Middle Articles

HOSPITAL TOPICS

Subjective Follow-up of Patients from a Surgical Intensive Therapy Ward

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Summary: One-hundred consecutive patients who had been treated in the surgical intensive therapy ward completed a form recording their impressions of their stay. Most patients had a reasonable idea of how long they had spent in the ward and few remembered being in pain or excessively worried by any of the procedures carried out. Those who had been artificially ventilated had little recollection of this period; most either did not realize that their breathing had been artificially maintained or had no idea of the duration of ventilatory support. Very few of the patients who had tracheal suction via endotracheal or tracheostomy tubes were unduly worried by this, but 60% of the patients who needed nasopharyngeal suction to help sputum clearance had been considerably worried by this.

Most of the patients were very pleased with the medical and nursing attention they had received and did not find the "intensive" nature of their care unduly disturbing.

Introduction

Intensive therapy wards are often regarded as very frightening places by members of the medical and nursing professions as well as by the general public. It has been suggested that the atmosphere of a busy intensive therapy unit is the opposite of the peace and quiet required for recovery from serious illness (Watts, 1969). While technical advances continue it is important to keep the effects of the environment under review (Kornfeld, 1969a, 1969b).

Several individual subjective accounts have been published of experiences of intensive therapy (Bevan, 1969; Personal Paper, 1969), cardiac resuscitation (Both Ends of the Stethoscope, 1969), and artificial ventilation (Cole *et al.*, 1968; Personal Paper, 1969), which have been of great interest to those working in intensive therapy units. These reports, however, have obviously been written by intelligent and well-informed ex-patients and may represent the reactions of only a minority of the many people who have been treated in intensive therapy units. Several reports have appeared of adverse psychological or psychiatric effects of intensive therapy (Blachly and Starr, 1964; Egerton and Kay, 1964; Kornfeld *et al.*, 1965; Druss and Kornfeld, 1967; Parker and Hodge, 1967; Dominian and Dobson, 1969; Kornfeld, 1969a, 1969b). On the other hand, some patients may be reassured by continuous surveillance and exhibit emotional reactions and increased catecholamine production on returning to a general ward (Klein *et al.*, 1968; Sgroi *et al.*, 1968). It may be possible to have considerable influence on these effects by improving the environmental factors (Klein *et al.*, 1968; Lazarus and Hagens, 1968).

It was felt that a survey should be undertaken of a consecutive series of 100 patients passing through a surgical intensive therapy ward to determine how much they remembered of this part of their hospital stay; which factors were a source of worry, pain, or discomfort; and what were the general impressions they gained. From their replies it would be possible to decide on measures to improve the subjective experiences of the patients in this kind of ward. This type of survey could also be applied to different units which use different methods of patient management and cater for a different range of intensive therapy patients, or to the same unit following changes in methods of treatment to assess differences in subjective experiences.

Method

All the patients who had been in the surgical intensive therapy ward (Cornelius ward) were given a questionnaire one to two weeks after returning to their own wards. Their replies were correlated with summaries of their intensive therapy records. The survey was continued until a series of 100 consecutive patients had been obtained. The only patients who were not included were: (1) those who died while still in the ward or within a short period of leaving it, (2) those who had gone home or to another hospital within a few days of leaving the ward, (3) those who were too young to understand or co-operate in the survey, (4) those who were unconscious throughout their stay or remained too ill to be able to complete a form, and (5) those who had insufficient grasp of the English language and for whom no suitable interpreter was readily available.

None of the patients approached declined to take part in the survey. Two patients who completed questionnaires were not included because parts of their intensive therapy records could not be traced, so correlation with their replies was not possible.

The questionnaire the patients were asked to complete was as shown below.

Questionnaire on Treatment in Cornelius Ward

The time spent in Cornelius ward immediately after your operation was probably the most hectic and worrying part of your stay in hospital. If you can answer the following questions and then add any special comments of your own you can help us to make it as pleasant as possible for others who follow you.

- (1) How long do you think you were in Cornelius ward? .....hours? .....days? No idea.
- (2) (a) How long do you think you were on an artificial breathing machine? .....hours? .....days? .....weeks? No idea. Never.
(b) When on the breathing machine did you feel—pain? discomfort? Were you worried?
- (3) Which of the following descriptions of the nursing staff do you think is best?
(a) Efficient and sympathetic.
(b) Efficient but not always thoughtful enough.
(c) Too attentive.
(d) Too distant.
(e) Unable to remember.

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- (4) Which of the following descriptions of the medical staff (doctors and surgeons) do you think is best?
- Efficient and considerate.
  - Efficient, but did not explain things enough.
  - Too disturbing and discussed too many worrying medical details in front of you.
  - Not around enough when you felt you needed treatment or explanations.
  - Unable to remember any of them.
- (5) Do you think your relatives (or friends):
- Were allowed to see you enough, not enough, or too much?
  - Had adequate explanations about your progress? Yes or No.
- (6) Put a cross against any of the following aspects which worried you a lot:
- Physiotherapy.
  - Suction down breathing tubes.
  - Handling and movements of various tubes.
  - Amount of noise.
  - Conversations in the ward, medical, or other.
  - Amount of machinery.
  - Difficulty in resting or sleeping.
  - Pain.
  - Being on an artificial breathing machine.
  - Any other worries? If so, state what.
- (7) Were you pleased to leave Cornelius ward and return to your ward? Yes or No.
- (8) What is your feeling about Cornelius ward—pleasant or unpleasant?
- Signed..... Date.....

Routine of Intensive Therapy Ward

The surgical intensive therapy ward has five or six beds, including three in individual cubicles, and an annual turnover of about 285 patients. During a normal working week four cardiopulmonary bypass patients are scheduled for admission to the ward for their routine postoperative care. All these patients, and any others whose admission to the ward is arranged, are visited preoperatively by a member of the intensive therapy nursing staff, who explains to them what they are to expect during their stay and answers any questions they may wish to ask. This supplements the information they receive from their medical attendants and anything they may have heard from other patients. While in the surgical intensive therapy ward their overall care is supervised by the same medical staff and physiotherapist as in their previous ward, so that continuity of treatment and personal contact is maintained throughout. This is supplemented by management of respiratory care, analgesia, and sedation by the anaesthetic registrar on duty for the ward and other specialist services that are called in as required. Other patients are admitted as emergencies from the casualty department, operating-theatres, or surgical wards. Many of these have not had adequate preparation before transfer to this type of ward.

Most of the cardiac surgery patients arrive back in the ward with oral endotracheal tubes in situ and are ventilated until all the vital readings are stable. Then, as soon as the respiratory depressant effects of their sedative and analgesic drugs have lessened sufficiently, they resume spontaneous ventilation and are extubated. Some patients subsequently have difficulty in coughing up their sputum, and nasotracheal suction is carried out to cope with this problem. A few of the patients cannot be extubated within 48 hours (because of cardiovascular instability or respiratory or neurological problems), in which case tracheostomy is performed. Most patients who are ventilated are controlled with sedative and analgesic drugs (mainly diazepam, phenoperidine, and papaveretum) only. Neuromuscular blocking agents are used only for a specific indication, such as convulsions or severe arterial desaturation. Nitrous oxide and oxygen mixture is used to give background sedation and analgesia to about one-third of the patients who are ventilated and to about one-fifth of those who are not ventilated. Physiotherapy, aided by manual hyperventilation of intubated patients, is carried out at least three times a day by trained physiotherapists and at other times by nursing and medical staff.

The relatives and close friends of the patients are allowed to visit at any time of the day or night provided that this will not interfere with vital medical and nursing procedures. Often one of the relatives stays in a visitor's room in the hospital during the most critical period of the patient's stay.

Most of the patients admitted to the intensive therapy ward are sent there because they are likely to need ventilatory support or because of cardiovascular instability. As soon as they are satisfactorily weaned off artificial ventilation, and the likelihood of requiring ventilatory or circulatory support has passed, they return to their own wards. All surgical patients requiring ventilatory support are treated in this ward, so there is considerable pressure on bedspace. Unless a rapid turnover is maintained planned operations may have to be postponed.

Results

The duration of stay in the ward of the 100 patients ranged from 12 hours to 49 days, with a mean of 2.4 days (if the patient who stayed 49 days is excluded the mean becomes 1.9 days). Only 14 of the patients stayed more than four days. From the replies to the questionnaire it was found that over half of the patients were able to make an accurate estimate of the duration of their stay in the ward. About one-third had no idea how long they were there. The actual figures are shown in Table I.

TABLE I.—Accuracy of Patients' Estimate of Duration of Stay in Ward

Accuracy of estimate	Good	Fair	Inaccurate	No idea
No. of patients	56	10	4	32

Good = <25% error; fair = <50% error; inaccurate = >50% error.

There was no correlation between the accuracy of the patients' estimates and whether or not they underwent a brief period of ventilatory support (less than 24 hours). Nevertheless, the patient who was in the ward for seven weeks and was ventilated for four weeks had no idea of the duration of his stay and remembered very little of it on subsequent questioning, though he had no apparent disturbance of consciousness at the time.

Sixty-four of the patients studied were ventilated at some stage, the duration of ventilation varying between one hour and four weeks. Fifty-six of these were ventilated for less than 24 hours and only two for more than a week. If the four patients who had tracheostomies and were ventilated for between five days and four weeks are excluded, the mean period of ventilation was 12.8 hours. Only a few patients gave accurate estimates of the duration of ventilation. Most had no idea of how long they were "on an artificial breathing machine." The details are shown in (Table II).

TABLE II.—Accuracy of Patients' Estimates of Duration of Ventilation

Accuracy of Estimate	No. of Patients	%
<i>Ventilated Patients</i>		
Good	8	12
Fair	7	11
Inaccurate	5	8
No idea	39	61
Thought they were never ventilated	5	8
Total	64	100
<i>Patients not Ventilated</i>		
Correctly marked "Never"	12	33
No idea	21	58
Thought they were ventilated	3	8
Total	36	100

None of the patients reported feeling any pain while on a ventilator; five (7.8% of those ventilated) remembered discomfort while on the ventilator. One patient who reported discomfort while on the breathing machine, in fact, was never

ventilated. Only one patient reported feeling worried while on a ventilator and one "a little worried." Altogether 23 (36%) of the patients ventilated were sedated with 50:50 nitrous oxide: oxygen mixture (Entonox). This group did not differ significantly from the rest of the patients in their estimates of the duration of ventilation (Tables II and III). Of the patients who were not ventilated 7 (19%) were given Entonox via an M.C. mask for between 6 and 24 hours. When answering the question about ventilatory support two of them correctly stated they were never ventilated, two thought they were ventilated, and three had no idea of the length of time they were on a breathing machine (see Table III).

TABLE III.—Accuracy of Estimates of Duration of Ventilation by Patients

Accuracy of Estimate	No. of Patients	%
<i>Ventilated Patients</i>		
Good	2	9
Fair	3	13
Inaccurate	1	4
No idea	16	70
Thought they were never ventilated	1	4
Total	23	100
<i>Patients not Ventilated</i>		
Correctly marked "Never"	2	29
No idea	3	42
Thought they were ventilated	2	29
Total	7	100

When asked to indicate the most apt description of the nursing staff more than three-quarters of the patients marked "efficient and sympathetic" and about one-sixth "unable to remember." (Table IV).

TABLE IV.—Description of Nursing Staff as Indicated by Patients

Description Indicated	No. of Patients
(a) Efficient and sympathetic	77
(b) Efficient but not always thoughtful enough	2
(c) Too attentive	2
(d) Too distant	0
(e) Unable to remember	17
(a) and (c) Both marked	1
(a) and (d) Both marked	1
Total	100

When asked for the most apt description of the medical staff more were unable to remember any of them, but otherwise the results were very similar (Table V).

TABLE V.—Description of Medical Staff as Indicated by Patients

Description Indicated	No. of Patients
(a) Efficient and considerate	67
(b) Efficient, but did not explain things enough	1
(c) Too disturbing and discussed too many worrying medical details	1
(d) Not around enough when treatment or explanations were needed	0
(e) Unable to remember any of them	30
(a) and (b) Both marked	1
Total	100

Ninety-one of the patients thought their relatives and friends were allowed to see them enough (one was pleased that they did not come in when she did not want to see them). The other nine either omitted to answer the question, or did not know, or could not remember. Eighty-five of the patients thought their relatives were given adequate explanations about their progress; two thought they were not. The other 13 either did not know or did not answer.

When answering the 10 parts of the question about aspects which worried them a lot (question 6) 37 patients did not mark any of the suggested factors or add any others. The 63 patients who gave positive answers marked an average of 1.47 aspects each. Of the possible total 9.3% were marked

altogether. The most frequently marked worrying factor was difficulty in resting and sleeping, which was noted by 26 of the patients. Sixteen were worried by "suction down breathing tubes." Nine of these were patients who had required nasopharyngeal suction, only one of whom subsequently required bronchoscopy and tracheostomy. Altogether 15 of the patients in the survey were subjected to nasopharyngeal suction, therefore 60% of these marked suction as a worrying feature, whereas only 8% of the remaining patients were worried by it. Twelve patients found handling and movement of various tubes a source of worry—six were not ventilated at all and six were ventilated for only one to six hours.

Ten patients were worried by the amount of noise. Seven remembered being worried by pain—four of these were never ventilated at all and one was ventilated for only four hours, one for seven hours, and one for 12 hours. None of them reported feeling pain while on artificial ventilation in reply to question 2. Six patients marked physiotherapy as being a factor which worried them a lot—two had also required nasopharyngeal suction to aid sputum clearance, and one of these had also been worried by pain. Six were worried by conversation in the ward. Four patients reported being worried by being on an artificial breathing machine, though one of them, in fact, was never ventilated. Two of them had reported being worried while mechanically ventilated in answer to question 2, the other two had reported "discomfort" only. Seven patients mentioned other worries in reply to the final part of this question. Five of these were worried by oxygen administration, four of them were worried by feeling dry and thirsty, and one was irritated by the "ever-present blood pressure cuff."

Seventy-six patients said they were pleased to return to their own original wards, 12 adding comments to the effect that this was because it was a sign of satisfactory progress. Six patients had divided feelings about the move, eight could not remember their feelings at the time, and six did not answer the question. Four patients were not pleased to return to their previous wards. Seventy-one patients thought the ward pleasant, very pleasant, or quite pleasant and four thought it unpleasant. Of the remaining 25 patients, 6 did not answer the question at all, 13 could not remember enough to say, 5 were ambivalent about it, and 1 was "just grateful."

Of the 100 patients who completed questionnaires 79 had undergone open heart surgery, 11 had other thoracic operations, and 5 had abdominal operations (3 of these being aortic bifurcation grafts). Of the remaining five patients, one had a crushed chest and other injuries, two with chronic respiratory disease had undergone orthopaedic operations, one had conservative treatment for a dissecting aneurysm, and one was admitted for observation after possible inhalation of gastric contents. Sixty-two were men, 32 were women, and 6 were children between 8 and 14 years old (4 girls and 2 boys).

Discussion

The replies to the questions asked could be biased by the patients' gratitude for having survived what most of them realized was a most critical phase of their stay in hospital. On the other hand, the wording of the questionnaire did emphasize that we were looking for sources of worry and discomfort and may have reminded patients of some of the more unpleasant aspects that they might not otherwise have recalled or mentioned. Fahy *et al.* (1969) found that in their post-anaesthetic follow-up by questionnaire they obtained complaints of symptoms from more patients and that these patients complained of more symptoms than those followed up by an interview method. Most patients in our survey were in the ward for only a few days and they appeared to have retained a reasonable sense of the passage of time for this period.

Patients who stay longer, like the patient who stayed for seven weeks, may well lose all sense of time. For this reason it may well be desirable to have a calendar easily visible to a long-stay patient as well as the clocks they can see at present (as suggested by Kornfeld, 1969a).

Many of our patients remembered very little about their stay in the intensive therapy ward, though they were asked direct questions within one to two weeks of leaving. Very little was remembered of periods of mechanical ventilation and this did not appear to be an appreciable source of worry or discomfort. This was probably because adequate sedation and analgesia could be used in patients on ventilators without concern over depression of breathing and coughing and because most of the patients had been told preoperatively about the use of artificial breathing machines, so they knew what to expect.

Administration of nitrous oxide: oxygen mixture via the ventilator did not affect the accuracy of the patients' estimates of duration of ventilation. This probably indicates that similar degrees of sedation and amnesia were achieved by different methods in the other patients who were ventilated. Those who received Entonox via the face-mask, however, did not appear to have such accurate recollection as other non-ventilated patients; only two of the seven were actually able to say that they were never on an artificial breathing machine. Thus though there were only a few of these patients, they were less well orientated than the patients not receiving nitrous oxide.

It was encouraging to find the high regard the patients had for both the efficiency and the consideration shown to them by the nursing and medical staff. Several commented on the cheerfulness, kindness, and sympathy with which they were treated and added that all aspects were fully explained to them. The continuity obtained by the treatment of the patients by the same medical and physiotherapy staff as in their previous and subsequent ward is probably of great help to them in accepting the different environment and avoiding abrupt changes in management. This may help to prevent emotional reactions and increases in catecholamine levels, as found by Klein *et al.* (1968) in patients transferred from a coronary care unit to a general ward.

Nearly all the patients felt that their close relatives and friends were allowed to see them enough and had adequate explanations about their progress and treatment. Several added special thanks for the kindness and consideration with which they were treated. This time-consuming aspect was helped considerably by the ward receptionist, who could spend more time on communicating with relatives and arranging visits to the ward than could be spared by the trained staff. Nevertheless, there were still two patients who felt that their relatives did not receive adequate explanations.

The possible worrying aspects listed in question 6 were all features which we felt were likely to trouble the patients, though we did not know which would be the most frequent sources of discomfort. Awareness of these factors meant that the staff were trying to protect the patients from them and this must have helped to keep down the average number of aspects marked, which was fewer than one per patient. Difficulty in resting or sleeping was the most frequent worry and was marked by a quarter of the patients. This is difficult to avoid in a busy ward with severely ill patients and the following factors all contribute: (1) frequent recordings of observations such as blood pressure, (2) lights left on at all hours of the day and night, (3) noise from machinery and staff activities, (4) soreness of patients' backs after a long period on the operating-table, (5) tendency to slip down the bed when nursed in a sitting position, and (6) desire to avoid depressant analgesic and sedative drugs in postoperative patients with cardiac and/or respiratory disease.

Efforts to improve the amount of rest obtained should therefore be directed towards the following:

- (1) Avoiding making measurements which involve disturbing the patients except when these are essential—for example, by monitoring the electrocardiograph on an oscilloscope out of the patient's range of vision, arterial pressure with a gauge on an arterial line, pulse rate, apex rate, and central venous pressure, all without disturbing the patient.
- (2) Positioning essential lighting so that it should not shine into the patient's eyes.
- (3) Nursing patients in individual cubicles so they are not disturbed by activity around others.
- (4) Cushioning the patients well while on the operating-table to minimise postoperative soreness.
- (5) Using beds which are readily adjustable, so that a head-up position can be obtained with the feet also raised slightly to prevent slipping.
- (6) Adjusting drug dosage to allow the patients a reasonable ration of sleep. Perhaps hypnotic drugs such as chloral derivatives should be used more. If adequate analgesia and sedation are not possible without respiratory or cardiovascular depression the patient will be more comfortable if mechanically ventilated, so that adequate drug therapy can be given safely.

The next most frequently marked worrying aspect was suction. Owing to the importance of adequate clearance of secretions this problem is probably largely unavoidable. Nevertheless, the much higher proportion of patients who had suction via the nasopharyngeal route who marked suction as a worrying aspect suggests that this is subjectively more unpleasant than a period of endotracheal intubation. The alternative of occasional tracheobronchial toilet under light general anaesthesia may be preferable where rapid subsequent improvement is expected. The 12 patients who were worried by handling and movement of tubes were most likely to be referring to chest drains rather than endotracheal tubes, as half of them were not intubated and the other half were intubated for only a short period.

Of the 79 patients who were admitted after cardiopulmonary bypass procedures, 22 were not ventilated at all, 25 were ventilated for only a few hours (less than 12 hours), and 32 were ventilated for more than 12 hours. The first two groups each complained of an average of 1.00 worrying factor per patient in reply to question 6, but the patients who had the longer period of ventilation marked an average of only 0.78 worrying factor, despite the likelihood that they were the patients regarded as being at greatest risk, being most severely handicapped and in need of the highest degree of nursing and medical care, mechanical support, and intensive monitoring. Of the 23 patients given nitrous oxide: oxygen mixture via the ventilator seven were ventilated for less than 12 hours, and these marked an average of 1.14 worrying aspects. The other 16 who were ventilated for more than 12 hours marked an average of 0.75. The seven patients who were given the mixture via a face-mask marked an average of 1.00 aspect—that is, the same as the other non-ventilated patients. These results suggest that the use of nitrous oxide: oxygen mixture does not have a great effect on the subjective impressions of the patients. It may, however, have been used more often in the patients who appeared to remain too alert when intravenous sedation alone was used. (There was no attempt at random selection of patients for trial of the nitrous oxide: oxygen mixture.) None of the patients remembered feeling pain while artificially ventilated, which, together with the above results, suggests that the cardiopulmonary bypass patients have a subjectively pleasanter postoperative period if ventilated for at least the first 12 hours.

Worrying aspects that we had not included in our list but were mentioned by the patients were oxygen administration and dryness or thirstiness. These should probably be included as individual questions in any future survey to see if the incidence is greater when the answers are elicited by direct

questioning. Dominian and Dobson (1969), in their study of patients from a coronary care unit, felt that oxygen masks were a source of distress to the patients, because of their association with serious illness as well as the discomfort, but this would not explain our finding that more patients were worried by oxygen therapy than mechanical ventilation. The thirstiness mentioned by a few of our patients was probably mainly due to restricted fluid intake allowance to the postoperative cardiac patients, but if inadequately humidified gases are administered this will also contribute.

Most of the patients were pleased to return to their own wards, as they took this as a sign of recovery. A few did not want to leave because they found it a very happy ward and one because she liked having a room to herself. Four patients thought the ward unpleasant but most found it pleasant, and several comments were added about the efficiency of the staff, the reassurance of never being left alone, and the pleasant atmosphere.

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GENERAL PRACTICE OBSERVED

The Practice Nurse—A New Look

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Summary: A nurse has been employed by three general practitioners in a semi-rural practice of 9,000 patients since April 1968. Of her 1,360 home visits, 838 were primary visits, of which only 87 required follow-up by the doctor and 484 were requested directly to the nurse. More advanced procedures carried out by the nurse included electrocardiography, pregnancy diagnosis, blood sampling, and cytology. This study suggests that the work of a practice nurse improves the medical service already provided and reduces the work-load of the doctors, particularly by primary screening by the nurse both at home and in the surgery.

Introduction

Over the past few years there has been a great increase in the numbers of nurses included in the general practice team, either privately employed or seconded by the local authority. The nurse has largely continued to fulfil her traditional roles in the community, though it is possible to extend her role in the practice team to follow-up visiting and primary assessment (Hasler *et al.*, 1968; Marsh, 1967; Royal College of General Practitioners, 1968a). In a survey in south-west England (Royal College of General Practitioners, 1968b) it was suggested that "a great deal of experimentation and a major change of attitude amongst doctors is necessary before full use of nursing skills becomes possible in family practice." There is little evidence of such a major change.

We show that the nurse has a definite part to play as the agent of first contact. We made a preliminary examination of this (Smith and Mottram, 1967), while the present study ex-

amines the situation in greater detail, concluding that the nurses' work in primary medical care is safe and is acceptable to patients.

Study

The practice, which is semi-rural and of about 90 square miles (233 sq. km.) in area, has about 9,000 patients and three partners—one senior (Dr. A, aged 60) and two juniors (Drs. B and C, aged 40-50). The practice nurse works about 30 hours weekly between 9 a.m. and 5 p.m. She is employed by the partners and uses a practice car for visiting. In 12 months from April 1968 we investigated the effect of employing a nurse for primary screening by visiting and revisiting selected patients; the range of work possible both in the home and in the surgery, provided that suitable equipment was made available; and the reaction of patients to the service.

Methods of Recording

All face-to-face contacts between the nurse and patients were recorded on forms according to a code, particularly those findings relating to home visits. Similar records of the doctors' contact with patients in the home and surgery were kept for 12 months from May 1968 (Table I). The number of consultations and visits is lower than the national norm, probably owing to two factors:

- (1) We also work in a local general-practitioner hospital with 68 beds and a busy casualty department; some of the work normally carried out in a practice—such as minor surgery, and treatment of minor trauma and septic conditions—is dealt with there.

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