In the study reported here, a multidimensional work-sampling technique was used to estimate the proportion of time externs spent on various activities and the amount of time pharmacy preceptors spent actively precepting students. Students were supplied with a study manual that consisted of an instruction sheet and an activity log and were given an adjustable random reminder device. When the beeper sounded, they were instructed to record their activity using a standard coding system. Students recorded 2,157 observations over the course of 226 study days. Students were alone over half the time and spent very little time in contact with either prescribers or patients. Community-based externs had approximately ten times more contact with patients than hospital-based externs. Students spent the majority of their time in the dispensing area and were actively precepted 22.9 percent of the time during the study. Multidimensional work sampling can give externship coordinators information regarding student activities and preceptorship during externship rotations. This information can be used to monitor the externship to assure correlation between expected and actual activities, compare activities between sites, and provide important information regarding preceptor time commitments.

INTRODUCTION

As pharmacy evolves from a drug product-oriented to a patient care-oriented profession, experiential training must also evolve to ensure that students develop the skills necessary to deliver pharmaceutical care. As outlined by the American Association of Colleges of Pharmacy’s Commission to Implement Change, today’s graduates need to have experience and proficiency in drug therapy management, patient counseling, and drug regimen review(1). To develop these skills, students must receive instruction and spend sufficient time engaged in these essential patient care activities. The amount of time students spend in various activities as well as the amount of active precepting during these activities is difficult to determine. Traditionally, colleges have relied upon student-generated reports, preceptor evaluations, and site visits by college personnel to determine student activities and preceptorship at experiential sites. These methods of evaluation are based upon recollection and perception and may be biased by the student-preceptor relationship, limiting their accuracy. Accurate information describing the time students spend in various activities would be useful in evaluating experiential training and could assist with quality improvement.

Since experiential instruction is frequently conducted by volunteer or contracted faculty, it is also important to know the time commitment required of preceptors. With increased economic pressures on the health care system, pharmacy owners, pharmacy directors, and healthcare administrators will, most likely, more often question the costs and benefits of these programs. As more colleges convert to the entry-level PharmD and with the probable increase in the use of contracted experiential training, methodologies to determine actual student activities during training and to document actual time spent in preceptorship are needed. Without this data, colleges may find themselves in a difficult financial bargaining position with hospitals, community pharmacies, and other appropriate sites for experiential training.

Industrial engineering and work measurement techniques have been used to analyze practicing pharmacists’ activities and the techniques and their application to various pharmacy problems have previously been described(2-8). These work-sampling techniques allow indirect measurement of the proportion of time individuals spend on various activities. Multidimensional work sampling (MDWS), a type of work measurement technique, involves the use of automated random sampling techniques (i.e., beepers) to sample work activity at random time points. Participants are asked to immediately code the activity in which they are engaged. This activity allows a reconstruction of time apportionment without the costs and time involvement associated with the use of trained observers or stop watches and eliminates observer bias. MDWS appears well suited for describing the experiential activities of pharmacy student externs which often consist of internal, problem-solving functions that cannot be easily observed or accurately reported by an outside observer. This information can be used for determining correlation of actual activities with desired activities, time requirements, and as a continuous quality improvement tool.

In the study reported here, the objectives were to examine the feasibility of using MDWS techniques to estimate: (i) the proportion of time spent in various activities by students on externships, and (ii) the proportion of time pharmacy preceptors spent actively precepting students.

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1Supported in part by a research grant to Oregon State University from the Upjohn Company, Kalamazoo MI.
METHODS

Background. The Oregon State University College of Pharmacy requires students enrolled in the baccalaureate degree program to complete a minimum of 12 weeks of experiential training prior to graduation. The requirements include four weeks each of community and hospital externships, and four weeks of a clinical clerkship. While the required clerkship is taught by full-time college faculty, the externship rotations are provided entirely by volunteer faculty. Each externship has a checklist of required competencies that are required to be demonstrated by the student and verified by the preceptor. Students receive a pass/fail grade with a subjective evaluation from the preceptor and are required to submit forms documenting four over-the-counter consultations for the community rotation and two formal in-service presentations for the hospital rotation. No other documentation of student activity is required by the College.

Study Subjects and Sites. All students assigned to externships during four months in 1992 were asked to participate in the study. The externship sites to which students were assigned included six community pharmacies and 11 hospital pharmacies. Students had the option to not participate; however, all 24 students agreed to participate, six in the pilot study and 18 in the main study. The study was exempted from review by the University’s Institutional Review board.

Study Procedures. Using the steps for conducting a self-reported work-sampling study that have been previously outlined (7-8) and a complete review of the goals, objectives, and competency statements of the externship, a list of tasks performed by pharmacy externs was established. Preliminary categories were established within each of the four dimensions (activity, contact, location, function) identified by Hadsall et al. (7).

A pilot study was conducted with six students to pretest the study protocol and evaluate the completeness of the list of categories and to determine whether all of the student’s activities could be classified within each dimension. The pilot study was designed to pretest the study protocol and validate the proposed categories.

The students were placed in three hospital and three community externship sites. The purpose of the study was explained to each student and they were assured that they would not be identified with the data and the information collected would not affect the value they would receive. Students were assured of confidentiality and were only identified by a number. They were provided with a study manual that consisted of an instruction sheet and an activity log. The students were given an adjustable random reminder device (DeVilbiss Electronics, Champaign, IL61820, model JD-4) designed to emit a beep an average of 12 times in every eight hour period at random intervals. They were instructed to store the devices at their assigned site, to turn the beeper on as soon as arriving each day at the training site and to keep the log, beeper, and a pen with them at all times, and to turn off the beeper when leaving at the end of each day. When the beeper sounded, each student was instructed to record their activity in descriptive narrative. These narratives were then evaluated by the investigators and were used to review and evaluate the completeness, exclusivity, and validity of the preliminary categories.

The Main Study. Using information gained from the pilot study, standardized definitions for all categories were developed (Appendix A) and a pretest was developed that included 15 examples of probable student externship activity and a key with correct coding of each example. The pretest included examples of activities that were difficult to code and was used to verify the students’ understanding of the coding system. Students completed the pretest prior to beginning their rotation. Students scored an average of 86 percent on the pretest. The investigators reviewed each pretest with the student and explained key coding points and each miscoded example. The investigators also visited students early in their externship rotation and spent approximately one hour simulating the beeper signal and comparing their coding of the student’s activity with the student’s own code. Each miscoded activity was discussed and an explanation of the proper coding was given, making every effort to assure that the student understood the correct code. The investigators spent varying lengths of time with students in the sites, depending upon the student’s level of understanding.

The procedure for using the adjustable random reminder devices in the main study was identical to the pilot study. The data collection instrument was developed on standard-sized paper and included entries for the subject number, date, start time, end time, and 16 rows, each having six columns for data entry. This allowed for 16 observations per form, in most cases, enough for a single shift. A classification guide was provided on each page as a reminder of the coding scheme.

The students were instructed to record the date, the exact time (to the minute) that they turned on the beeper, and their subject number on a new form at the beginning of each day. When the beeper sounded, the students were instructed to immediately stop their task (if within reason), excuse themselves if necessary, and record the exact time (to the minute), enter a one-digit code each for the location, their contact (they were allowed to code for more than one contact), function, and activity dimensions, and a code indicating whether or not they were being actively precepted. Actively precepted was defined to be in contact with, being supervised by, or actively observed by a preceptor. Students were instructed that they could quit participating if they judged that the beeper was disruptive or in any way interfering with their experience. When the student’s day was completed, they were to turn off the beeper and record the exact time, and instructed to deposit the completed form in a provided envelope.

The study protocol set no limits regarding when the observations were to be collected (e.g., specific days of the week or hours of the day), except that students were instructed not to begin the activity recording until an investigator visited the student to review and observe the coding process to minimize obtaining incomplete or incorrect data. This visit typically occurred at the end of the first week or the start of the second week of the rotation to allow students a chance to adjust, to avoid overwhelming the students, and to allow data collection to cover the majority of the experiential time. One student participated in the study during two different rotations (one hospital and one community externship) and was allowed to begin the study on Day One of the second rotation.

Data Analysis. After the data collection period was over, the data was entered into a DBase III database file and analyzed.
The overall data is presented in Table I. Students were alone half (50.6 percent) of the time and spent very little time in contact with either prescribers (0.2 percent) or patients (3.9 percent). Community-based externs had approximately ten times more contact with patients (10.1 vs. 0.9 percent) than hospital-based externs. Hospital externs were over four times more likely to be in contact with other pharmacists (10.9 vs. 2.6 percent). Students were in contact with their preceptor 16.9 percent of the time overall, with little difference between community and hospital rotations.

Overall, for both community and institutional settings, students spent the majority of their time (57.4 percent) in the dispensing area. Students were in a patient care area over six times more often in the hospital setting than in the community setting (12.3 vs. 2.2 percent)—although actual contact with patients was much less frequent—and were in the dispensing area one-half of the time (46.8 percent hospital vs. 78.6 percent community). They spent about a sixth (16.0 percent) of their time in the reference center when in the hospital rotation and only 1.3 percent of their time there when in the community setting.

Active precepting occurred 22.9 percent of the time during the study (this was differentiated from simply being in contact with the preceptor). There was little difference in time actively precepted between the hospital and the community site or, with the exception of the reference center, little difference depending on location.

Dispensing and research/learning were the most frequently reported functions, with approximately one-fourth of student time spent in each area, respectively. Students spent between 10 and 20 percent of their time in the following activities: meeting, sort/file/retrieve, read/study, evaluate/prepare/compound, write/type/operate/sign, and observe/assist.

Consulting occurred almost twice as often in the community site than in the hospital (12.6 vs. 7.2 percent). Hospital-based externs spent over 45 minutes per day in transit/waiting, while community-based externs spent approximately 15 minutes per day. Students in the hospital rotation spent over an hour per day observing/assisting, over twice the amount spent by students in the community rotation.

The activities of hospital externs in the patient care area were most often associated with information gathering and approximately one-fourth of their time was involved with teaching or consulting patients. Almost one-half of the small amount of time that community externs spent in the patient area involved patient consulting.

DISCUSSION
MDWS can give externship and experiential coordinators information regarding student activities during externship rotations. This information can be used to monitor the externship program to assure correlation between expected activities and actual activities, compare activities between sites, and provide important information regarding preceptor time commitments.

A number of observations about the Oregon State program were of interest to the investigators. Overall, students spent the majority of their time (57.4 percent) in the dispensing area. This is consistent with the objectives of the externship program. The Oregon Board of Pharmacy grants internship for the externship program on an hour-for-hour basis and grants this, in part, with the understanding that students will be learning the dispensing functions of pharmacy.

Students were actively being precepted 22.9 percent of the time. This represents approximately 117 minutes per day.
when preceptors are actively precepting, an investment of approximately $62 per day ($32/hour). Over the course of the four-week program, preceptors are investing approximately $1,245 per extern. Preceptors, when determining the value of continuing with the program, would likely need to see a return of at least some portion of the $1,245 of “investment” per student. If the extern were paid the average wage of an intern and required to do the work of an intern, the returned value of the extern to the preceptor would be approximately $1,600 ($10/hr x 160 hrs). With the requirement by the College for the externs to be in “learn- ing” situations only and not placed in “menial work” situations such as unloading drug deliveries, it would appear that the value to the preceptor is appropriately balanced. In addition, preceptors may receive many personal and professional rewards that are not monetary and may be more important to preceptors than payment.

Students had virtually no contact with prescribers during the externship. One goal of the externship is to socialize the students to the environment of prescribers and learn how to influence rational prescribing. This raises concern that students may not be gaining appropriate opportunities for communications and interactions with prescribers during these rotations. This finding is attenuated by the fact that Oregon State’s professional program also includes a clinical clerkship experience as a requirement, and it is during this rotation that patient and prescriber contact is emphasized; however, changes in the externship rotations may need to take place if students are to learn the skills necessary to provide pharmaceutical care.

Students had more patient contact experiences in the community setting. This is in contrast to the notion that hospital rotations are more “patient-oriented” and suggests that the community setting is an important training setting for obtaining patient-related competencies. Part of this additional contact in the community may have been imposed on students, as they had to complete four over-the-counter consultations as a part of the requirement for completing the externship rotations.

Table I. Proportion of observations in each dimension

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Overall</th>
<th>Hospital</th>
<th>Community</th>
<th>Percent of time actively precepted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dispensing Area</td>
<td>57.4 (24.3)</td>
<td>46.8 (20.6)</td>
<td>78.6 (16.5)</td>
<td>26.2</td>
</tr>
<tr>
<td>Patient Area</td>
<td>8.9 (8.2)</td>
<td>12.3 (8.0)</td>
<td>2.2 (2.8)</td>
<td>26.1</td>
</tr>
<tr>
<td>Office</td>
<td>5.6 (8.4)</td>
<td>6.1 (9.7)</td>
<td>4.6 (5.6)</td>
<td>32.8</td>
</tr>
<tr>
<td>Classroom</td>
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<td>3.2 (3.3)</td>
<td>4.0 (6.9)</td>
<td>25.7</td>
</tr>
<tr>
<td>Reference Center</td>
<td>11.1 (11.5)</td>
<td>16.0 (11.1)</td>
<td>1.3 (2.0)</td>
<td>2.1</td>
</tr>
<tr>
<td>Other</td>
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<td>15.5 (9.2)</td>
<td>9.3 (9.6)</td>
<td>17.5</td>
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<td>Contact</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Self</td>
<td>50.6 (14.4)</td>
<td>49.4 (14.5)</td>
<td>53.0 (15.1)</td>
<td>4.8</td>
</tr>
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<td>Preceptor</td>
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<td>18.1 (13.2)</td>
<td>14.5 (7.4)</td>
<td>94.0</td>
</tr>
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<td>6.5 (7.1)</td>
<td>11.2 (9.4)</td>
<td>11.0</td>
</tr>
<tr>
<td>Patient</td>
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<td>0.9 (1.7)</td>
<td>10.1 (5.8)</td>
<td>20.4</td>
</tr>
<tr>
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<td>0.3 (0.5)</td>
<td>0.1 (0.2)</td>
<td>0.0</td>
</tr>
<tr>
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<td>4.1 (3.5)</td>
<td>4.6 (4.8)</td>
<td>11.2</td>
</tr>
<tr>
<td>Pharmacist</td>
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<td>10.9 (10.3)</td>
<td>2.6 (3.0)</td>
<td>15.3</td>
</tr>
<tr>
<td>Support Staff</td>
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<td>7.9 (11.2)</td>
<td>1.6 (2.1)</td>
<td>12.8</td>
</tr>
<tr>
<td>Student</td>
<td>0.4 (1.0)</td>
<td>0.6 (1.1)</td>
<td>0.0 (0.0)</td>
<td>33.3</td>
</tr>
<tr>
<td>Other</td>
<td>1.6 (2.9)</td>
<td>1.3 (2.3)</td>
<td>2.3 (4.0)</td>
<td>0.0</td>
</tr>
<tr>
<td>Function</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patient Record</td>
<td>6.3 (6.2)</td>
<td>6.8 (7.2)</td>
<td>5.3 (3.9)</td>
<td>26.0</td>
</tr>
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<td>Patient History/ Assessment</td>
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<td>2.8 (4.4)</td>
<td>7.3 (4.7)</td>
<td>41.2</td>
</tr>
<tr>
<td>Dispensing</td>
<td>27.2 (14.8)</td>
<td>24.1 (14.4)</td>
<td>33.5 (14.7)</td>
<td>23.6</td>
</tr>
<tr>
<td>Billing</td>
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<td>1.1 (2.5)</td>
<td>2.9 (2.7)</td>
<td>27.8</td>
</tr>
<tr>
<td>Consulting</td>
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<td>7.2 (8.0)</td>
<td>12.6 (9.1)</td>
<td>44.0</td>
</tr>
<tr>
<td>Teaching</td>
<td>1.3 (2.6)</td>
<td>1.9 (3.1)</td>
<td>0.3 (0.4)</td>
<td>64.5</td>
</tr>
<tr>
<td>Research/Learning</td>
<td>26.8 (15.6)</td>
<td>30.7 (15.1)</td>
<td>19.1 (14.5)</td>
<td>13.3</td>
</tr>
<tr>
<td>Administration</td>
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<td>1.5 (2.9)</td>
<td>2.7 (6.0)</td>
<td>31.8</td>
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<tr>
<td>Personal</td>
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<td>10.1 (5.7)</td>
<td>3.7 (2.8)</td>
<td>24.2</td>
</tr>
<tr>
<td>Other</td>
<td>13.4 (9.6)</td>
<td>13.8 (9.3)</td>
<td>12.6 (10.9)</td>
<td>8.3</td>
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<tr>
<td>Activity</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Telephone</td>
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<td>1.2 (2.2)</td>
<td>5.3 (3.1)</td>
<td>11.8</td>
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<td>18.4 (9.7)</td>
<td>53.1</td>
</tr>
<tr>
<td>Sort/File/Retrieve</td>
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<td>9.5 (9.9)</td>
<td>20.1 (18.5)</td>
<td>10.4</td>
</tr>
<tr>
<td>Read/Study</td>
<td>14.5 (8.7)</td>
<td>15.0 (8.6)</td>
<td>13.7 (9.7)</td>
<td>6.6</td>
</tr>
<tr>
<td>Evaluate/Prepare/Compound</td>
<td>18.0 (9.2)</td>
<td>18.7 (10.2)</td>
<td>16.7 (7.3)</td>
<td>23.1</td>
</tr>
<tr>
<td>Write/Type/Operate/Sign</td>
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<td>11.1 (7.9)</td>
<td>7.8 (9.4)</td>
<td>13.5</td>
</tr>
<tr>
<td>Observe/Assist</td>
<td>10.1 (7.7)</td>
<td>12.3 (7.7)</td>
<td>5.5 (6.1)</td>
<td>38.4</td>
</tr>
<tr>
<td>Transito/Wait</td>
<td>7.5 (6.7)</td>
<td>9.5 (6.9)</td>
<td>3.5 (4.5)</td>
<td>16.7</td>
</tr>
<tr>
<td>Other</td>
<td>9.4 (7.3)</td>
<td>9.8 (5.7)</td>
<td>8.3 (10.5)</td>
<td>18.2</td>
</tr>
</tbody>
</table>

*Percentages may not add to 100 due to rounding.*
Completing the community portion of the externship. In addition, some of the contact may have been unrelated to pharmaceutical care and may have been a function of non-medication related transactions, i.e., insurance billing, cash register transactions, etc., which take place in the community pharmacy setting more frequently than in the hospital pharmacy setting.

Considerably more time was spent by hospital externs in doing research in a reference center or library without being actively precepted. Students are assigned in-service projects that are a part of the hospital rotation and they need to spend time researching the topics. It may also be a way for the preceptor to get the student “out of the way” when the pharmacy becomes too busy. This raises an important question about whether the “hands-on” in-service project is an appropriate expenditure of the students’ time or if in-service projects should be completed prior to experiential training. Students also spend almost an hour per day in transit or waiting in the hospital, a considerable amount of time for this non-productive activity. This may be unavoidable because hospitals are generally large buildings requiring transit time to move from one area to the other. Additionally, students report spending significant time in reference centers which may be remote and require transit time.

The potential for MDWS to be used as a tool for continuous quality improvement in experiential training programs appears excellent. Changes in experiential sites, goals and objectives, preceptors, curriculum, etc., could be examined against historical controls for changes in student activities. Additionally, MDWS provides information that can identify significant problems with individual programs or specific sites. For example, excessive amounts of time spent in a reference center in place of the patient area or dispensing area might indicate too many written assignments and too little actual experience time. Externship rotations that result in three or four hours of active precepting during the entire rotation should alert externship coordinators to a problem. In fact, the externship site that was assigned to the student who reported being precepted 2.2 percent of the time was dropped from the program, based upon information gathered from other student evaluation forms. The use of the MDWS could have alerted the externship coordinator about a potential problem earlier and prevented subsequent rotations without changes being implemented.

Trends in pharmacy practice and pharmacy education can also be monitored using MDWS. With changes in professional practice and the implementation of pharmaceutical care, students today must spend more time in direct patient contact to learn patient counseling skills. The feedback to preceptors of the data gathered from this technique could be used to graphically illustrate areas where students are spending either too much or too little time. This data could serve as the focus for educational interventions directed toward preceptors and could result in improved student training.

MDWS can provide experiential coordinators with information about the level of preceptorship present in the program. This data could be valuable in negotiations of contracted rotations, in determining needed preceptorship development training, and in identifying potential problem rotations.

Limitations. There were several limitations to interpreting our study and in the use of MDWS to monitor experiential training. These include the small number of externship rotations studied, the exclusion of the first week of externship from data gathering, and the possibility of coding errors.

The number of externship sites used in the study was small, limiting the widespread usefulness of the data. The six community sites and 11 hospital sites represent the most active and highly used training sites for Oregon State University and are representative of the College’s program. The data gathered from these sites is, therefore, very useful to the College.

Due to logistics and practical issues, it was not possible to collect data during the students’ first week of externship. This may have had an influence on the overall results and, in particular, on the proportion of time reportedly spent by preceptors in actively precepting. An argument could be made that the preceptor spends more time actively precepting students during the first week of a rotation than at any other time.

It appears from Figure 1 that the students often rounded the minutes after the hour to the nearest five minutes, and the peaks at one-half hour and at 15 and 45 minutes after the hour suggest a delay in marking the forms. While of concern to the investigators, these results were probably due to the perceived lack of importance of the exact time by the students or the students simply tended to delay marking the forms due to a busy work environment or other reasons. Although the investigators stressed the importance of accuracy in all phases of the study, it was likely apparent to the students that the information sought by the investigators was the students’ activities. The students’ primary concern during the rotation was completion of the externship program and not the completion of the study.

The use of MDWS is a labor-intensive process, both from an investigator’s and a participant’s perspective. The large time commitment would have to be considered in decisions to use the technique routinely. When deciding whether to use MDWS, consideration should be given to the amount of set-up time, the amount of time required to instruct students in the use of the beeper and the study forms, and the amount of time required to enter and analyze the data. Once set up, however, MDWS appears to the investigators to be a cost-effective technique for externship monitoring. New technologies allowing students to enter data at the time of the beep could be used to minimize data entry time, provide more accurate and timely coding, and permit continued monitoring of the externship activities. Newer technologies could also allow the use of smaller, less obtrusive beeper devices that would allow students to record their activities on a small key pad located on the beeper and to download the data into a database easily. This technology would permit accurate tracking of student activities and experiences and could serve as documentation over the students’ program.

The data presented in this study is unique to Oregon State University and is not intended to be generalizable to other externship rotations. In addition, measuring the time students spend in activities reveals nothing about the quality of the experience or the competencies obtained by the students. The use of MDWS could, however, provide important information to supplement and help identify reasons for student deficiencies as identified by competency or outcome measures.
CONCLUSION

The use of MDWS allowed us to estimate the proportion of time that externs were spending in various activities and allowed us to estimate the amount of time that preceptors were actively precepting. Once the system is set up and operating, MDWS would appear to have potential as a continuous quality improvement tool. The information gained from the system was found to be useful in program evaluation.


References


APPENDIX A. DEFINITIONS

I. TIME: record the exact hour & minute of the beep.

II. LOCATION: where you are at the beep.
1. DISPENSING AREA: any pharmacy area where dispensing, compounding, packaging or stocking is done.
2. PATIENT AREA: a patient care or contact area, where you meet patients formally or informally; aisles in store.
3. OFFICE: admin, or private office.
4. CLASSROOM: any classroom or conference area where group instruction is the main activity.
5. REFERENCE CENTER: library, drug information center, reference area of pharmacy, files.
6. OTHER: undefined locations.

III. CONTACT: main person you are working with.
1. SELF: working alone under supervision or not.
2. PRECEPTOR: working with your preceptor or designee.
3. COMPUTER: working at a computer.
4. PATIENT: working with a patient.
5. PRESCRIBER: physician, P.A., nurse practitioner, medical student, etc.
6. ALLIED HEALTH: nurse, therapist, aid, manager, etc.
7. PHARMACIST: co-worker, staff, peer.
8. SUPPORT STAFF: secretary, office, technician, clerk.
9. STUDENT: fellow student.
10. OTHER: undefined.

IV. FUNCTION: the purpose of your actions.
1. PATIENT RECORD: accessing, using a patient chart or profile.
2. PATIENT HISTORY: gathering information from a patient or their agent.
3. DISPENSING: functions related to stocking, compounding, packaging, labeling, dispensing of medicines.
4. BILLING: charging forms, register.
5. CONSULTING: 1:1 meetings with workers or patient related to practice of pharmacy, drug information, education.
6. TEACHING: group learning/teaching activity.
7. RESEARCH/LEARNING: study or preparation related to other functions.
8. ADMINISTRATION: managing, planning, supervising, or directing others.
9. PERSONAL: break, restroom, lunch, conversation, not work-related.
10. OTHER: undefined.

V. ACTIVITY: aspect of function or task, action.
1. TELEPHONE: phone calling, answering.
2. MEETING: with 1 or more persons having a discussion, teaching, etc.
3. SORT/RETRIEVE/FILE: searching for information or data or putting it away, getting supplies or drugs, accessing a record.
4. READ/STUDY: reading a record, label or book, record, or report.
5. EVALUATE/PREPARE: analysis or thinking, planning, interpreting, make or compound.
6. WRITE/SIGN: entering information, typing, writing a note, signing.
7. OBSERVE: watching, assisting.
8. TRANSIT/WAIT: walking to or from, wait for elevator, waiting room, hold related to work.
9. OTHER: undefined, personal, etc.

VI. PRECEPTOR: are you in active contact with your preceptor, being supervised or actively observed at this moment?
1. YES
2. NO