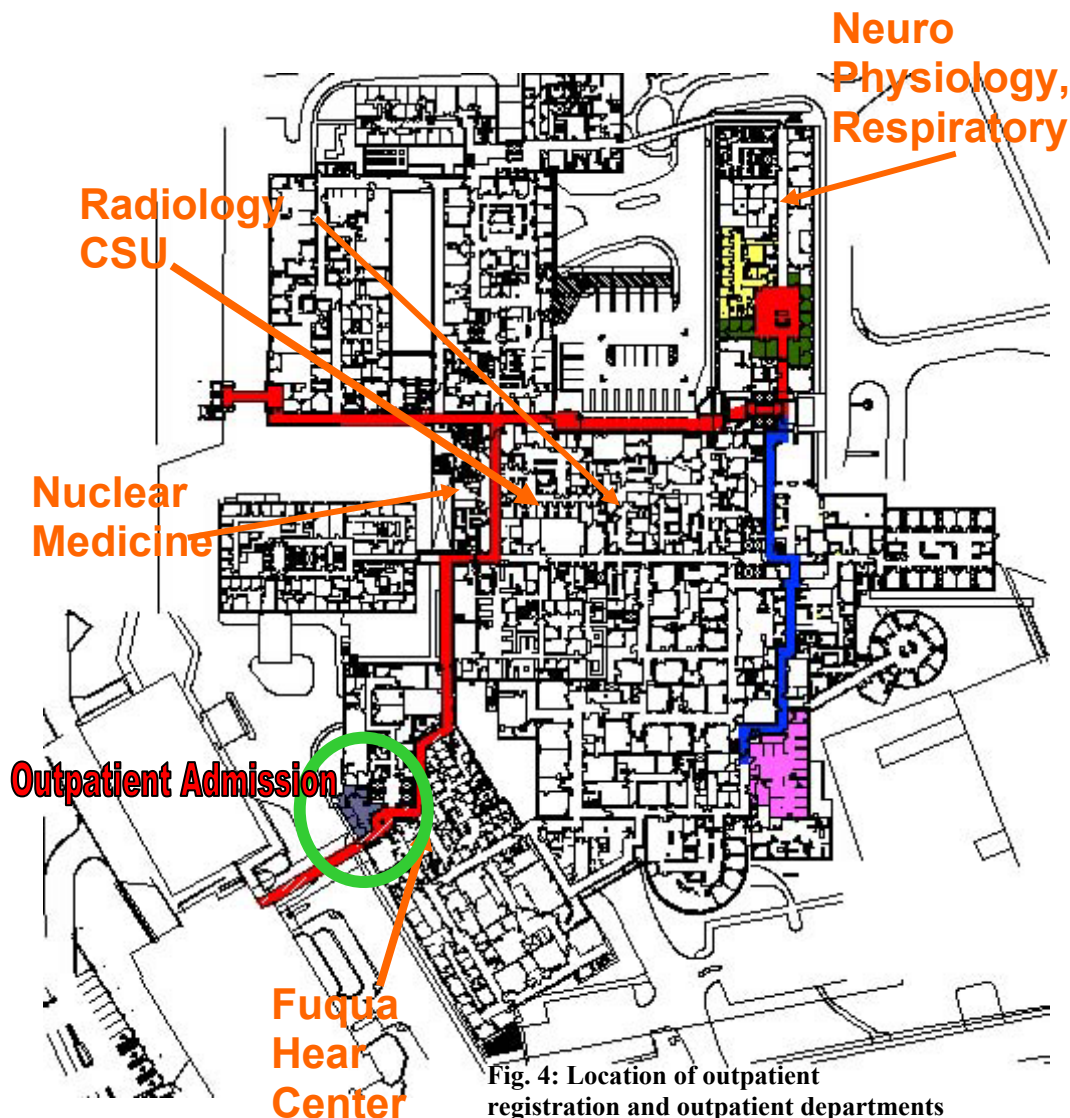


Fig. 4: Location of outpatient registration and outpatient departments

departments were cited as the most difficult destinations as they are at the opposite corner of the building and a floor below the admissions level. Outpatient admissions staff said that many people needed physical assistance in getting to these places and they did not have enough staff to do such tasks.

Key Planning Considerations

Based on the assessment of the existing situation, we identified key factors that must be addressed in the new design solution:

- **Good visibility and presence** from main entry points (North and South Parking Decks)
- **Ease of access** from North and South Parking decks as well as front entrance.
- **Short and simple connections** to outpatient services (cath lab) surgery pre-op, pre admit testing to increase efficiency and patient convenience.
- **Additional waiting areas** to accommodate pre-surgery as well as surgery patients and family
- **Create direct connection** between AM admit area (surgery pre-op) and patient waiting area to remove admissions as the ‘coordinator’

New Location

We decided to relocate admissions to a more central part (hatched in red) of the facility based on the following factors:

- Easily accessed from North and South Parking Deck and main entrance
- Opportunity to utilize space vacated by laboratory (1)
- Build upon proposal to develop new lobby/entrance area opposite N. Parking deck
- More central location – closer to radiology, surgery (4), outpatient departments
- Opportunity to utilize open space over doctor’s dining area

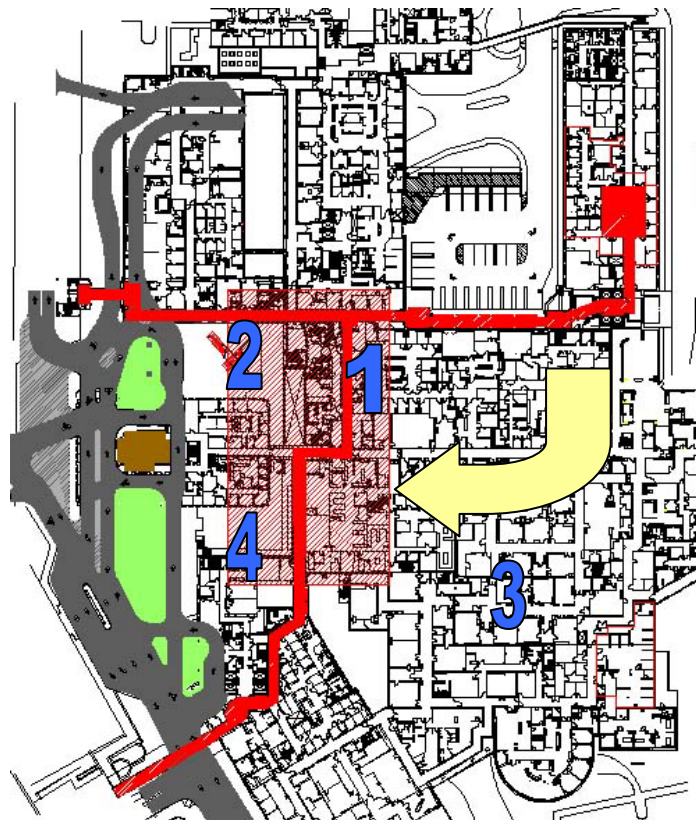


Fig. 5: New location of admissions and support areas (hatched in red)

Design Strategy

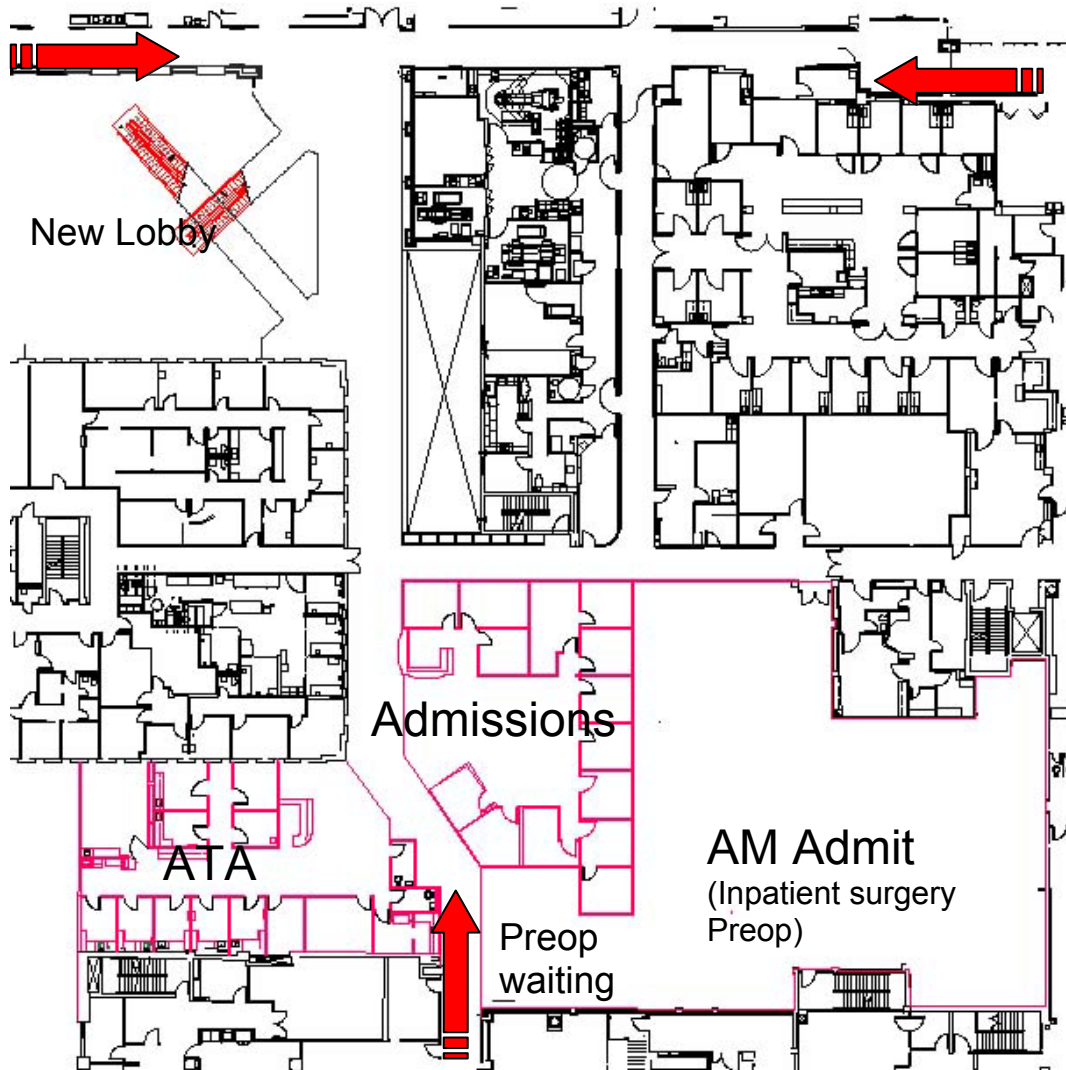


Fig. 6: New design for admissions area and support services

- Patient entrance/ lobby connects N. Parking Deck and ground floor to admission
- Admissions, AM Admit and Admissions Testing Area (ATA) are located near each other eliminating walk from admissions to AM Admit
- Inpatient and Outpatient Admissions to be located in one area
- Admissions and AM admit to utilize space vacated by lab
- ATA to utilize open space over doctors' dining area
- Waiting areas created for Admissions, ATA and AM Admit

Potential benefits of modified patient flow:

- **Equidistant location** from North Parking Deck, South Parking Deck and front entrance
- **Good visibility** from main circulation paths and new patient lobby
- **Separate waiting spaces** for Admissions and AM Admit (inpatient surgery prep).
- **Direct connection** between admission and AM Admit – walk removed
- **Ease of communication** between admissions, ATA and AM Admit.
- **Good connection** between AM Admit area and operating rooms (located to right of AM Admit)
- **Single stop** for outpatient and inpatient
- **Centrally located** with respect to outpatient services

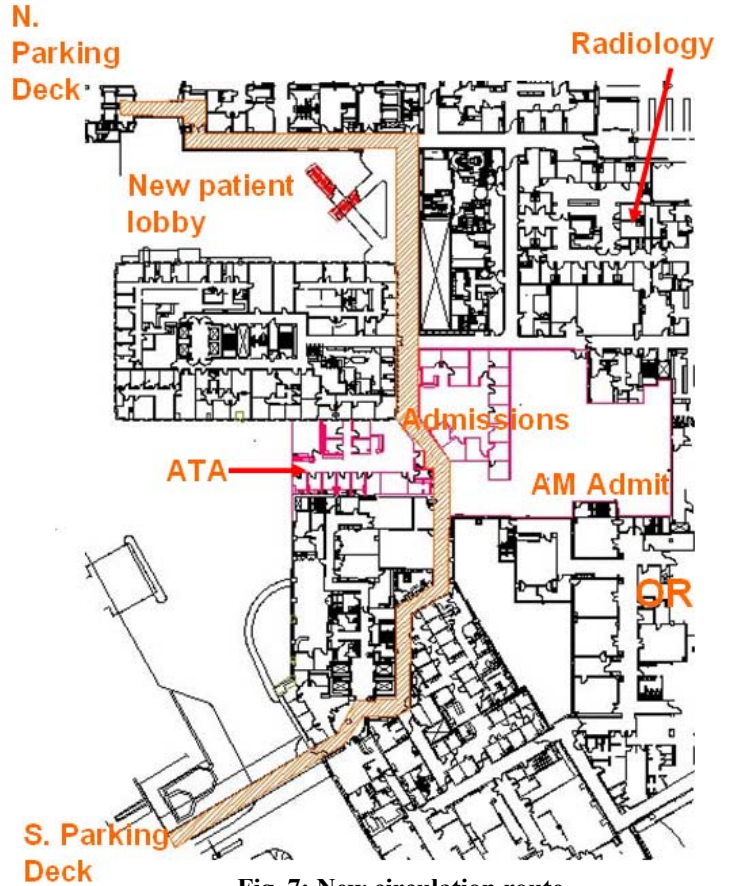
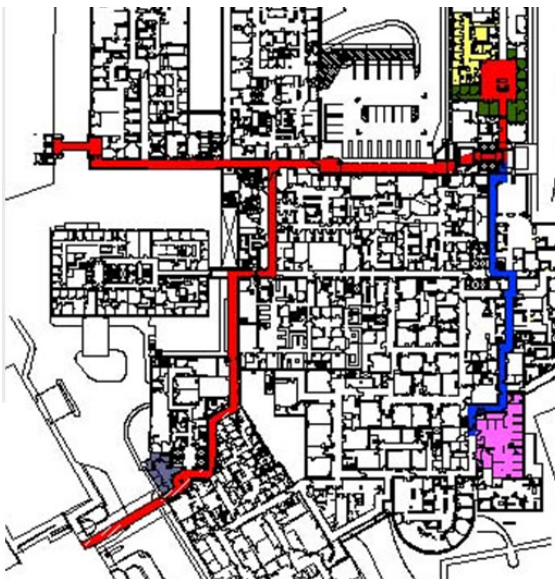
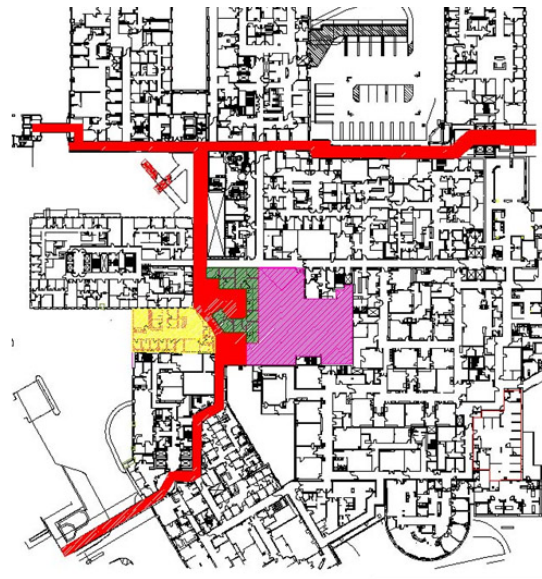


Fig. 7: New circulation route

A visual comparison of movement paths before and after relocation of admissions department



BEFORE



AFTER