Evaluation of a Clinical Outcomes Assessment Tool in a U.S. Dental School


Abstract: Quality assurance (QA) programs in dental schools have a component of their program devoted to treatment outcomes. To this end, our institution has implemented TOUCH (Treatment Outcomes Unacceptable for Clinical Health) seminars and Unusual Occurrence Reports (UORs). The seminars allow a faculty member to present a case to faculty and students with feedback from the audience on how the case was managed. The UORs track clinical incidents outside the range of normal. Participation in both of these QA measures has been less than expected. The goal of the current study was to discover the reasons for participation and lack of participation. A twelve-item survey was completed by seventy-one clinical faculty members and analyzed for trends. Faculty report only 28.3 percent of the unacceptable outcome cases they know about. The two most common reasons given for not reporting an unusual occurrence were that it would help the institution reduce similar incidents and it would provide an opportunity to share learning experiences. The most common reason given for not reporting an unusual occurrence was not remembering to do so. Faculty members were most willing to present a TOUCH seminar if guaranteed that no negative repercussions would result. Suggestions for increasing participation in both programs include emphasizing their value, modifying the seminar format, providing more reminders, and reassuring against repercussions.

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Publication of the Institute of Medicine's report on the quality of health care in America has focused the attention of providers on accurate reporting, aggregation and analysis of data, and systemic changes intended to reduce errors. Historically, healthcare has looked upon errors as uncommon events, completely unacceptable as outcomes, and having inherent cultural barriers to their disclosure.

As a remedy, Chambers describes methods for root cause analysis and risk management in the dental context. There is also growing recognition that medical error management takes place in a social context and that individual differences exist in what is identified as an unusual event and what meanings may be attached to events. A "no blame" culture is strongly and consistently recommended as part of error identification, analysis, and reduction programs.

Quality assurance (QA) and risk management play a significant role in the management of dental clinics in the United States. Dental schools have, as one of their accreditation standards, a subsection focused on the quality assurance program in each dental school. The QA program in some dental schools and many hospitals has a component devoted to the close examination of treatment outcomes. These are often known as Morbidity and Mortality (M&M) conferences in the hospital setting. They are important in meeting the dual purposes of teaching hospitals: patient care and resident education. During M&M conferences, a clinician presents a case that had a less than ideal outcome. Colleagues in attendance then provide critical feedback that may include alternative methods or techniques that might prove more successful the next time such a case presents itself. The intent is that everyone in attendance will learn from the experience of a colleague, so they all can provide better patient care. As Andrews et al. have discovered, M&M conferences can be a rich source of data on the nature of adverse events, allowing for extensive, detailed dialogue about inappropriate care. They can act as a starting point for proactive error prevention.

However, many authors indicate that M&M conferences, or their facsimiles, do not function effectively. This is partly because they are often conducted as reactive responses to difficult and sensitive clinical situations. Ideally, quality assurance activities should create an environment of collegiality, investigation, analysis, and support of the individual(s) involved. Unfortunately, these M&M
conferences create an atmosphere of blame centered on the healthcare provider with a vague evaluation of the circumstances surrounding the incident, which results in outcomes fraught with frustration, embarrassment, and fear.8,12,13

For the past five years, the University of the Pacific School of Dentistry has experimented with appropriate venues and styles in which to present M&M conferences. The goal was to determine ways to look at mistakes without placing blame on individuals. While close examination of these cases was a goal, we felt a more positive, systems-focused approach was appropriate. Three years ago, the Clinical Quality Assurance Committee (CQA) instituted TOUCH (Treatment Outcomes Unacceptable for Clinical Health) seminars. TOUCH seminars are given at noontime once a quarter, and attendees are encouraged to bring a brown bag lunch if desired. The seminars are conducted in a lecture format. Faculty, composed of two-thirds part-time and one-third full-time, have been encouraged to attend these seminars with continuing education credit as an incentive. Students are required to attend at least one of these sessions per academic year.

Another QA measure found in many dental schools is Unusual Occurrence Reports (UOR). These are descriptions of clinical incidents related to the delivery of oral healthcare considered to be outside the range of normal.11 Examples include swallowed crowns, treatment of the wrong tooth, and interpersonal conflicts in a clinical setting. Faculty members are provided with a more comprehensive list of reportable incidents (Exhibit 1). UORs are completed by the individual involved in any given incident and returned directly to one person responsible for collection and tracking. This individual ensures that only trends are reported to the CQA for appropriate distribution and action. UORs are integral in tracking clinical incidents and discovering trends that require further evaluation.19,21 While the information contained in any given UOR is kept confidential, the trends they suggest can be sources for identifying appropriate cases for future M&M seminars.

Two findings have been identified at our institution that relate to participation in TOUCH seminars. First, attendance by clinical faculty has been disappointing even with the provision of CE units. The second finding is that it has become increasingly more difficult to find willing speakers with appropriate cases after the original pool of voluntary presenters was exhausted. The declining number of participants and presenters occurred despite repeated attempts to engage faculty in this program through memos, emails, and personal contacts. No clear-cut reasons were evident for faculty hesitancy to participate.

The “root cause” of selective participation by faculty members in the TOUCH program was explored through a survey. It was hoped that by identifying obstacles to full faculty participation, these barriers could be reduced or eliminated, thereby extending the positive effects of clinical outcomes assessment to more individuals involved in direct patient care. Medical reporting systems have suggested

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### Exhibit 1. Examples of reportable unusual occurrences related to dental procedures

- Allergic reaction
- Aspiration or swallowed substance
- Broken instrument in root canal
- Burns
- Cardiac arrest or arrhythmia
- Damage to patient-owned appliance
- Excessive pain, bleeding, or swelling during or following treatment
- Fractured mandible
- Fractured or damaged non-treated tooth
- Laceration requiring sutures
- Lack of informed consent—patient perceived
- Medical complications resulting from dental treatment
- Oral-antral fistula-iatrogenic
- Paresthesia
- Severed blood vessel
- Severed nerve
- Syncope and vertigo
- Unusual drug reaction
- Wrong part anesthetized
- Wrong post-operative instructions
- Wrong prescription: drug, dose, instructions, etc.
- Wrong tooth treated or extracted
- Physical or verbal altercation
that the error rate could decrease and patient care could improve4 by increasing attendance at outcomes review seminars such as TOUCH and fostering an atmosphere of blame-free investigation of system errors instead of human errors.22

Methods

A two-page, twelve-item survey instrument (Exhibit 2) was developed to assess the following areas:
- Knowledge of cases with unexpected or undesirable outcomes
- Perceived incentives and disincentives for reporting
- Willingness to report various hypothetical clinical occurrences
- Perceived frequency of occurrences in the school
- Experience with previous TOUCH seminars
- Perceived incentives and disincentives for presenting cases at TOUCH seminars

The questions on the survey were based on feedback obtained from faculty members, and the survey was reviewed by a small sampling of faculty as well. The survey was then distributed to all full-time and part-time clinical faculty members at our school. Returned surveys were tracked using code numbers to allow identification of nonrespondents. The survey was distributed to nonresponding individuals approximately one month after the first administration. This entire process was tracked by one administrative assistant who did not divulge information about the identity of the respondents to the authors or to any other individuals at the school.

Results

One hundred sixty-five surveys were distributed as described above, and seventy-one were returned, representing a return rate of 43 percent. Not all respondents answered the twelve questions completely. The actual number of answers to a specific question is indicated in our discussion and on the figures.

Approximately half (48 percent) of the seventy-one respondents were aware of an actual or case in the clinic over the past year that had unexpected or undesirable outcomes. On average, these respondents were aware of six cases per year in the dental school and reported being directly involved in 4.4. When asked about how many of these cases they reported, the response was an average of 1.7 cases per year. This represents reporting of 28.3 percent of cases the responding faculty members were aware of and 38.6 percent of cases where faculty were directly involved.

The next area of inquiry dealt with the incentives and disincentives faculty members perceived for reporting cases with unusual outcomes. There were 132 responses to the check-off question about the top two incentives for reporting an unusual occurrence (Figure 1). Sixty responses (45.5 percent) indicated that reporting would help the school reduce the occurrence of these events, and fifty-nine (44.7 percent) indicated that it would provide an opportunity to share learning experiences. The other responses included someone telling them (2.3 percent), it is easy to do (1.5 percent), and other (6.0 percent). Other incentives for reporting unusual occurrences included:
- Patient’s concern about cost of replacement and proper documentation.
- To prevent unusual occurrences in the future from a patient’s point of view.
- Prevention/supervision.
- It helps for the malpractice carrier to know ASAP.
- Legal documentation.
- It’s the proper thing to do.
- It is my responsibility as a faculty member.
- These events are not deliberate.
- Make it easy.
- Letting administration know of event.
- Helps school’s defense with more documentation.
- Allows the patient to receive proper treatment.
- Show the patient that the faculty is on top of the situation.

There were fewer responses (seventy-six) to the question about disincentives for reporting an unusual outcome but a broader distribution of reasons (Figure 2). Twenty-nine of the forty-seven respondents to this question provided more than one disincentive. The top reason for not reporting was “I have trouble remembering to do it at the time of the occurrence” at 25 percent, followed by “not knowing what the information will be used for” at 19.8 percent. No one thought that it was “not their job” to report unusual outcomes.

The next question addressed the willingness of faculty members to report hypothetical cases in the clinic through the UOR program. Faculty were given different situations and requested to respond on a scale of 1 to 5, with 1 being very willing to report and
Exhibit 2. Survey instrument

1. Are you aware of cases in the past year that had unexpected or undesirable outcomes? 
   Yes ☐ No ☐ (If no, skip to item #5)

2. How many do you know about? ______________

3. How many were you directly involved in? ______________

4. How many did you report as a UOR? ______________

5. Check off your top two incentives for reporting an unusual outcome:
   ☐ It will help the school reduce the occurrence of these events.
   ☐ It provides an opportunity to share learning experiences.
   ☐ Someone told me to do it.
   ☐ It is easy to do.
   ☐ Other ____________________________

6. Check off your top two disincentives for deciding not to report an unusual outcome.
   ☐ The information might be used against me.
   ☐ It takes too long.
   ☐ I don’t know where the reporting forms are.
   ☐ I don’t know what the information will be used for.
   ☐ I have trouble remembering to do it at the time of the occurrence.
   ☐ It is not a beneficial use of my time.
   ☐ It’s not my job.
   ☐ Other ____________________________

7. Assuming you hear about or are directly involved in the management of the patient or student involved in an unusual occurrence, categorize your willingness to report any of these occurrences.

   A. Open margin on a crown cemented here at UOP less than six months ago.
      1 Very willing  2 3 4 5 Not willing

   B. Patient swallowed a crown during cementation appointment.
      1 Very willing  2 3 4 5 Not willing

   C. Patient experienced chest pain during an appointment.
      1 Very willing  2 3 4 5 Not willing

   D. Student and patient had a verbal altercation in the clinic.
      1 Very willing  2 3 4 5 Not willing

   E. The wrong tooth was treated.
      1 Very willing  2 3 4 5 Not willing

   F. The furcation area of tooth #3 was perforated during endodontic access.
      1 Very willing  2 3 4 5 Not willing
8. Estimate the total number of cases within the dental school that you think are reported each year.

9. Have you ever attended a TOUCH seminar? (If not, skip to item #12)
   Yes ☐ No ☐

10. If so, are the TOUCH seminars the best forum in which to present cases?
    Yes ☐ No ☐

11. If not, how else might these cases be discussed?

12. Categorize the following according to the likelihood that they will increase your willingness to present a TOUCH seminar.

   A. The dean is aware of and acknowledges my participation.
      
      | Very willing | 1 | 2 | 3 | 4 | 5 |
      | Not willing  |   |   |   |   |   |

   B. TOUCH presentations can be counted as scholarly activity on my CV.
      
      | Very willing | 1 | 2 | 3 | 4 | 5 |
      | Not willing  |   |   |   |   |   |

   C. The faculty responsible for the case will be guaranteed anonymity.
      
      | Very willing | 1 | 2 | 3 | 4 | 5 |
      | Not willing  |   |   |   |   |   |

   D. I will be guaranteed no negative repercussions for reporting such a case.
      
      | Very willing | 1 | 2 | 3 | 4 | 5 |
      | Not willing  |   |   |   |   |   |

   E. I will be given an outline of what should be presented.
      
      | Very willing | 1 | 2 | 3 | 4 | 5 |
      | Not willing  |   |   |   |   |   |

   F. I will be given complete control over what is presented and how it is presented.
      
      | Very willing | 1 | 2 | 3 | 4 | 5 |
      | Not willing  |   |   |   |   |   |

   G. TOUCH seminars will be presented only at lunchtime during each quarter when both faculty and students can attend.
      
      | Very willing | 1 | 2 | 3 | 4 | 5 |
      | Not willing  |   |   |   |   |   |

   H. TOUCH seminars will only be presented at Faculty Development Day when just faculty can attend.
      
      | Very willing | 1 | 2 | 3 | 4 | 5 |
      | Not willing  |   |   |   |   |   |

Please make any other comments that you think we would find useful in the space below:

Thank you for completing this survey.
Figure 1. Top incentives for reporting unusual outcomes (N=132)

Figure 2. Top disincentives for deciding not to report an unusual outcome (N=76)

5 being not willing at all. The number of responses varied for each question; these numbers are presented in Figure 3. Faculty members were most willing to report a swallowed crown or the wrong tooth being treated (92.9 percent being very willing). The faculty members were least willing to report the need to redo a crown cemented less than six months ago and a verbal altercation between a student and patient (only 64.2 percent were very willing to report).

The second half of the survey dealt with the TOUCH seminars. All seventy-one respondents answered the questions about these seminars. Fifty-two percent responded affirmatively that they had attended a TOUCH seminar, and 55 percent thought that the TOUCH seminar was the best forum in which to present these cases. Ninety-one percent of respondents who actually attended TOUCH seminars thought that they were the best way to discuss unusual outcomes. The faculty provided suggestions for other ways to present information about unusual occurrences. These suggestions included distributing the information electronically or by mail, having the involved students and faculties review the cases, and providing a higher frequency of TOUCH seminars.

The final question presented a series of situations that might increase faculty members’ willingness to present a TOUCH seminar. Again there was a list of options, and the responses ranged from very willing (1) to not willing (5) to present TOUCH seminars. The total responses to each individual section are listed in Figure 4. The respondents were most willing to present a TOUCH seminar if they were guaranteed no negative repercussions for reporting a case, with thirty (46.2 percent) being very willing and eighteen (27.7 percent) being willing. Faculty members were least willing to present TOUCH seminars if they were presented only at Faculty Development Day with no students present. Also, acknowledgment by the dean was not an incentive to present a TOUCH seminar.

Discussion

The relatively poor survey response rate, despite multiple attempts to collect the information, may indicate apathy among faculty members regarding this topic. Wu et al. also suggests that nonrespondents may feel more defensive about reporting incidents than do respondents. The low response rate and the underreporting of incidents by respondents who had awareness or personal involvement in these incidents could mean that faculty are hesitant to involve themselves in the reporting of unusual occurrences, or that they are selective when they do report
Figure 3. Willingness of faculty to report hypothetical incidents based on hearing of incident or being directly involved

Figure 4. Willingness of faculty to participate in a TOUCH seminar if certain conditions exist

less than optimal events, or both. This selection process is also described in medicine and accounts for some of the continuing problems with errors in that profession. Our dental school will continue to consider ways to increase participation in our reporting system through stressing honesty and openness, sending thank-you notes to those who participate, and orienting new faculty based on findings from TOUCH seminars.

Respondents grossly underestimated the number of reportable occurrences in the school in a one-year period. The faculty estimate was approximately thirty-seven incidents per year, while there is an actual annual range over the last five years of 200 to
250 reported occurrences per year, based on clinic records. Based on faculty reporting rates, as indicated by this study, a significant number of occurrences probably go unreported; thus the actual number of occurrences over the course of a year may be much higher than those currently documented. This highlights the magnitude of this issue, a finding also found in hospital settings. 

The survey results indicate that respondents overwhelmingly felt that reporting UORs could help the school prevent recurrences and could provide an opportunity to share learning experiences. This suggests that the faculty perceive value in reporting unusual outcomes both for the school and for themselves, but that they wish to act as the controlling agent in determining what will be reported. Chambers argues that such selective control is part of the temperament of the profession. It will be important to use this perceived value to encourage faculty members to participate in the UOR program.

Overall, a high percentage of respondents were "very willing" or "willing" to report hypothetical situations. On closer examination, distinctions can be made. Proposed situations involving a swallowed crown and treatment of the incorrect tooth elicited a willingness to report from almost all respondents. A significant number of faculty members were less willing to report situations involving interpersonal conflict. It may be that faculty members find it more personally difficult to manage and discuss interpersonal problems than technical dental problems. Perhaps the protocol for an inappropriate interpersonal interaction is less well defined than the protocol for managing a swallowed crown. Protocols for interpersonal interactions should be disseminated to the faculty to increase their comfort in managing and reporting UORs in this category.

It would seem that a program such as the TOUCH seminars could be successful if faculty could be educated about the process, disincentives for participation could be removed, and clear, positive incentives could be provided and promoted. Based on the elicited information that respondents found value in examining unusual outcomes, it appears that their interest would lead them to a seminar, unless some form of selective control was operational. Of those who had attended a seminar, the majority felt that the TOUCH seminar format was an appropriate forum in which UOR information could be presented and disseminated. Those who had not attended felt that other forums were more appropriate, so experi-menting with different forums might lead to better faculty participation. An example of such a forum could include evening presentations with CE credits provided to attendees.

The social psychologist Kurt Lewin suggested that organizational change is best managed by first identifying the forces operating to keep the level of performance at its current level. Both incentives that would promote more desirable performance and barriers that would prevent more desirable performance should be identified. Barriers are critical to this analysis because it is often easier to remove barriers than it is to add incentives. Removing barriers results in more predictable behavior change than does adding incentives. The current research identified several barriers that are candidates for manipulation to increase participation in occurrence reporting and TOUCH seminars. These barrier removal strategies include management of concerns about patient reactions, providing clear expectations about reporting interpersonal conflict, legal assurances, reducing paperwork, and providing a clear format for TOUCH presentations.

Lewin's theory of organizational change also addresses the time sequence of innovation. The three phases of "unfreeze," "reposition," and "refreeze" are usually observed. Improvements are not begun with a clean slate. It is necessary to understand why the current level of performance is in place and why. This is the reason why the current survey was undertaken. Some of the steps that could be implemented in the "unfreezing" process are described below.

Optimization of faculty participation in TOUCH seminars should include focusing on the major incentives, which are the teaching and learning opportunities as well as prevention benefits for the school. Responding faculty seemed to embrace these concepts, so teaching and prevention should always be included in promoting the TOUCH seminars. The presenters should also focus on these two incentives when they discuss their cases. Furthermore, the perceived disincentives should be minimized. Through Lewin's studies of force field analysis, we know that it is easier to reduce resistance or remove disincentives to obtain a desired change in behavior. This can be accomplished through periodic reminders, training on the reporting procedure, and clear communication regarding the use of this information. There should never be any hint of negative repercussion for presenting a TOUCH seminar, a notion that is well supported in medicine.
Presenters might want to remind the audience of this at every seminar.

For TOUCH seminars to be successful, there must be adequate attendance as well as participation as presenters. To encourage faculty to present cases, they should be guaranteed that there would be no negative repercussions for participation in the seminar. Guidance in preparing and presenting cases would also be helpful.

Conclusions

If faculty members can be encouraged to fully participate in the effective examination and evaluation of unacceptable clinical outcomes, the potential benefits to the faculty, patients, and the school can be significant. Educating faculty members on the true extent of the problem, enhancing incentives, and addressing concerns are integral to reaching this goal.

TOUCH seminars provide a vehicle by which faculty can be sensitized to these occurrences and educated about both the actual events and the process and importance of reporting. Those faculty who have attended a TOUCH seminar found them to be an appropriate forum for dissemination and examination of this information. Further optimization of these seminars, based on faculty input, may improve participation and lead to increased benefit for all parties involved.

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