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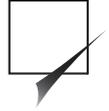
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Abstract

The quality of an evaluation largely depends on the quality of the underlying problem definition and the quality of the problem definition often improves as stakeholder involvement increases. By means of a study on the management of attempted suicides by drug overdose, we explored whether an interactive methodology could be adequate for problem structuring. Despite the fact that a high level of care is often unnecessary, many patients are admitted to the internal ward or intensive care unit. To solve the efficiency problem, some physicians proposed to evaluate the effectiveness of a six-hour observation unit. Although evaluating such a unit was technically feasible, we felt uncertain about the appropriateness of this intervention. The interactive methodology was useful in that it effectively made the divergent problem definitions and underlying normative values transparent. As a result, our research efforts will be better geared to information needs from persons involved and therefore more useful.

Keywords

attempted suicide, case study, interactive evaluation, problem structuring

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Introduction

Scholars such as Weiss, Rossi, and Dunn have emphasized usefulness as an important aspect of policy research. In their view, evaluation research should be useful for policy-making (Dunn, 2004; Rossi et al., 1999; Weiss, 1993). Following this reasoning, the quality of evaluation largely depends on the quality of the underlying problem definition and the quality of the problem definition often improves with the increasing involvement of stakeholders. William Dunn even goes so far as to *define* problem structuring as ‘a recurring phase of policy inquiry in which analysts search among the competing problem formulations of different stakeholders’ (Dunn, 2004: 72). Involving stakeholders in problem structuring is important because:

- It leads to a more comprehensive view of the problem situation and therefore diminishes the risk of an error of the third type: solving the wrong problem.
- It enables the policy analyst to design policy solutions that conform to stakeholder views and therefore increases the chances of successful implementation.

The idea that stakeholder involvement increases successful implementation has been confirmed by Frank Fischer and others, who argue that a policy is likely to fail if it does not represent a solution to problems as perceived by stakeholders and if it violates these stakeholders’ normative preferences (Fischer, 1999; Fischer and Forester, 1993; Grin and van de Graaf, 1996, 1998). The evaluation-driven development and implementation of a policy is shaped by interactions between all stakeholders, including those who create the policy, those who implement the policy and those targeted by the policy (Derthick, 1972; Mazmanian and Sabatier, 1983; Pressman and Wildavsky, 1973). However, difficulties arise when stakeholders have different, perhaps even incompatible, views. Moreover, these views may be misguided, poorly supported by evidence, or otherwise less valid.

In theory, fourth-generation evaluation serves the dual role of involving stakeholders and eliciting their views, and provides a means to deal with misguided or incompatible views. As conceived by Guba and Lincoln (1989), its backbone is the so-called hermeneutic-dialectic circle of interviews. Participants are interviewed successively. In each interview, the evaluator elicits views and exchanges claims, concerns and issues. Having interviewed the last participant, the evaluator then returns to the first interviewee, presenting them with the other interviewees’ views, thus moderating a continuous process of ‘vicarious learning’ in which alternative views are negotiated, misconceptions are filtered out and a consensus develops about problem definitions and solutions.

In this article, we will not address the many intangibles of fourth generation evaluation such as participant selection, closure, power differences and so forth. Rather, we regard fourth-generation evaluation as a problem-structuring process and, on the basis of a case study involving the management of attempted suicides by drug overdose, we will answer the following questions:

- What problem definition emerges from a fourth-generation approach to problem structuring, as compared to the problem definition as first presented by the person initiating the problem investigation?
- What difficulties are encountered that specifically pertain to the fourth-generation approach to problem structuring?

In this article, we will report on the use of an interactive methodology to structure a problem concerning the clinical treatment of patients who attempted suicide by auto-intoxication. Our aim was to explore, on the basis of this case study, whether an interactive approach offers an improvement

in problem structuring, as compared to conventional approaches to evaluation in healthcare that are usually restricted to assessing an intervention's effectiveness and efficiency. Initially, we will present the results of this preliminary study. This will be followed by contrasting our results with the expected outcomes of a more conventional approach to problem structuring that does not feature an interactive problem-structuring process.

Case description

The hospital involved in this study is a university-based teaching hospital. Each year, approximately 150 people present at, or are brought to, the emergency department following an attempted suicide using drugs. Some of the medical specialists, particularly those in internal medicine, felt that the care provided to these patients was inefficient. They perceived that, while these patients are often admitted to the internal ward or intensive care unit, it is rarely medically necessary. As a result, these patients occupy hospital beds that other patients may need more urgently, and thus hospital resources are used inefficiently. Meulendijks et al. (2003), after analysing the type and amount of drugs used, physiological parameters of the patients and the disposition of hospital admissions, confirmed that 60 percent of auto-intoxicant patients are admitted to an internal medicine ward or intensive care unit. Of these patients, only 40 percent receive treatment. In most cases, this treatment is initiated within one hour of the patient's presentation. In the remaining patients, treatment is started within 4.5 hours of their presentation. Based on retrospective data, the criteria that predict treatment courses based on the clinical signs were identified (Brett et al., 1987; Meulendijks et al., 2003).

To solve the efficiency problem, some physicians suggested that patients be observed in the emergency department in order to determine whether admission to the general or intensive care ward is necessary. In the case of an adverse event, the patient would be transferred to the internal medicine ward or intensive care unit. If no such events occur within a few hours' time, the patient would be discharged.

Our department (Medical Technology Assessment) provides general methodological support to clinical departments. We were asked to assist in conducting an assessment of a six-hour observation unit. Although evaluating such an assessment unit was feasible, we felt uncertain about the appropriateness of the six-hour observation unit and the way the underlying problem was structured. We doubted that all stakeholders involved would find the results of such an assessment – whatever they would be – compelling enough to make them cooperate with whatever changes the results suggested.

In order to properly structure the problem regarding the care of patients after auto-intoxication, we suggested that a preliminary study be conducted. This involved an interactive evaluation where various stakeholders participating in the project discussed their views. Our aims were:

- to reconstruct stakeholders' views towards hospital care for auto-intoxicated patients, and on this basis establish a shared problem definition;
- to identify solutions to problems perceived, as well as the conditions under which these solutions would be met with widespread support; and
- to identify research questions that appear to fit the problem definition and are amenable to research.

Methods: interactive evaluation

We performed an interactive evaluation based on the fourth-generation methodology elaborated by Guba and Lincoln (1989). Interactive methodology involves a multiple series of open-ended

interviews with stakeholders, where the interviewer exchanges claims, concerns and issues between the respondents (Grin et al., 1997). We first interviewed two actors (an internist and a psychiatrist) who had been involved in the retrospective study of the treatment of auto-intoxicated patients. At the end of the interviews, we asked them to suggest the names of other stakeholders, preferably with opposing views towards the auto-intoxication policy. This 'snowball' led us to interview psychiatrists ($n = 2$), internists ($n = 2$), nurses ($n = 2$), intensive care specialists ($n = 3$), general practitioners ($n = 2$), a psychiatric critical care worker ($n = 1$), a clinical psychologist ($n = 1$), an ER physician (in training for internist) ($n = 1$), a pharmacologist ($n = 1$), the head of the emergency room ($n = 1$), physicians from a general practitioner centre (medical emergency outside normal working hours) ($n = 2$), a representative of an organization for (ex)suicidal patients ($n = 1$), and a patient ($n = 1$).

During the interviews, which lasted approximately one hour, respondents were invited to elaborate on the auto-intoxication policy, particularly the problems as they perceived them, and solutions they considered appropriate. In the second part of the interview, the interviewer asked them to respond to the viewpoints of other stakeholders that the interviewer introduced to them anonymously. We sent interview summaries to the respondents for validation. After the first series of interviews, an overview of all the interviews was made and circulated among the respondents. In this summary, we emphasized the criteria for adequate care for patients after intoxication. During the second series of interviews, we asked respondents to respond to this summary.

Interviews were transcribed verbatim, and then coded and summarized. We used the reconstructing interpretative frames method to analyse the stakeholders' reasoning (Grin et al., 1997; Moret-Hartman et al., 2007). An interpretative frame is the interviewer's reconstruction of a respondent's view, featuring four 'layers' of problem definitions, proposed solutions, empirical background theories (= assumptions), and normative preferences (Grin and van de Graaf, 1996; Schön, 1983). Someone's background theories and normative preferences span the space within which problems are defined and solutions are sought. This method is a suitable tool for analysis, particularly in cases where it is important to associate a respondent's problem definitions and solutions with his or her background theories and preferences. Interpretative frames helped us to assess whether proposed solutions matched problems as perceived by stakeholders and did not violate these stakeholders' normative preferences. In this way, we merged Fischer's theory of argumentative policy analysis with the fourth-generation evaluation paradigm.

Furthermore, we scrutinized the responses provided by the interviewees against the literature available on the subject. Using these data and research, we wrote a draft of the final report that we also circulated among the respondents for comments.

Results: interactive evaluation

We approached 25 stakeholders for interviews. Two persons declined the invitation and three persons could not be reached to make an appointment. Twenty stakeholders participated in this study. Thirteen of them were interviewed twice. Of those who were interviewed once, three respondents replied to the overall summary by mail or telephone. Two respondents indicated that they felt less involved with the situation being addressed. Two respondents could not be reached for a second interview. We present here a summary of the discussions between the most important respondents. A summary of the respondents' interpretative frames is presented in Table 1.

Table 1. Stakeholders' Judgement of a Six-Hour Observational Unit, their Problem Definitions and Underlying Theories

actor	Judgement of solution	Problem definition	Background theories	Preferences
Internist	<ul style="list-style-type: none"> • 6HOU: + 	<ul style="list-style-type: none"> • For most intoxicated patients hospitalization at internal ward or ICU not necessary • Patients risk after intoxication is uncertain • Limited number of hospital beds at internal ward/ICU 	<ul style="list-style-type: none"> • Mostly no interventions needed that justify admission on ICU • Usually no severe complications after intoxication • Complications can be predicted using clinical signs 	<ul style="list-style-type: none"> • Efficient use of resources • Own task: to assess and monitor physical risk
Physician at ER	<ul style="list-style-type: none"> • 6HOU: + if central monitoring is available • At night, observation at general ward not safe 	<ul style="list-style-type: none"> • Patients risk after intoxication is uncertain • At night few nurses and no technical apparatus for monitoring patient at general ward 	<ul style="list-style-type: none"> • Many intoxicated patients have a psychiatric disorder • Suicidal act is often a cry for attention • Anamnesis is unreliable; Some patients deliberately over- or underestimate ingested amount 	<ul style="list-style-type: none"> • Own task: to assess and monitor physical risk • Patients with psychosocial problems not at internal ward
Intensive care specialist at teaching hospital	<ul style="list-style-type: none"> • 6HOU: + if also clinical protocol on diagnostics and consultations 	<ul style="list-style-type: none"> • Risks estimated by relatively inexperienced physicians (in training for internist); Intoxicated patients not seen by senior physicians • Intoxicated patient occupy hospital beds at ICU, while no medical-technical need 	<ul style="list-style-type: none"> • Usually no severe complications • Only patients whose vital signs are threatened need to be admitted at ICU 	<ul style="list-style-type: none"> • Own task: care for critically ill patients • Adequate use of available expertise
Intensive care specialist at general hospital	<ul style="list-style-type: none"> • 6HOU: +/-, current situation adequate: intoxicated patients at medium care unit 	<ul style="list-style-type: none"> • Uncertainty about risks, both somatically and in terms of repetition of a suicidal act 	<ul style="list-style-type: none"> • For assessing risk of complications, patients should be strictly monitored • Patients can over- or underestimate amount of ingested medicines 	<ul style="list-style-type: none"> • Safety first • Exclude risks as much as possible

(Continued)

Table 1. (Continued)

actor	Judgement of solution	Problem definition	Background theories	Preferences
Nurse at ER	<ul style="list-style-type: none"> 6HOU; + /- if in separated room and designated team of nurses 	<ul style="list-style-type: none"> Care for these patients is laborious; patients cannot be left unattended; Patients can be aggressive or agitated In an observational unit, more routine patient care tasks need to be done 	<ul style="list-style-type: none"> Suicidal act can be a cry for attention 	<ul style="list-style-type: none"> Prefers working in specialized care Speaking with patients about problems not nurses task
Head of nurses at ER	<ul style="list-style-type: none"> 6HOU; + /- if in separated unit 	<ul style="list-style-type: none"> Patient flow at ER is suboptimal Physicians at ER have little experience 	<ul style="list-style-type: none"> High turnover of patients at ER Usually (auto) intoxications are of short duration Sometimes observation can avoid hospitalization 	<ul style="list-style-type: none"> Efficiency and adequate patient flow
Pharmacologist	<ul style="list-style-type: none"> 6HOU; +/- Measurement of ingested drugs more adequate 	<ul style="list-style-type: none"> Risk of complications is uncertain; it is uncertain what patients have ingested 	<ul style="list-style-type: none"> Anamnesis of these patients is unreliable For assessing the risk for complications, one should know what and how much has been ingested and use knowledge on toxicity and complications for specific medicine 	<ul style="list-style-type: none"> Use available expertise
Psychiatrist at teaching hospital	<ul style="list-style-type: none"> 6HOU; + (provides opportunity for psychiatric consultation at convenient moment) 	<ul style="list-style-type: none"> If patients are hospitalized, they are seen the next morning. Then: the patient less willing to talk about the event; family and friends usually not present 	<ul style="list-style-type: none"> Hospitalization not optimal for patient's social situation 	<ul style="list-style-type: none"> Offer patients the care they need Aim of psychiatric consultation: to understand what happened involve patients social situation in care

Table 1. (Continued)

actor	Judgement of solution	Problem definition	Background theories	Preferences
Psychiatrist at general hospital	<ul style="list-style-type: none"> 6HOU: – (no opportunity for psychiatric consultation a convenient moment) 	<ul style="list-style-type: none"> Patient may have psychosocial crisis Patient will not remember things discussed shortly after event 	<ul style="list-style-type: none"> After intoxication amnesia can occur A suicidal event provides the opportunity to evaluate patients situation and therapy 	<ul style="list-style-type: none"> Prevent repetition of suicide attempt Aim of psychiatric consultation: arrange adequate mental care
Clinical psychologist	<ul style="list-style-type: none"> 6HOU: – Other interventions needed: <ul style="list-style-type: none"> A case manager: First appointment aftercare inside the hospital. Active outreach. 6HOU: – Other interventions needed: <ul style="list-style-type: none"> Initiation of care in cooperation with general practitioner 	<ul style="list-style-type: none"> There is little attention given to patients who attempt suicide. Connection between acute care in the hospital and aftercare is suboptimal. 	<ul style="list-style-type: none"> Patients have limited problem solving ability Continuity in care and care giver can prevent repetition of suicide attempt. Patients who attempt suicide have increased vulnerability. Discussing suicidal tendency can be difficult and threatening for care givers. Psychiatrists don't have an adequate overview of care patients are receiving or insufficient communication between primary healthcare and hospital care. 	<ul style="list-style-type: none"> Prevent repetition of suicide attempt Continuity of health care
General practitioner	<ul style="list-style-type: none"> 6HOU: – Other interventions needed: <ul style="list-style-type: none"> Initiation of care in cooperation with general practitioner 	<ul style="list-style-type: none"> Coordination of mental aftercare is suboptimal 	<ul style="list-style-type: none"> Psychiatrists don't have an adequate overview of care patients are receiving or insufficient communication between primary healthcare and hospital care. 	<ul style="list-style-type: none"> Continuity of health care
Employee from organization supporting (ex)suicidal patients	<ul style="list-style-type: none"> 6HOU: – Other interventions needed: <ul style="list-style-type: none"> Central triage on acute (psycho)social problems Central crisis telephone number. 	<ul style="list-style-type: none"> Insufficient attention to patient problems. Accessibility of psychosocial care in acute situations is limited. 	<ul style="list-style-type: none"> Suicidal act results not only from psychiatric disorder; but also often due to psychosocial problems. If problems are not solved, repetition of suicidal attempt is likely. Psychiatrist not most adequate caregiver to talk to these patients; Patients more likely to talk about their problems with fellow sufferers. 	<ul style="list-style-type: none"> Provide solutions to patients' problems. Give patients the ability to speak about their problems.

ER = emergency room; 6HOU = six-hour observational unit; ICU = intensive care unit.

Internist

According to an internist (doctor of internal medicine), the main problem was that many intoxicated patients were being admitted to a general ward or intensive care unit while, in retrospect, admission often appeared unwarranted. These hospital beds are scarce and expensive. Unnecessary admissions might result from the unreliability of patients' anamneses. It is often unclear what patients have ingested, how much and how long ago. Patients are sometimes somnolent when they arrive at the hospital, or under- or overestimate the amount of drugs ingested, sometimes deliberately. As a result, it is difficult to assess the risk of complications. However, most auto-intoxications are considered non-life-threatening. (*background theories*). The internist aims at the efficient use of resources (*normative value*). On the basis of this, the internist argued that the solution to the efficiency problem is to monitor the patient for a few hours in the emergency department. Complications can be predicted using clinical signs (*background theories*). Furthermore, most drugs reach peak blood levels within a few hours.

ER physician

The ER physician agreed that an observational unit could be useful, not only for patients suffering from auto-intoxication, but also for other classes of patients, such as those with head traumas. In fact, she argued that the general ward is an inadequate location for monitoring a patient's physical state due to the lack of apparatus to measure blood pressure, heart rate, and respiration (*problem definition*). Moreover, most auto-intoxicant patients arrive during the evening or at night when only a few nurses are present in the general ward. However, the ER physician pointed out another aspect surrounding the care of suicidal patients. Some patients become aggressive, and do not remain in their beds. Furthermore, the ER physician claimed that many patients who intoxicate themselves have psychiatric disorders (*background theories*). Therefore, she argued, patients who are somatically safe should be admitted to a psychiatric ward. An observational unit for this class of patients requires additional measures to ensure the safety of both patients and medical personnel.

Intensive care specialist

An intensive care specialist agreed that the existing hospitalization policy concerning auto-intoxication was inefficient. Due to the uncertainty with respect to drug intake and risk, patients might be admitted to an intensive care unit too readily. However, an observation unit in the ER does not necessarily solve this problem. In the ER, patients are commonly seen by newly graduated physicians who have limited expertise and experience (*problem definition*). Therefore, the intensive care specialist emphasized that, besides the introduction of an observational ward, persons involved in the development of hospital policies should develop a clinical protocol concerning diagnostic interventions to be performed, and experts to be consulted.

Emergency department nurse

ER nurses rejected the implementation of observation unit, should this unit be located in the ER. They acknowledged the existing efficiency problem, but raised several objections against the proposed solution. First, they argued that some patients who have intoxicated themselves behave aggressively or become agitated, thus disturbing the care of other patients. Second, most ER nurses are specially trained to work in a dynamic, acute care environment. They prefer to work in specialized

care (*normative values*), not to perform routine nursing activities such as washing and feeding patients. For these reasons, an observational ward should be located in a separate ward and a separate team of nurses should be established to care for these patients.

Clinical pharmacist

Thus far, all respondents agreed that the existing care for auto-intoxicated patients was inefficient, framing the problem similarly, but rather arguing that an observational unit could be appropriate only under certain conditions. The first interviewee to frame the problem differently was a clinical pharmacist. According to him, the problem was that patients' anamneses were unreliable and that referring physicians lack the knowledge to adequately assess a patient's prognosis (*problem definition*). To assess the risk of complications, one should know what and how much the patient has ingested (*background theories*). A better solution would be to measure the type or amount of drug ingested by the patient in the patient's blood or urine. Using this information, a clinical pharmacist could estimate the risk of complications. As well, the clinical pharmacist emphasized that additional modifications were also needed to improve the care for intoxicated patients. First and foremost, a multidisciplinary team should be established to deal with these patients. Furthermore, physician knowledge regarding the diagnosis and treatment of auto-intoxicants should be enhanced through education.

Psychiatrist

A psychiatrist also considered the implementation of an observational ward useful, but like the pharmacist he departed from another problem definition. If patients have been hospitalized, the psychiatrist is called in for an evaluation the following morning. The psychiatrist prefers to visit the patient as soon as possible after the event, because he considers the patient more willing to speak about the situation shortly after the event (*background theories*). Second, family members or friends are more likely to be present in the evening, when most auto-intoxications occur. Family or friends often have useful information regarding the patient. The aim of the consultation is to assess the suicide risk and to understand what happened. According to the psychiatrist, an observational unit would provide an opportunity to talk to the patient soon after the intoxication.

However, a psychiatrist from a general hospital considered it useless to have a psychiatric consultation shortly after the event. Patients can be somnolent upon arrival and later will not remember what has been discussed during the consultation. Many patients have ingested benzodiazepines which may cause amnesia (*background theories*). According to this psychiatrist, the aim of a psychiatric consultation is to assess the suicide risk and arrange adequate care. In his view, it is best to admit patients to a medium-care ward, where they are visited by a psychiatrist the next morning. He agreed that the general ward was unsuitable, because patients could not be monitored adequately. The patients' physical state may deteriorate and there is a risk of repetition of the suicidal act.

Clinical psychologist

According to a clinical psychologist, many caregivers have little affinity with these patients and get irritated with them. Caregivers do not always understand when relatively small problems result in suicidal acts. A negative attitude exhibited by a caregiver affects the patient's willingness to talk about his or her problems with a psychiatrist. Another problem that the psychologist raised was that

the connection between hospital care and aftercare for these patients is inadequate. Some patients will not show up at outpatient consultations or community mental care clinics, which is problematic as continuous care is considered necessary to prevent a repetition of the suicidal act. In order to improve the continuity between acute hospital care and aftercare, active outreach measures should be used to encourage patients to keep appointments and caregivers could come to the hospital to meet the patients.

General practitioner

The general practitioner also perceived problems concerning the coordination of aftercare. Often, the psychiatrist arranges a new therapy which can interfere with therapy a patient is already receiving. Furthermore, the psychiatrist is not always adequately informed about previous, often unsuccessful, interventions. Mental aftercare should be arranged in coordination with other caregivers, including the patient's general practitioner, who keeps the general patient file.

Patient

An employee from an organization providing support to (post)suicide attempt patients agreed that not all patients receive adequate care. Many patients do not want to talk with a psychiatrist about their problems. They do not want to be labelled as a psychiatric patient, or have grown disillusioned with psychiatric care. Although some patients have a psychiatric disorder, the suicidal act usually results from psychological and social problems (*background theories*).

A patient who has been admitted to a psychiatric ward after treatment in the emergency department does not remember anything from the emergency department. The psychiatric ward provides him with a feeling of safety and security. In this ward, patients have the opportunity to talk about problems with some fellow-sufferers, who empathize with the patients' situation.

In sum, the internist proposed short observation of patients. Some respondents judged a observational unit also as worthwhile, as it fits their problem definitions and did not violate their normative values. For the psychiatrist in the university hospital, for example, a observational unit could provide a solution to his problem that the possibilities of consulting the patient at a convenient moment are limited. Some respondents judged a observational unit only relevant if additional measures are taken to adapt the intervention such that it fit their problem definitions. For example, the ER physician acknowledged the value of a observational unit, but only if strict monitoring is possible. Some respondents consider a observational unit as not useful. The intervention violates their background theories or preferences. The clinical pharmacist preferred other interventions. In order to assess risks, one should measure the type and amount of ingested drugs. According to the psychiatrist in the general hospital, a short observation at observational unit demands a psychiatric consultation shortly after the event. This conflicts with his theory about the occurrence of amnesia. The ER nurse is against an observational unit unless other nurses would care for these patients. Finally, respondents raised other problems concerning the care for intoxicated patients for which other interventions are needed.

Conclusions

Based on the interviews, we drew the following conclusions:

- The introduction of a six-hour observation unit was well supported within the university hospital, on the condition that it is located in a separate unit and equipped with its own, well-trained staff.

- In order to improve patient care, arrangements should be made between departments in the hospital and between hospital and primary (mental) healthcare. These arrangements should be documented in (local) guidelines.
- Currently, the psychiatric consultation targets different goals: acute care and non-acute care. An observational unit might cause problems with non-acute care, such as the arrangement of aftercare. Possibly, the psychiatric consultation could be split up, with a consultation shortly after the attempted suicide, and a later consultation, perhaps on the next day. A disadvantage of this is that it is time consuming to see patients twice. Furthermore, it is uncertain whether a patient will show up for the second consultation once discharged.
- Relevant research questions were determined that concerned the efficiency of an observational unit, as well as several issues concerning psychiatric care. Would the implementation of an observational unit decrease the number of unnecessary hospitalizations? Would the implementation of an observational ward decrease the number of patients who are consulted by a psychiatrist? Would patients remember or keep appointments that are made at the observational ward? Would the implementation of an observational ward decrease the number of patients who repeat a suicide attempt?

Outcome: Interactive evaluation compared to conventional approach

To assess whether our interactive problem-structuring process had been useful, we needed to compare our results with the results we would have obtained had we used a conventional approach. While the actual results resulting from a conventional approach are based on conjecture, according to the internist who first presented the problem to us, it is safe to assume that the problem would have been framed in terms of efficiency and unnecessary hospitalizations. Research would have focused on the efficiency of a six-hour observation at the ER. Already, we believe that we may point out a few important differences.

Efficiency research improved

Despite the fact that efficiency remains an important issue, and efficiency research remains relevant, the interactive process led us to understand how to improve the validity and usefulness of the outcomes. Efficiency research, especially when it is comparative, rests on the assumption that both comparators are optimized and stable, i.e. that they are no longer 'moving targets'. As the interviews have clearly shown, in our instance, this was not the case. Therefore, efficiency research is as yet premature.

The interactive problem-structuring process yielded a broader insight into the conditions under which a six-hour observation unit could be successful. In particular, the arrangements between the departments involved and the role of the psychiatrist appear likely to contribute to optimized care. The discussion on these issues has led to research questions that, at this stage, appear to be more relevant than the question of efficiency.

The first question raised through our research concerned the uncertainty surrounding the patients' anamneses and the associated risks. To ameliorate this problem, two possible strategies were proposed: (a) the introduction of an observation unit; and/or (b) a laboratory analysis and titre of patient blood and urine to determine the kind and amounts of the drugs ingested. Few studies have been performed that have followed a group of consecutive auto-intoxicant patients post-emergency treatment to calculate the risk of complications (Hollander et al., 1999; Meulendijks et al., 2003). A six-hour period for monitoring patients is often mentioned in articles or books on clinical toxicology based on pharmacological data. Most patients have ingested benzodiazepines

that are relatively non-life-threatening when taken alone (Meulendijks et al., 2003). In intoxicated patients, complications occurred within a few hours of ingestion (Arranto et al., 2003; Liebelt, 1997). In other medical fields, observational units resulted in a reduction in the number of hospitalizations (Martinez et al., 2001). Information from blood and urine drug screening can also affect the decision regarding hospitalization of patients after intoxication (Fabbri et al., 2003). Identification of intoxicants, drug levels and patient observation are considered to be complementary approaches (Kellermann et al., 1988; Perrone et al., 2001). In only a few cases, however, did drug measurements result in a change in clinical practice (Kellermann et al., 1987). Apparently, in most cases, observation of patients will suffice. Nevertheless, some drugs or combinations of drugs are associated with a high risk of complications (tricyclic antidepressants), or have complications that might occur long after ingestion (acetaminophen) (Neeleman and Wessely, 1997). It is important to ascertain whether these medicines have been ingested.

The second question dealt with the most effective time for a psychiatric consultation to take place. Previous studies have demonstrated lower immediate and delayed recall in patients or healthy volunteers who had ingested benzodiazepines (Verwey et al., 2000, 2005). These data suggest that after 12 hours, and even after 24 hours, patients remember little (Verwey et al., 2000). Should patients be seen shortly after arrival (a few hours after ingestion) or the next day (less than 12 hours after ingestion)? Are the recall tests used in these studies comparable to the information discussed during a psychiatric consultation, and are the results transferable to the situation in our hospital? However, even patients who have used different methods for their suicide attempts have had problems recalling what they have discussed with their psychiatrist (Kerkhof, 1985).

Different framing and resistance from stakeholders

Another significant finding from our research is that a six-hour observation in the ER would meet with resistance from the ER nurses. This is a critically important insight, as the nurses' resistance would have most likely led to poorer quality care. Acknowledging this factor and adjusting the plans for a six-hour observation unit before an efficiency research project is conducted will not only ensure a better quality of patient care, but ensure the validity and usefulness of the research.

Our study supported the theory of argumentative policy analysis in that different stakeholders frame the situation with respect to auto-intoxicated patients differently. Importantly, the interactive process not only revealed differing problem definitions and perceived solutions, but has also enabled us to uncover and describe deeper levels of the respondents' interpretative frames, i.e. normative and empirical background theories, and preferences. Understanding why a stakeholder frames a problem the way he or she does is important for determining if these stakeholders will cooperate with implementing particular solutions. For example, factors such as the lack of affinity with the patients felt by some stakeholders, or the normative assumption that the hospital should assume full responsibility for the care of suicidal patients (not only for the treatment of their physical intoxication), determined the view of stakeholders towards appropriate and acceptable changes in current practice. It is difficult to imagine how failing to acknowledge these factors would not lead to conflict, as the theory predicts, and how research that inevitably conforms to only one particular view could be useful in such a context.

Auto-intoxication in broader perspective

The interactive process has led us to recognize that in our study there was a marked difference between the hospital and patient perspectives regarding the care for patients after auto-intoxication.

The patient perspective dealt with offering integrated care to optimize the pathway of care. These perspectives do not necessarily contradict each other, but the patient perspective does lead to different research questions such as those concerning psychiatric consultations and aftercare, aside from the question of efficiency. Interviews revealed that, in addition to the uncertainty surrounding the ingested drugs and the risk of complications, other problems might threaten patient care. Besides the treatment of the somatic problem, consideration should be paid to the psychosocial or psychiatric problems underlying the suicide attempt. Many studies on the management of these patients deal with either somatic (Jones and Volans, 1999) or psychosocial care (Kapur et al., 2004; Kerkhof, 1985). Although these problems can be discussed separately, our study demonstrated that the solutions to these problems may interfere with each other. Some respondents emphasized the need for measures to improve the continuity between acute care in the hospital and (mental) aftercare. Others discussed the possible consequences of a six-hour observation unit on the usefulness of the psychiatric consultation.

Discussion

The theory of argumentative policy analysis explains that a policy fails when it does not match stakeholder views. We have embedded this theory in fourth-generation methodology, using the reconstruction of interpretative frames as our chief analytical tool, to develop an interactive problem-structuring process. We have used this process to restructure the problem of managing patients after auto-intoxication, which we assumed to be an ill-structured problem. That is, we assumed that the actors disagreed on what information was needed and what norms were at stake. In such cases, the analyst has an important role in defining the problem (Dunn, 1994; Hisschemöller, 1993).

The interactive methodology was useful in that it effectively made the divergent problem definitions and underlying normative values transparent. Compared to the traditional approach (evaluation in healthcare mostly assumes that the problem concerns efficiency), problem structuring resulted in the identification of alternative interventions and research questions. Even though efficiency remained an important issue, the interactive process demonstrated that efficiency research was premature. Questions that appeared to be more relevant were linked to the assumptions actors had about the proposed intervention.

Only a few studies were found where the outcomes of interactive methods were compared to the results of conventional methods. One problem with such comparison is that the methodologies are based on different paradigms, each having its own criteria for quality. Although it might be difficult to define which outcomes are best, the relevance of the outcomes may differ. An interactive methodology has been used in the evaluation of cochlear implants (Reuzel, 2004). This interactive evaluation resulted in concrete policy recommendations supported by a wide range of stakeholders. A previous study assessing the efficiency of cochlear implants did not provide all the relevant information needed for policy decisions on this subject and was strongly contested. As well, it is difficult to compare the outcomes of studies done in different situations. Grin and Hoppe (2000) compared the structuring of car mobility problems in three technology assessment projects. They concluded that not only the methodology used (interactive methods or not) affected the outcome, but also institutional characteristics and context.

Validity of the interactive approach

With regard to the validity of our approach, we would like to address the following issues.

1. Although we believe that the problem concerning auto-intoxication is now better structured than it was, we cannot tell with certainty whether the process has been exhaustive and the problem structure may be further enhanced, perhaps by involving still more participants.
2. The role of the interviewer/moderator is critically important. Without the interviewer's creative role, the process probably would not have had enough impetus to lead to a desired problem definition. However, in order to play this role, the interviewer assumes the power to influence the process. As the responses to our report are fairly favourable, we feel that the role of the evaluator has not been problematic in this case. However, the issue deserves more attention. This has been addressed in greater detail elsewhere (Reuzel et al., 2007).
3. It was difficult to bring the process to a closure, that is, to define the boundaries of the problem. For example, was it valid to leave issues such as the aftercare of patients and arrangements between caregivers inside and outside the hospital out of the problem definition? We feel that it was. However, this is far from self-evident, especially if the establishment of an observation unit has consequences for the issues mentioned, as some participants argued.
4. The process has been too short to leave sufficient room for 'vicarious learning' (Guba and Lincoln, 1989). Moreover, learning processes were difficult to trace, as during the first series of interviews some respondents anticipated the viewpoints of other stakeholders, which were partially known to them. Usually, participants in an interactive process learn, and on this basis adjust their views at all levels of their interpretative frames. Guba and Lincoln trust that vicarious learning eventually leads to congruence between the views of participants, or even consensus. Regarding this subject, it is important to note the disagreement between the two psychiatrists on when best to consult with the patient. We have tried to settle this issue using the evidence available in the literature, but it remains uncertain whether both psychiatrists could have lived with the outcome, if they both worked in our hospital. In this instance, the time allotted for the study has been too short to reach congruence or consensus. Therefore, we have marked the issue as a further research question and a relevant part of the problem. We considered this lack of congruence valuable as it allowed us to identify this research question and demonstrate the usefulness of our approach. We have not used the interactive process to reach agreement about solutions for the care of auto-intoxicated patients, but for problem structuring.

Conclusion

Despite questions of validity, we believe that the interactive problem structuring process has been a valuable project. It has significantly broadened and improved our insight into the subject under investigation. As a result, our research efforts will be better geared to information needs from persons involved and therefore more useful. Moreover, we have gained a deeper understanding of potential resistance from important stakeholders and now have the opportunity to acknowledge their reasoning.

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