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Rules Outside The Rules for Administration of Medication: A Study in New South Wales, Australia

Helen M. Baker

Purpose: To improve understanding of how nurses define or redefine medication error.

Design: Qualitative descriptive.

Methods: This 18-week ethnomethodological study in one hospital used participant observation, documentary analysis, and validation criteria. Ethnomethodology is useful for making clearer the every-day, taken-for-granted understandings and practices of people as they make sense of their world. It hinges on the use of tacitly held knowledge in practical situations.

Findings: Nurses adopted practices and embodied logic to accomplish tasks. They created criteria to decide when incidents were "real errors" and used institutional rules to create order.

Conclusions: The findings provide a body of tacitly held knowledge about medication error that is shared among clinical nurses and redefines medication error using six criteria. The study calls into question the way institutions seek to identify, document, and reduce medication errors by nurses and the validity of nursing research based on reported error rates.

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[Keywords: medication errors; professional issues; socialization]

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Methodology

Ethnomethodology was developed from phenomenological beginnings. Schutz (1978), a student of Husserl, writes about tacitly held knowledge that all human beings use to make their way in the world. Schutz suggests that this body of knowledge is a subject worthy of study. After reading Sudnow (1967) and particularly Weider (1976) I suspected that nurses may operate on a set of shared rules about the administration of medication which they hold tacitly. According to Schutz (1978), this tacitly held knowledge is used to deal with practical situations. If the researcher wished to trace practice knowledge from practice itself, it would be necessary to be present when it occurred in order to observe the practice and discover by questioning and interpretation, logic that informed it.

Ethnomethodological studies tend to dwell at length on methodology and results but give very little information about method. Garfinkel's (1967) breaching studies offer little in the way of method that would stand modern ethical scrutiny and are unacceptable in terms of the contemporary philosophy of nursing. The three authors Baccus (1986), Weider (1976), and Sudnow (1967) had apparently undertaken methods of observation that incorporated varying degrees of participation, although none describes it in those terms. I decided to use participant observation as the method of data collection in three wards in a large provincial acute-care hospital.

All participant observation raises ethical issues of privacy.

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This study has its origins in my clinical experience (Baker, 1995). Before the study, I observed that not all medication errors, as defined by the formal rules, are reported by nurses. My experience as an Australian Hospital Quality Assurance Coordinator raised more questions about the subject.

I sought to understand how nurses bring order to a disorderly situation. When they are asked for the rules that govern the administration of medications, nurses quote the five rights, that is, the right time, right patient, right dose, right drug, right route—and when questioned, insist that they report all errors. However they are clearly not reporting all errors as defined by institutional rules.

The literature is also contradictory. In a benchmark study, Barker and McConnell (1962) write that the medication administration error rate by nurses is about one in 10 and that all nurses make errors in numbers directly proportional to the number of medications they administer. They also state that nurses are only aware of a few of the errors they make, but of the ones they do know about, they report a very small number. Most of the quantitative research carried out since 1962 by nurses and others, is based on self-reported error rates. If the assertions of Barker and McConnell (1962) are true, research based on the assumption that the reported error rates and real error rates are the same appears unlikely to be valid.

Some of the nursing literature states that as nurses become more experienced with certain medications, patients, and ward routines, they make less errors. Other writers state that as nurses become more experienced they report fewer errors. Frances (1980) writes that as nurses become more experienced, they appear to redefine error. This statement offered an insight to the problem and lead to the study. If nurses do redefine error, what is the new definition? Ethnomethodology was adopted as the research design of the study.

confidentiality, and anonymity. For the researcher, it also raised a personal issue of indebtedness to participants. These concerns are dealt with at length in the original report (Baker, 1995). The ethics of the project were approved by the University Research Ethics Committee and the institutional Research Ethics Committee. All prospective participants were given a truthful explanation of the study and each nurse who chose to join the study gave written consent. On each ward, the researcher spent two weeks on morning, evening, and night shifts respectively, and some time on weekends and public holidays. The period of participant observation was 18 weeks in all.

Data took a number of forms. Documentation about administration of medication by nurses were analyzed. These documents included the laws regarding control of medications and other drugs of the appropriate state, institutional nursing policy, procedure books, and the scheme instituted by the hospital for reporting and accounting for errors, including disciplinary measures for nurses who made them (Cobb, 1990).

Field notes of observations and the researcher's reflections were recorded. Formal interviews were carried out with senior nurses and clinicians, some of whom chose not to talk within the hospital. Also informal interviews took place in the wards during or shortly after the work observed. Hangovers—shift reports—were also recorded and proved a rich source of data because nurses frequently account for their actions in asides during these formal reports.

Analysis was done using the documentary method of Garfinkel (1967) which is hermeneutic, in that the indexicality—the influence of previous occurrences to the meaning of the current situations—and reflexivity, the contribution made by utterances to the situation they describe, of practices—including utterances—are taken into account. Particular occurrences are interpreted in the light of what is already known about the subject and general knowledge is further understood in the light of particular occurrences. Three criteria, as outlined by Psathas (1987), were used to validate results.

Results

The findings are in three major groups. The first group of findings are called situated and embodied logics. These are the practices adopted by nurses in order to accomplish certain goals in particular situations. Although they are situated, they and similar practices may be widespread. They include ways of managing the medication trolley, reading between lines of medication-order and administration sheets, and using the medication round for gathering information for other purposes. These situated and embodied logics help nurses to be orderly in the complex practice world.

The second set of findings are called the criteria for redefinition of error. This is a set of criteria nurses use to decide whether an incident a "real" error. Of course every nurse is professionally obliged to report errors, but if an error can be redefined, a medication-related incident becomes a nonerror that does not need to be reported and no guilt is attached to it.

The third set of findings were serendipitous and included the other uses to which nurses turn institutional rules with the purpose of making their own lives orderly.

Redefinition of Error

Criteria used by nurses in the study to decide whether incidents

are errors or not were the following.

If it's not my fault it is not an error. In spite of institutional rules and the efforts of nurses to obey them, there are times when following the rules becomes virtually impossible, through no fault of the nurse attempting to administer medications. Examples are those occasions when patients are absent from their rooms: This may be for good reasons, such as investigations or therapy in another part of the hospital. Even if patients are where they are expected to be, it may be impossible to administer medication—if an intravenous drug has been ordered, for instance, and no intravenous access exists. In the hospital studied, only medical practitioners can legally provide access. Without it, the medication cannot be administered. On occasions, the prescribed medications are not available on the ward. On other occasions, medical officers visit patients and order doses of medication to be administered immediately, without communicating this to a nurse.

In all cases, nurses make serious attempts to ensure that the patients receive the drug ordered for them. These efforts may include calling the physician, requesting medications from the pharmacy as a matter of urgency, or giving a medication as soon as it is possible to do so but irregularities of administration are often not reported as errors. The reasoning behind this is that reporting an error on the form prescribed by the institution requires that someone be held responsible. If there is no single nurse who can shoulder the blame it is no one's fault; it is not an error.

If everyone knows, it is not an error. In a particular incident, it was observed that certain drugs, designed for administration by the transdermal route using skin patches, were routinely administered by the night staff at 0600 hours when the prescription stated that they should be applied at 0800 hours. When an experienced RN was asked about this she replied,

Yes, they should be applied at 0800 hours, but there are no scheduled drug rounds at that time. The ward is very busy at 0800, with breakfasts and other events and the patches are frequently forgotten until the 1100-hour drug round. If they are applied at 1100 hours, the patients must be awakened very late at night in order to remove the patches; or alternatively if they are removed before the patient goes to sleep they miss a part of the therapy the patches provide. For these reasons, they are applied by the night staff at 0600 hours. All the staff know this is done as do the medical officers, who approve of the practice but do not change their prescribing patterns. Everybody knows, so it is not an error.

Another example is that oral hypoglycemic agents are ordered three times daily. In the hospital in which the study occurred, the administration times are 0600 hours, 1600 hours, and 2200 hours. When the hypoglycemic medications must be given in relation to food, the 2200-hours dose is inappropriate. Nurses administer the medications at appropriate times in relation to meals. The medical officers are aware of this although they do not change the prescribed times for administration. Everybody knows it is not an error, and it is not reported.

If you can put it right, it is not an error. Nurses often "put things right." They do this according to their knowledge of the drug in question, their knowledge of the needs of a patient, and a patient's response to a drug. The experience of nurses and their resulting confidence govern their actions. The more experienced they are, the more innovative they become about putting things right.

Putting things right might apply to physically administering a drug as in an incident in which two nurses, an RN and a student, were

administering the "out of hours" medications. These were numerous and by the time they came to the last, they realized that they were administering an every 4 hour dose of antibiotic to a child, 2 hours late. This might have allowed the serum levels of the medication to drop below therapeutic levels but it would also reduce the interval between this and the next scheduled dose to 2 hours, which could result in toxic serum levels if the next dose were given on time. A student nurse said, "Oh, I'll go and get the incident forms." The RN replied,

"Like h— you will! Give the drug now and we'll get the night staff to give the next dose an hour late—by morning he'll be back on track!"

The request to the night staff to delay the next dose for an hour would reduce the likelihood of toxic levels being reached and being only 1 hour late, the interval between that and the subsequent dose would also be 3 hours and reasonably safe. The child would receive the correct dose over the 24-hour period. It had been put right, it was not an error and was not reported.

Putting things right may in fact, as in the anecdote above, not only involve one error, but the deliberate planning and collusion with others to give further doses of the same drug, or other drugs, in ways that would be regarded by the formal definitions as errors.

Putting things right might also apply to records of administration, in that records are made to appear as though the procedures have been carried out in accordance with the rules, when in fact they might not have been. This might occur at the time of administration or much later. Staff arriving for morning shift are handed records to put right from their morning shift of the day before, by the nurse who noticed the discrepancy after they had gone off duty. It is often done discreetly—especially for members of the team. Casual workers or nurses who have not yet gained acceptance might be required by the person in charge to report the error.

If a patient has needs which are more urgent than the accurate administration of medication it is not an error. There are times when in the clinical judgment of nurses, other needs of patients are more urgent than the need for accurate compliance with institutional policies. To the nurses in these cases of medication irregularity, no error has occurred or is reported.

An interesting example of this involved a man who was suffering from sleep deprivation. He had been very ill for weeks and had been to the Intensive Therapy Unit and back to the ward twice. He required constant attention for various reasons throughout the day and night. This deprived him of sleep, with the result that he had become severely disoriented. A nurse on the previous shifts had attended his needs conscientiously and on time but in doing so had contributed to his sleep deprivation.

He had been receiving narcotics for pain relief and no additional sedation had been ordered but the night nurse who was arriving for her 3-night period of duty, requested and obtained an order for sedation for this patient. Then the three members of the night shift and the participant observer went to the patient's room. Everything that needed to be done for him was done in one visit. This meant that some drugs were given early and some late. He also received other nursing care including pressure area care, mouth care, toileting, and other comfort measures. The bed was arranged, lighting was adjusted to keep his room dark, and he was left to sleep. He slept for an unbroken 6-hour stretch—waking refreshed and oriented, with his morale restored. To the nurses, he had needs

far greater than his need for on-time drug administration. To provide for those needs, they had taken steps involving deliberate acts which, if interpreted by the official rules, were errors but according to the logic of the nurses were not errors and were not reported.

When emergencies occur, dealing with them takes precedence over everything else nurses should do. An observed incident involved a patient who hemorrhaged internally early in the morning just as medications and many other tasks were to be done. The night staff consisted of one experienced RN, one first year graduate nurse and one emergency nurse. All of these, plus the researcher, became fully occupied in caring for the patient, or supporting that care—by assembling equipment, preparing emergency medication, and facilitating communication between ward nurses, nursing administrators, and medical staff. Such was the collegial communication network, particularly among night staff, that nurses from other wards appeared as they finished their work for the morning, to voluntarily take up the routine work of the ward. The routine work, including the administration of oral medications, was carried out about 1-1/2 hours after the time set for doing it. Five of the night staff were late getting off duty, including the nurses allocated to the ward and those who came to help them finish their work. No errors were reported.

A clerical error is not a medication error. In support of each other, nurses frequently assume that in the case of apparent errors in recording, no medication error has been made. Observations and anecdotes which support this have to do with documentation in the drug-administration record.

For example, one nurse began the 1100-hours drug round and in the drug administration form found that the nurse doing the previous round had signed in the 1100 hours place on the form. The administration was certainly recorded incorrectly, in spite of the shaded bars and columns across the page to help nurses locate the correct section to be signed. When questioned, the nurse declared that she was sure the person who carried out the previous round had administered the drugs correctly; she had simply signed in the wrong place. The ways of investigating the possible error would involve telephoning the night staff member who had gone off duty at 0730 hours and should be asleep by this time. This would cause the sleeping nurse great distress and she probably wouldn't remember anyway. She had carried out the drug round at 0600 hours after she had been on duty for nearly 10 hours. It was easier and kinder, by far, to assume that this was a clerical error only.

In another incident, a student nurse recalled that when she went with an RN to check the IVs on the ward, they found an IV flask, which was supposed to contain a certain antibiotic, labeled with the name of another drug. IVs with drug additives are marked with special labels printed in red. On these are descriptions of the drugs added, the concentrations, the time, and signatures of two nurses—the nurse who draws them up and administers them and the nurse who checks the drug, calculations, and identity of the patient. In the case in question, the drug named on the additive label did not agree with the orders. The student nurse was shocked when the RN decided that the error was a clerical error only, that the wrong name had been written on the label, but the drug in the infusion was the drug ordered. It was a clerical error, not a medication error, and was therefore not reportable.

If an irregularity is carried out to prevent something worse, it is not an error. The researcher went to a cardiac step-down ward to observe the 1100 hours medication rounds at a little after 1030

hours only to find that the drug round had been completed some time earlier. Soon after this, the ward activities became very confusing to the observer. There were patients being discharged, others being admitted. Patients were returning from investigative procedures and every staff member was busy. The researcher asked the charge nurse—new to the ward—if she had known that all this was going to happen. She replied, as she rushed past, that she had just this minute been told on the phone to expect the new patients and to discharge some others but that she had known about the patients away for investigative procedures.

The nurse who had carried out the medication rounds explained to the researcher why the round had been carried out so early.

I knew that CCU (cardiac care unit) was full and I knew there were two patients in emergency for us and two from CCU. I knew that if we were going to get four admissions we would have to discharge three patients and I knew that if I went to tea, the charge nurse would be here with only one helper. Neither know the patients or the medications and cardiac medications can worry some people. Anyway I knew they'd both be flat out with the admissions and the ones coming back [from investigations], so I did (the medications) early. And it's just as well I did because if I hadn't done them I'd still be doing them now, 4 hours late.

The nurse in question, an expert in Benner's (1984) terms, used informal communication networks which were as yet, unavailable to the new charge nurse. The information from those sources allowed her to predict that the workload would suddenly increase at about the time it did, when the ward would be busiest with routine matters, including the administration of medications. She also knew that the charge nurse, who was not familiar with the medications, would be dealing with all this while she was away. The only assistance the charge nurse would have was a relieving RN and both would be busy with the movement of patients. She had taken the opportunity to do the medication round early, and did not regard her action as an error; certainly no errors were reported.

Of course, if an error occurs which cannot be redefined, it is a real error and very few nurses have problems with the idea of reporting it, not to mention acting to mitigate the effects. In fact, the only thing that appears to concern nurses, in cases of real error, is protecting the patient.

Validation


The nurses involved in the study agreed that these findings reflect their knowledge, thus fulfilling the first criterion for validation (Psathas, 1987). The findings have also been validated by nurses who were not involved because they found that these situations were believable. This fulfilled Psathas' (1987) second criterion. Some of these nurses were at the hospital where the study was carried out and some distant from it. If you, the reader, recognize these activities in your practice—you, too, are validating the findings of this study. The third validation criterion of Psathas (1987) presents difficulties when it requires that ordinary people should be able to use the results of a study such as this as a guide-book for behavior in the setting of the study. Because nursing is such a specialized culture, it is unlikely that any non-nurse could know how to behave in a practice setting if they used only the information provided by the report. However, nurses from Australia, the United Kingdom, the United States of America, and Canada, have stated that they would know how to behave in the setting of the study if they used the report as a guide. They have not been asked to demonstrate this.

The presence of a set of rules for redefinition of error did not surprise the researcher. However the nurses who were asked to validate the rules were shocked by having to hear them spoken aloud. Some literally looked over their shoulders to see if anyone else could hear before they agreed that these are indeed the rules.

Discussion

Michel De Certeau (1988) describes strategy and tactic. He defines strategy in battlefield terms as the plans made by the generals before they enter battle. Tactic, on the other hand, takes place within sight of the enemy; it takes advantage of opportunity and requires wit and guile.

Institutional policies and procedures for the administration of medication can be likened to strategy. They are designed to cover all eventualities. All that nurses have to work with is strategy. To survive and make life orderly, they turn it to their own ends, thus creating tactics. All the findings of this study, situated and embodied logics, redefinition of error, and the other uses of the policies and procedures, are tactics created by nurses. They have taken that which is given and made from it something for themselves.

If nurses could contribute more to the official strategic rules for the administration of error, an example of change they might make is to differentiate between time-critical and non-time-critical medications, whether in terms of the intervals between doses, or the relationship to meals and other occurrences in the patients' days. Medications that are not time-critical could have more relaxed rules about administration times and thus accommodate the realities of nursing practice and create opportunities for accurate administration of time-critical medications. This change might result in fewer reportable errors and more timely, accurate administration of time-critical medications. 

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