



# UNH Health Services Procedures and Patient Data Analysis

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## Abstract

The objective of this project was to study the current out-patient admission, service and discharge process at the University of New Haven (UNH) Health Services Office and to identify areas for improvement. The processes studied were a) patient sign-in, b) patient service, and c) patient sign-out.

The waiting time and patient satisfaction were the two areas of improvement identified. To address the area of patient satisfaction, a flowchart was created to indicate the complexity of the process. To address the issue of waiting time, a patient time sheet was created and patient waiting time and treatment time data were analyzed.

## Objective

The Health Services Office at the University of New Haven (West Haven, Connecticut) is the primary provider of on-campus medical care in cases of student illness or injury and it is also responsible for educational health programs.

The objective of this project was to document the current out-patient admission, service and discharge process at the University of New Haven (UNH) Health Services Office and to identify areas for improvement.

## Methodology

The first phase of the project was dedicated to understanding the current out-patient admission, service and discharge process at the UNH Health Services Office and to identify areas for improvement.

Site visits were undertaken to obtain an understanding of the flow and resources involved in delivery of the health services.

Based on observations of the process and discussions with staff, a flow chart of the process was developed which provided a foundation to identify major areas for improvement.

In addition, a second flowchart, shown in Figure 1 was developed to utilize as an educational tool so that patients could understand the overall complexity of the treatment process.

The second phase of the project was devoted to analyzing the time patients spent in the UNH Health Services.

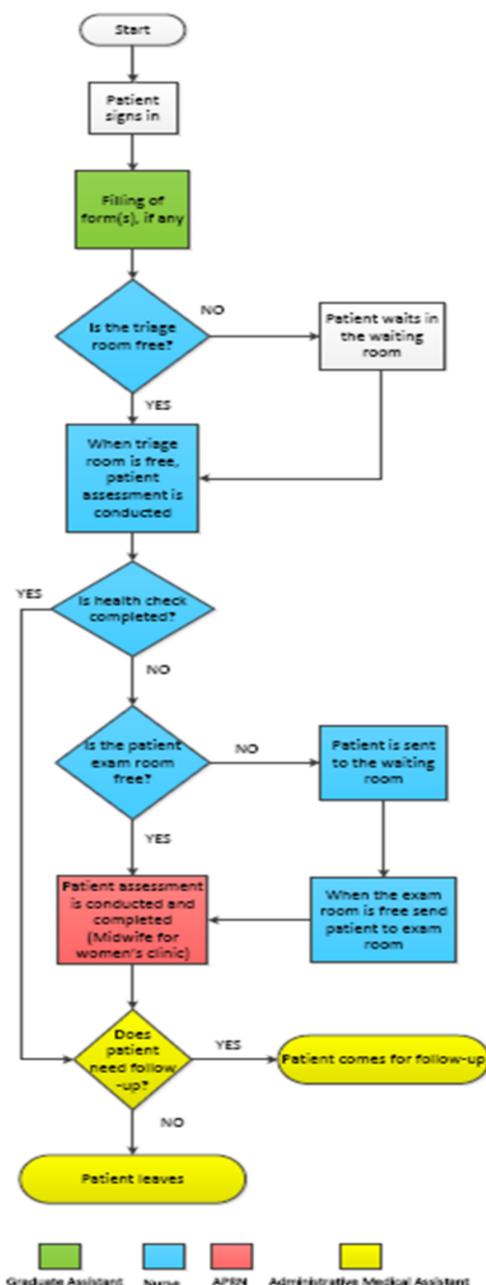


Figure 1: Flowchart

## Areas for improvement

**Patient satisfaction:** Based on the discussion with patients during site visits, and with staff, it was determined that treatment time and waiting time were sources that negatively affected patient satisfaction.

A flowchart shown in Figure 1 was created as remedy to create awareness among patients about the complexity of the overall treatment process. This chart was put in display in Health Services waiting area.

**The waiting time:** The initial patient time study completed during phase one indicated the waiting time to be a problem. However the sample size was too small to make any statistical inferences.

A formal timesheet shown in figure 2 was used to collect data regarding patient waiting time and service time which was then integrated into the daily routine of the Health Services Office staff.



## University of New Haven Health Services Office

### Patient Time Sheet

Note- please fill in the patient time in the corresponding columns

DATE	SIGN-IN TIME	TRIAGE ROOM		EXAM ROOM	
		START TIME	END TIME	START TIME	END TIME
COMMENTS					

Figure 2: Patient Time sheet

## Data Analysis

A total of 393 patient time sheets were collected. 365 patient time sheets, i.e. 92.87 percent of the initial data, were included in this study, which were categorized as shown in figure 3

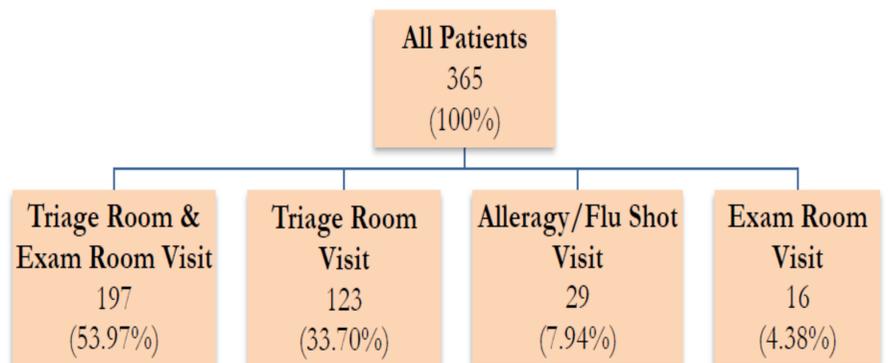


Figure 3: Patient time sheet categorization

Each of the above mentioned categories data were analyzed using Minitab a statistical analysis software, to calculate the descriptive statistics and box plot values. The descriptive statistics was further divided into the following categories

•**Initial Waiting Time:** It is the time between patient sign-in and start of triage treatment. Patient is in the waiting room during this time.

•**Triage Treatment Time:** It is the treatment time in the triage room, which is the difference between the triage room start time and triage room end time.

•**Exam Room Waiting Time:** It is the time between triage room end time and exam room start time. Patient may be in the waiting room or in the exam room during this time.

•**Exam Room Treatment Time:** It is the treatment time in the exam room, which is the difference between the exam room start time and exam room end time.

## Results

The following is a summary of the one month patient time analysis of the UNH Health Service Office.

Most of the patients who visit UNH Health Services undergo both Triage room and Exam room visit, where they spend 15 to 25 minutes to complete their treatment.

Among all patient treatment types the maximum time a patient spent being treated was in the exam room and the minimum time was for their allergy/flu shots.

On an average a patient would spend 10 minutes waiting for their triage room treatment and 20 minutes waiting for exam room treatment.