Workload Analysis of MVN Nurses
Team 4 Final Report

Submitted to:
Nancy Moran Rose, MPH, RN: Director of Home Care Nursing and MVN/MVC Operations

Renee Curtis, RN: Vice-Chair UMPNC

Mark Van P. Oyen, PH.D: Department of Industrial and Operations Engineering, University of Michigan

Project Coordinator:
Mandy McKay: Project Manager of Home Care Services

Submitted by:
Matthew Alter

Kosta Kontoyiannkis

Maurice White

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Executive Summary

The University Medical System (UMS) and the University of Michigan Professional Nursing Council (UMPNC) are approaching contract negotiations in the near future. Before the negotiations each party would like to address the availability of quantifiable data that describes the Michigan Visiting Nurses (MVN) visits. Both parties hope that such data can be used in combination with current workload data to help determine the appropriate workload for MVN nurses in the future. UMPNC and UMS asked the IOE 481 student team to gather data concerning the activities performed during homecare visits. The team shadowed 12 different nurses over the course of 48 patient visits. The team also analyzed and quantified the nursing tasks. The purpose of this report is to provide data to the UMPNC and the UMS where little existed before.

Shadowing MVN nurses yielded some high level information regarding their daily activities. Insight was gleaned concerning the use of laptops in homes; how daily time was divided amongst nursing activities (in home work), travel time, and prep work; and reasons for why documentation data was not available during this study. The team found that in a nurse’s day, 51% of their time is spent doing nursing activities. Also, 34% of the time was spent driving and 15% was spent doing prep work. Documentation was not included in the breakdown because the team did not see documentation done most of the time. The team also collected information regarding the nurses’ perspectives regarding their jobs.

Another important area of focus was compliance issues with documentation. The team reviewed reported data from 1 Sept 2009 to 20 Nov 2009 concerning lock errors of OASIS documents. It was found that 18.6% of reports were turned in beyond the 30 day window to receive prompt payment. This does not necessarily mean that payment will not be received for services rendered, but it will be delayed and possibly not received.

Laptops Taken into Home Visits

The team found that the nurses did not always bring in their laptops, which are used for documentation, into the home. Out of 29 visits monitored (where nurses were assigned laptops), nurses only brought in their laptops 62% of the time. The nurses often explained that the laptops upset the patients and distracted the nurses from providing high quality patient care. However, by not completing documentation at patients’ homes, the chances for errors increases as well as the amount of work nurses take home with them.

Documentation Compliance

From data provided, the team was able to identify that the documentation standards were not being met on a consistent basis. In fact, 18.61% of the documentation done was out of compliance with standards.
Travel Time of Nurses
The team also identified the percentage of a nurse’s day spent driving. According to data collected nurses typically spent 34% of their time driving. Also, over 70% those travel times were between 10 and 30 minutes.

Travel Time by Team
After recognizing the amount of travel time that consumed a nurse’s day, the team decided to classify travel time based off of nursing teams. Shadowing visits covered six different counties with eight different nursing teams. All nursing teams except Weekend Nurses experience travel percentages between 28% and 36%. Weekend nurses showed travel percentages are 47%; this may be attributable to the limited number of nurses working, and the large area covered.

Nurse Comments
The nurses also gave the team members insight into some difficulties of their jobs. The team was received 52 comments from nine nurses. Over 60% of the nurses expressed that they were unsatisfied with the current computer interface and believed the system functioned poorly. Also, over 50% of the nurses believed that GPS units would be helpful. Other comments made by the nurses included but were not limited to: the nurses would like to do less non-patient related work and the current point system does not accurately reflect the amount of work performed.

Patient Visit Time
According to collected data, nurses spent between 11.5 minutes and 75 minutes with patients. Out of the 48 patient visits observed, 19 were Revisits with an average visit length of 28.84 minutes. The next most popular visit type was a Start of Care visit with an average visit length of 43.25 minutes, followed by OB visits at 57.11 minutes. Beyond these three visit types (which accounted for 33 visits), sample sizes were too small to make conjectures concerning their lengths.

Overall, the team observed 12 different nurses perform 48 patient visits, spanning 86 hours and 16 minutes of observation. These nurses performed 11 different visit types, throughout six counties. It is important to note that the location of the nurse’s visits (rural vs. urban) had little impact upon the percentage of time they spent driving. While rural nurses did drive longer distances, they did so at greater speeds, with less stopping, and seemed to get lost fewer times. Nurses working in urban environments had to negotiate with one-way streets, large apartment complexes, and poor signage that resulted in longer drive times, even though they occurred over relatively short distances.

From this data the team came up with a list of recommendations to ease some of the non-nursing burdens of the nurses. The first recommendation is to retrain nurses on filling out OASIS documentation. The second recommendation is to provide nurses with personal GPS units. Nurses were always able to find patients’ homes, but the use of a personal GPS unit would allow them to get there with less confusion and at their predicted time. This may provide more than just monetary benefits to all parties involved as the nurses expressed frustration over being late to visits. The final recommendation is to improve
the computer interface used for documentation. There was a general consensus amongst
the nurses that the current system was somewhat difficult to use. Improving the
computer interface may result in less frustration, shorter times, and more accurate
documentation of patient visits. Additionally, considering the high level of
dissatisfaction with the documentation system, improvement may also result in a
reduction in nurse turnover.
Introduction

Currently, the University of Michigan Professional Nursing Council (UMPNC) and the University Medical System (UMS) are fulfilling an agreement to analyze the workload of their visiting nurses. Neither party has complete, quantifiable data describing the Michigan Visiting Nurses (MVN) activities. With contract negotiations approaching between the two sides, it is important that data are collected so that quantitative and qualitative information can be exhibited during the next round of negotiations. Providing both parties with current workload data will help determine appropriate workload for MVN nurses going forward. The student team conducted a series of studies to analyze the tasks involved during nurses’ visits. These tasks included but were not limited to: prep time, travel time, direct patient care, and documentation. The purpose of this project is to provide data to the UMPNC and the UMS where little existed before.

Background

MVN nurses perform home care for patients whose condition is not bad enough to warrant constant supervision by hospital medical staff, but are not yet capable of managing their own care. The nurses’ responsibilities include but are not limited to: scheduling visits, educating patients and family about care, ordering supplies, and documenting care. Due to a multitude of factors, the MVN division has been seeing significant monetary losses.

During recent contract negotiations, the UMS and UMPNC agreed to have a third party perform a workload analysis of the MVN nurses. Loss of revenue that has driven this study has resulted in large part from billing and documentation errors (most notably from Medicare/Medicaid). MVN requires that their nurses turn in completed documentation within 48 hours for internal review before submitting for reimbursement.

Goals and Objectives

The primary goal of this project was to gather data regarding the way MVN nurses spend their work days. Due to the lack of quantifiable data about their daily activities, this team was brought in to fill that gap.

Methodology

To successfully complete the required elements of this project, the team focused two main sets of information: a time study of MVN daily nursing activities performed by the team; and an analysis of error and submission timeliness of documentation supplied by the project coordinator.
The time study consisted of the team members shadowing MVN nurses during their daily activities. Team members rode in the nurses’ vehicles to avoid interfering with the nurses’ travel time, get the opportunity to ask questions between visits, and save on fuel.

Each member kept track of nurses’ travel times and the activities during the visits shadowed. Collection and analysis of data was an intensive and difficult process. Both data collection and data analysis provided their own unique problems that required attention. As a result, original approaches had to be altered and the focus of the analysis was modified.

**Data Collection**

Data collection was completed over the course of six weeks which involved shadowing 12 nurses over 86. To accomplish this, the team solicited the help of the Administrative Assistant to the MVN Director, who assigned team members to nurses while considering visit types, locations, and schedule compatibility.

Team members shadowed nurses for varying lengths of time, ranging from four to ten hours. Team members’ availability had a strong impact on the length of visits with the nurses, most notably their opportunity to travel for a complete shift. The resulting effects of the previous issues on the data analysis will be discussed at greater length in that section.

**Pilot Shadowing of Nurses and Preparation for Data Collection**

Before the team members were able to collect data a nurse was shadowed to understand how their days operated. This pilot shadowing allowed the team to get some understanding of how the nurses conducted their visits. At this time the team also obtained lists of activities that nurses performed for each visit type from the Vice-Chair of UMPNC. These lists were used to construct an automated data collection tool.

**Data Collection Type**

To gather information about the nurses’ processes, the team created a macro-enabled Excel® workbook that was designed to capture the time the nurses took to complete important tasks. Separate sheets were devised for each type of visit a nurse may go on (revisit, admission, etc.), and a sheet to account for travel and prep time. The sheets documenting visit types included activities the nurses may complete as provided by the Vice-chair of the UMPNC.

The following sections are descriptions of the nursing activities that appeared most frequently. It is important to note that the team did their best to distinguish between the varying activities. However, due to the nuances between certain activities and the team members’ limited experience in the nursing field, the exactness of the recorded activities is suspect. This was one of the main roadblocks that drove the way data from nurse shadowing was analyzed.
• **Prep Time** – For this study Prep Time took on several definitions. It was used to quantify activities that were not directly related to in-home visits and travel time. Some examples of Prep Time include: printing directions to patient homes, calling physicians, meetings, confirming patient appointments, etc. Due to the fact that these types of activities happened for multiple patients at one time, it was not possible to distinguish which activities were being performed for which patient. Although Prep Time activities are technically an aspect of patient care, due to the way they were performed, they were separated out as their own category.

• **Travel Time** - Travel time was the amount of time a nurse took to get from one destination to the next. These times varied greatly depending on the distance traveled, the clarity of directions given to nurses by their patients, and familiarity of the region. The team observed that nurses traveling in urban areas had trouble finding certain address (e.g. a building in an apartment complex).

• **Greet Patient** - Greeting the patient typically was one of the shortest activities completed by the nurses. This activity was generally performed upon entering the home, and consisted of some small talk and a polite inquiry of the patient’s well being.

• **Patient Education** – Many times patient education was performed in conjunction with Questions and Answers as well as Patient Specific Treatment. During these activities nurses’ would instruct patients about their caregivers about treatment procedures, nutrition, home safety, patient’s rights, patient specific warning signs, etc.

• **Patient Assessment** - Patient assessment included actions directed at determining the patient’s current state of health. These actions included taking the patient’s blood pressure, temperature, and asking patient specific. Nurses usually documented during patient assessment.

• **Reconcile Medications** – This activity involved reviewing patients’ medications to ensure dosages were being adhered to, potential interactions, reorder if necessary, etc.

• **Provide Patient Specific Treatment** – Patient specific treatment was a highly variable component of a visit depending upon the acuteness and type of the patient’s condition.

• **Questions and Answers** – During this time, the nurses asked questions about the everyday routine of the patients relative to the care they were being provided along with the patient’s current state of being. Also, patients had the opportunity to ask questions of the nurses concerning care and the chance to make requests for patient related health alleviators such as an increase in the dosage of their medications.
- **Document Patient Care** – This was another highly variable activity depending upon the type of visit the nurse was on. Revisits required less documentation of treatment compared to a Start of Care visit where an OASIS must be filled out.

**Findings**

Two main types of data were analyzed for this project: time studies and documentation reports.

**Time Study Data**

Several problems were encountered with the time study data. Due to the team’s limited experience with the nursing field, the categories in which the team placed activities may not be correct. Also, due to schedule conflicts, team members were not able to capture nurses’ entire shifts. Many of the nurses completed necessary documentation at their homes, which limited the team’s ability to observe and quantify this activity.

**Time Distribution of Nurses’ Daily Activities**

The team collected 86 hours of data over the course of five weeks. Figure 1 illustrates the overall breakdown of the nurses’ days.

*Figure 1: Distribution of activities that comprise a nurse's day*

Nurses spend approximately 51% of their time performing in-home nursing activities. However, driving also takes up a large portion of time, comprising a little over one-third of the nurses’ days. Note that documentation is not included in the graph, because much of the documentation was completed at nurses’ homes and the team was unable to gather significant data on that activity.
Taking Laptops into Homes
MVN requires that nurses who have been assigned a laptop take them into patients’ homes to document care. Figure 2 represents an illustration of the percent of nurses that brought their laptop into patients’ home.

Figure 2: Distribution of Computer in Home vs. Computer not in Home

As shown above, 62% percent of the time nurses brought their laptops into the patients’ homes. Some of the reasons expressed by the nurses for not bringing laptop into the home included: patient discomfort, nurse discomfort, the inability to multi-task while performing a high level of patient care. The total numbers represent only the nurses that are assigned a laptop (OB and pediatric nurses are not assigned laptops).

Effects of Travel Time
The team decided to find out more about the amount of travel time that comprises a nurse’s day. Figure 3 represents the distribution of the time nurses spend traveling from one location to another.
Almost 80% of the time the nurses spent between 10 to 30 minutes traveling between destinations. Also, the team found that at times nurses spent over an hour getting from one place to another. This was attributed to factors such as getting lost and unforeseen traffic issues.

Table 1 represents the average travel times observed, grouped by teams. All of the teams spend over 28% of their workdays traveling; small sample size should be noted. The team members observed that despite some of the nursing teams feeling that they had longer travel times due to geographical differences, there is actually very little variability in travel time. What may be different between nurse teams is travel distance; nurses in rural areas have to travel longer distances between patient homes, but don’t have to negotiate the traffic of urban environments. Weekend nurses are an exception with significantly higher travel times, accounting for almost 50% of their workdays. This was attributed to the increased area of coverage that the weekend nurses are responsible for, due to fewer nurses working.

Table 1: Average Travel Time by Teams

<table>
<thead>
<tr>
<th>Team</th>
<th>% Driving</th>
<th>Days observed</th>
<th>Visits observed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lenawee</td>
<td>32.20%</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Livingston</td>
<td>36.15%</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>OB</td>
<td>34.12%</td>
<td>5</td>
<td>15</td>
</tr>
<tr>
<td>Peds</td>
<td>36.85%</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Psych</td>
<td>28.17%</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Washtenaw</td>
<td>28.24%</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Wayne</td>
<td>30.43%</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Weekend</td>
<td>47.32%</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Grand Total</td>
<td>34.41%</td>
<td>20</td>
<td>48</td>
</tr>
</tbody>
</table>
Oasis Documentation Compliance
As previously mentioned, the team was given data from their coordinator regarding documentation compliance. Figure 4 shows a breakdown of the different types of OASIS visits where documentation standards were not met along with the total documentation out of compliance.

Over 35% of documentation standards were not met when patients were discharged from the agency and transferred to an inpatient facility, while the total amount of documentation out of compliance is 18.61%. This means that documentation is turned in beyond the 30 day window prescribed by Medicaid/Medicare. As a result, payments for patient care are delayed or not received at all creating cash flow problems for MVN.

\[ \text{Total out of Compliance} = 18.61\% \]

Nurse Comments
The team collected comments to understand how the nurses felt about certain aspects of their jobs. Figure 5 represents a number of comments the nurses expressed to team members while driving between visits and at the office.
Over 60 percent of the nurses expressed that the program used for documentation was poor. Also, over 50 percent of the nurses expressed that they didn’t like using the computers inside the homes for various reasons and that GPS units would be helpful with traveling between patients’ homes. Nurses also believe that the current point system does not accurately the amount of work that they perform.

**Patient Visit Type**
To further classify data, the team was provided a description of the types of visits that the nurses make.

- **AA-Agency Admission-OASIS** - An Agency Admission visit is generally the first visit made to a patient unless a start of care visit preceded this visit. This visit includes documentation for the full OASIS assessment and care plan for all adult patients.

- **AN-Agency Admission Non-OASIS** - A Non-OASIS Agency Admission visit is generally the first visit made to a patient unless a start of care visit preceded this visit. This visit includes documentation for the non-OASIS nursing assessment and care plan.

- **AV-Start of Care** - This is the first visit made to a patient to start care. This is not the full admission visit in which the OASIS assessment and care plan are completed.

- **BB- Bundle Bill Visit** - This code is used exclusively for HomeMed patients. This visit type is used when doing all visits (including the initial visit and the last visit) on a HomeMed bundle bill patient.
• **DV-Discharge** - This visit type is used if nurses do a service discharge or a final agency discharge at a visit. To use this visit type nurses must provide a skilled service at a visit and complete the discharge documentation.

• **EV- Evaluation visit** - This visit is used when nurses are in the patient’s home doing an evaluation for admission and unexpectedly cannot complete the visit to Home Care Services.

• **HV-Home Visit (Revisit)** - Regular home visit. This will be the routine unless one of the other visit types below describes the type of visit more accurately.

• **NH- Not Home/Refused Visit** - This code is used when nurses drive to the patient’s home and the patient is either not home or they refuse the visit. This must be a scheduled and confirmed visit and nurses must go to the home and attempt the visit to use this code.

• **RO-Resumption of Care** - This visit type is used generally on the first visit after a patient returns home from the hospital. A Transfer to Hospital document should have preceded this visit. If the patient’s condition has changed, new orders to resume care should accompany the ROC visit.

• **RV-Recertification** - Recertification visits occur within 5 days of the end of the episode and include all documentation (assessment, care plan, etc.) required for recertifying the patient.

• **SA-Add A Service** - This visit type is used when the patient was initially admitted by another discipline and a secondary discipline is being added for service for the patient. This visit type must include orders, goals, guidelines (care plan) and a summary of medications when nursing is the added service.

• **SC-HHA Sup No Charge** - The HHA Sup Visit No Charge is used if all nurses are doing is the Sup Visit and not providing skilled care. Supervisor approval is required for a no charge visit.

• **SV-HHA Sup Visit** - This visit type is used if nurses performed the duties necessary to qualify it as a Home Health Aide Supervisory visit and also do skilled services. The HHA Sup Visit No Charge (above) is used if all nurses are doing is the HHA Supervisory Visit without any other skilled service.
Time taken Perform Patient Care

The team also analyzed the amount of time nurses spent in home with patients. Table 2 is a breakdown of the average time spent in relation to the type of visit that the nurse was on.

Table 2: Time Spent on Patient Care vs. Type of Visit

<table>
<thead>
<tr>
<th>Visit Type</th>
<th>n</th>
<th>Average Time (min)</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revisits</td>
<td>19</td>
<td>28.84</td>
<td>10.58</td>
</tr>
<tr>
<td>Start of care</td>
<td>8</td>
<td>43.25</td>
<td>15.48</td>
</tr>
<tr>
<td>OB</td>
<td>6</td>
<td>57.17</td>
<td>16.22</td>
</tr>
<tr>
<td>Evaluation</td>
<td>2</td>
<td>59.50</td>
<td>31.82</td>
</tr>
<tr>
<td>Discharge</td>
<td>2</td>
<td>11.50</td>
<td>2.12</td>
</tr>
<tr>
<td>Assessment</td>
<td>2</td>
<td>52.00</td>
<td>1.41</td>
</tr>
<tr>
<td>Admit</td>
<td>1</td>
<td>65.00</td>
<td>N/A</td>
</tr>
<tr>
<td>Add a Service</td>
<td>1</td>
<td>75.00</td>
<td>N/A</td>
</tr>
<tr>
<td>Resumption of care</td>
<td>1</td>
<td>37.00</td>
<td>N/A</td>
</tr>
<tr>
<td>Bundle bill</td>
<td>1</td>
<td>37.00</td>
<td>N/A</td>
</tr>
<tr>
<td>Discharge w/o visit</td>
<td>1</td>
<td>59.00</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Most visits were between 25 and 40 minutes in length. This data does not take into account the type of patient the nurses may have been on a visit with. For example, the team did not account for whether the patient had an acute or chronic illness, as well as a number of other diagnoses.

Recommendations

Due to the team’s lack of nursing experience, recommendations regarding the nursing process were not made. However, the team did observe some non-patient related nursing activities and was able to comprise the following list of recommendations.

- Retrain Nurses on Oasis Documentation – The team found that 18.6% of reports are turned in past the 30-day limit, and delay cash flow and potential reimbursement. The team calculated that the cost to retrain nurses would be about $12,000. Since MVN loses $2 million dollars in a fiscal year, the cost associated with retraining can lead to significant savings. The team does not associate all of the $2 million dollar loss with documentation. However, if documentation is improved, the team believes that MVN will be able to save money and increase revenue.

- Provide all nurses with GPS systems – Since one third of the nurses’ days consisted of travel time, small reductions in this area can lead to big improvements. Although the nurses were able to get to their destinations every time, the team noticed several different methods that nurses used. These methods included: calling the patients for directions, using MapQuest, prior knowledge of a particular area, and personal GPS systems. Potential problems that were found with using non-GPS methods were that nurses ended up getting lost and the
inability to account for road factors such as construction ahead of time. With the implementation of GPS systems, nurses will be provided with up-to-date information about their destinations along with the most time efficient routes. Analyzing three potential GPS units that MVN could implement, the team found that the units would pay for themselves in 38 to 87 days, and could lead to savings of $34,000 annually.

- **Improve computer documentation user interface** - 55% of the nurses expressed that the computer user interface was poor while 45% expressed that they did not enjoy using the computers in the home. Thus, the team decided to make a few suggestions based off of the general comments and observations. One suggestion is to implement a touch screen interface for questions that have yes or no answers. The team also suggests the MVN consults the 10 Neilsen Usability Heuristics when discussing changes with the documentation software vendor. The team found that making a new system flexible to the user’s needs would make the system easier to use. For example, if a nurse could set up their interface based on the way they perform patient care, they would be more efficient in their documentation.

- **Provide Nurses with Drivers** - Travel time was found to take up 34% of a nurses’ days, or approximately 2.7 hrs of a nurse’s 8 hour shift. Also, the nurses expressed that they usually spend 4 hours doing documentation. If nurses were able to document while traveling between destinations, they would be able to greatly reduce the work they have at the end of the day. Drivers could also be utilized to perform clerical work such as making calls for supplies and medications during the time that the nurse is providing patient care. There are potential barriers that may arise from this plan, such as motion sickness, but the team believes that this is an option worth exploring because if the nurses are able to complete their documentation quicker, MVN will be able to save a lot of money.

**Action Plan**

The goal of this action plan is to provide the UMPNC and the UMS with an action plan that will help implement the recommendations provided by the team.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1: Retrain Nurses on Oasis</td>
<td>To be determined by MVN and One Month (.5 hrs per)</td>
<td>A. Oasis Documents, Fazzi National Benchmark</td>
<td>A. Nurses B. Cooperation from nurses may be hard to get due</td>
<td>Nurses will be retrained by a training staff for 30 minutes based</td>
<td></td>
</tr>
</tbody>
</table>
### Step 2: Improve computer interface

To be determined by MVN and UMPNC

**One Year**

- **A.** Current computer system, Nurses
- **B.** Computer Techs, Training Staff, New Software

**Potential barriers for this may be time and ability to improve on a system that was purchased and not designed by MVN**

- Computer Techs will come in and design a new system based off of nurses’ complaints. Random nurses will be used to test the system and then a training staff will train all the nurses.

### Step 3: Provide GPS systems

To be determined by MVN and UMPNC

**3 to 6 months**

- **A.** Blackberry software
- **B.** GPS units, Training

**Nurses may not want to feel like they’re being tracked. MVN may believe this to be too expensive or minimal issue to address.**

- MVN will decide which GPS unit to purchase based of off the GPS analysis given and provide the nurses with training on how to use the GPS units.

### Appendix A: GPS Analysis

#### GPS Savings

<table>
<thead>
<tr>
<th>Percent of day spent driving</th>
<th>34.41%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hours spent driving per nurse per day</td>
<td>2.75</td>
</tr>
<tr>
<td>Assume % time saved by using GPS</td>
<td>5%</td>
</tr>
<tr>
<td>Minutes saved per day</td>
<td>8.26</td>
</tr>
<tr>
<td>Nurse cost per hour</td>
<td>$25.05</td>
</tr>
<tr>
<td>Daily savings per nurse</td>
<td>$3.45</td>
</tr>
<tr>
<td>Savings per nurse per year</td>
<td>$861.97</td>
</tr>
<tr>
<td>FTE nurses</td>
<td>39.5</td>
</tr>
<tr>
<td>Total savings per year (once units are paid off)</td>
<td>$34,047.83</td>
</tr>
</tbody>
</table>

#### GPS Cost Analysis by Unit

<table>
<thead>
<tr>
<th>Unit</th>
<th>TomTom One 130</th>
<th>TomTom GO 740 Live</th>
<th>Garmin Nuvi 765T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost of unit</td>
<td>$129.95</td>
<td>$299.95</td>
<td>$209.99</td>
</tr>
<tr>
<td>Cost to get 60 units</td>
<td>$7,797.00</td>
<td>$17,997.00</td>
<td>$12,599.40</td>
</tr>
<tr>
<td>Days until cost regained</td>
<td>38</td>
<td>87</td>
<td>61</td>
</tr>
<tr>
<td>Features</td>
<td>3.5&quot;</td>
<td>4.3&quot;</td>
<td>4.3&quot;</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>--------</td>
<td>-------</td>
<td>-------</td>
</tr>
<tr>
<td>Traffic subscription cost (per month)</td>
<td>10</td>
<td>10</td>
<td>Free (Ad-supported)</td>
</tr>
<tr>
<td>Screen size</td>
<td>Optional</td>
<td>Optional</td>
<td>Yes</td>
</tr>
<tr>
<td>Traffic Alert</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Voice commands</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Text-to-speech (pronounces road names)</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>
### Appendix B: Driver Analysis

#### Chauffer Savings Analysis

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hours working per day</td>
<td>8</td>
</tr>
<tr>
<td>% spent driving</td>
<td>34%</td>
</tr>
<tr>
<td>Hours spent driving</td>
<td>2.75</td>
</tr>
<tr>
<td>$/hr</td>
<td>$25.05</td>
</tr>
<tr>
<td>Cost of nurse driving 2.4 hrs</td>
<td>$68.96</td>
</tr>
<tr>
<td>Hours chauffeur is needed</td>
<td>5</td>
</tr>
<tr>
<td>$/hr</td>
<td>$12.00</td>
</tr>
<tr>
<td>Cost</td>
<td>$60.00</td>
</tr>
<tr>
<td>Savings per nurse per day</td>
<td>$8.96</td>
</tr>
<tr>
<td>Savings per nurse per year</td>
<td>$2,239.41</td>
</tr>
<tr>
<td>Savings for 39.5 FTE</td>
<td>$88,456.70</td>
</tr>
</tbody>
</table>