6.3.2 The frequency of care

a. The overall true frequency of performance of prescribed care was 64.00 percent i.e. 36 percent of the care prescribed by the charge person was omitted.

b. When the patient care standards were introduced the overall true frequency of care received dropped to 47.74 percent. The researcher believes this to be an unacceptable level of practice as more than half the care that should have been performed was omitted.

6.3.3 The extent of care

The overall true percentage extent of care was 59 percent. Although the score obtained was included in the 'poor care' category the researcher believes this to be unacceptable to practice as 41 percent of care was not undertaken.

The true percentage extent of care varied according to the patient. Although the overall true percentage extent of care of certain modalities of care such as PUPILS and VITAL SIGNS were included in the 'good care' or 'mediocre care' category the majority of care was included in the 'poor care' category. When discussing extent of care, results such as these are unacceptable in the pursuit of nursing excellence.

6.3.4 The norm and weighted norm of care

The overall percentage norm of actual care (40 percent) and weighted norm of actual care (45 percent) were in the 'dangerous care' category. The scores obtained varied according to the patient. Four patients received 'dangerous care' in as far as the overall percentage norm and weighted norm of actual care were concerned. The percentages obtained for the norm and weighted norm of actual care are so poor as nearly half the care on the six-weighted items rated NO CARE.

It is obvious from the results that all the care criteria as itemised in the schedules were not undertaken and when they were undertaken the level of practice was unacceptable. The research proved without a doubt that the examination of the quality of care in terms of the frequency, extent, norm and weighted norm of care received was justified. Had the researcher examined extent of care only, the results although only achieving 'poor care' would have been biased to the positive. The correlation of the results of the researcher and the co-observers supports the objectivity of findings (vide p342).
6.4 The quality and quantity of staff

6.4.1 Statistical testing has shown a significant difference in the care on the shifts 13h00 -
19h00, 07h00 - 13h00 and 01h00 - 07h00. For the remainder of the shifts this
certainty informs that when staff quantity and quality alter, care does not change
dramatically.

6.4.2 The research inferred that the quality of care improved when the combined personnel
performed the procedures, clearly team work thus improved care.

6.4.3 The study highlighted the lack of supervision of non-registered nursing personnel in the
delivery of direct care.

6.4.4 The level of knowledge of care-givers is unacceptable for nursing excellence. The lack
of knowledge of the nursing personnel was reflected in the unit personnel questionnaire
(APPENDIX Q) and in the quality of care received by the patients under review. There
is a very obvious need for education of all categories of personnel working with the
moderate or severely head injured patients. In order to ensure optimal health care,
clinical practice must be based on sound scientific knowledge and practical expertise.

6.5 The method of nursing case assignment must be altered to suit the
needs of the patient.

6.6 The care received by the moderate and severely head injured patients
formed part of the preventive rehabilitation programme.

6.7 The input with regard to aspects related to patient independence such
as communication, reality orientation, motivation and stimulation
were minimal.

The comprehensive care of the head injured patient that includes the provision of services, the
multidisciplinary approach and the quality of care received, was inadequate. The promotion of
excellence must become a priority in order to assist the head injured patient to function at
maximum capacity. The findings relating to certain aspects of head injury management such as
the documentation and inappropriate recording of care, the quality of care, the recovery and
rehabilitation of head injured patients will encourage the multidisciplinary team to examine their
practice in this regard.

The researcher believes that the findings of the research and the recommendations such as the
nursing care plan, the use of the quality assurance module, the protocols of management and the
means of documentation should form the basis for standardising a quality service for head injured
patients in The Hospital.
CHAPTER 9

RECOMMENDATIONS

Recommendations are presented in relation to the aspects of comprehensive care of the moderate and severely head injured patient studied in-depth in the previous chapters.

1. ESTABLISHING FACILITIES FOR THE COMPREHENSIVE CARE OF THE HEAD INJURED PATIENT

The Department of National Health and Population Development is responsible for providing comprehensive health services in South Africa. Rehabilitation is a state responsibility that has been delegated to Local Authority and/or various provincial authorities. State, Local Authority and provincial administrations are involved in the rehabilitation effort yet rehabilitation services remain fragmented and uncoordinated. It will be interesting to see the change in the health service as a result of the new dispensation in as far as head injury management and rehabilitation is concerned.

At present at The Hospital head injured patients are not as a rule admitted to the neurosurgical unit nor are they under the direct care of the neurosurgeon. There is no comprehensive head injury unit or rehabilitation facility. According to the findings of this research, no private or government funded institutions that specialise in the comprehensive care of the head injured patient only, exist. There are no comprehensive rehabilitation units similar to those established overseas, anywhere in South Africa. The exception is the head injury rehabilitation unit at one provincial and one military hospital, but access to these centres is limited. Head injured patients are cared for in units catering mostly for other patients. Provincial outlying hospitals have limited neurosurgical and rehabilitative services. A concerted effort is needed to establish both legislation and adequate facilities for the continuous care of the head injured patient.

Recommendations with regard to establishing facilities include:

1.1 Facilities that need to be established (vide p105/180):
1.1.1 An acute head injury unit.
1.1.2 A progressive head injury unit.
A comprehensive rehabilitation facility.
According to Clarke (1977), demonstration rehabilitation facilities to train health professionals in rehabilitation medicine must be established.

1.2 Adequate multidisciplinary staff posts must be created (vide p38/410).
1.3 Specialisation by medical and nursing personnel in rehabilitation must become a reality (Glanville, n.d.).
1.4 Nursing staff establishment must be altered to include (vide p52/468):

1.4.1 Clinical nurse specialists.
1.4.2 Primary nurses.
1.4.3 Practitioner teachers.
1.4.4 Rehabilitation liaison officers.

In an attempt to assist with the establishment of community based rehabilitation facilities the researcher in 1982 was instrumental in establishing HEADWAY - The National Head Injuries Association. It is now a registered welfare organisation.

2. EPIDEMIOLOGY OF HEAD INJURIES

Epidemiological findings are of importance to nurse administrators, educators, clinical practitioners as well as the multidisciplinary health team. The recommended role of the nurse with regard to the epidemiological findings of this study includes:

2.1 PRIMARY PREVENTION

2.1.1 The primary prevention programme must involve a multidisciplinary, multi-organisational approach.
2.1.2 Direct the comprehensive educational programmes at the population at large and in particular, at the following target audience:
- Total sample: 10 - 39 years
- Males: 20 - 39 years
- Females: 10 - 29 years

2.1.3 Include topics such as road safety, alcohol consumption, accident prevention, safety in sport and the safe handling of weapons in the programme.
2.2 PREVENTIVE REHABILITATION

2.2.1 Ensure that adequate emergency facilities for the handling of head injured patients, at the scene of the accident and on admission to casualty are available.

2.2.2 The early recognition and treatment of the primary injury may reduce the consequences of the head injury.

2.2.3 The nurse must utilize the epidemiological findings in secondary prevention, patient education and health teaching.

2.3 PLANNING A NURSING SERVICE

Epidemiological findings with regard to the frequency and severity of head injury, associated injuries, admission, discharge and length of stay need to be considered when planning an effective nursing service, especially as the majority of head injured patients are admitted for ≤ 24 hours. This information is essential for:

2.3.1 Planning facilities for the care of head injured patients.

2.3.2 Staffing the unit in terms of quality and quantity of nursing, medical, paramedical and auxiliary personnel.

2.4 PROMOTING NURSING EXCELLENCE

2.4.1 In order to offer a quality nursing service, information regarding the causes, severity of injury and associated injuries should be incorporated into the nursing process.

2.4.2 Protocols of nursing the head injured patient must be established.

2.4.3 For the purpose of ensuring effective discharge planning knowledge of epidemiological data is necessary.

2.5 DOCUMENTATION OF EPIDEMIOLOGICAL DATA

The study highlights the role of the nurse with regard to the documentation of epidemiological data and record keeping. Accurate complete recording of information, by all members of the multidisciplinary team, is vital for:

2.5.1 The assessment and management of the head injured patient is often based on recorded data.

2.5.2 Medico-legal purposes.

2.5.3 The purpose of research.
Conclusion

Epidemiological findings must be considered in primary, secondary and tertiary prevention. The research highlights the epidemiology of head injuries such as the age and sex distribution, mechanism of injury and associated injuries that are of importance to the comprehensive care of head injured patients, relevant to the local environment. The findings of this study with regard to sex, age distribution and mechanism of injury are similar to those of other authors (vide p211).

3. PATIENT RECOVERY

The presentation of findings with regards to patient recovery illustrates that each patient is an individual. Of the patients alive 12 months after injury recovery varied from a GOOD RECOVERY to a SEVERE DISABILITY. Patients who attended rehabilitation facilities and/or who were cared for by a devoted family appeared to demonstrate the best level of recovery. Perhaps what Lewin (1976) says is true that if the patients make some recovery in the first month then the tendency to reach a practical recovery, although this might take considerable time, is high. The study refutes the findings of Jones (1981) regarding the Glasgow Coma Scale on admission (vide p81). All patients in the study were admitted with a G.C.S. score of ≤ 8/15; the majority ≤ 5/15 yet 65 percent of the patients have survived.

The researcher believes:
(i) That the responsibility for rehabilitation should be a shared responsibility,
(ii) That at present the level of recovery is based on the available family resources, therefore not all patients are offered an equal opportunity.

To obviate the above the researcher recommends that:
1. Adequate rehabilitation centres and long term facilities be established,
2. Facilities for the assessment of physical ability, self-care and home activities, psychological functioning, social behaviour and educational ability are made available.
3. Families are referred to and make use of the available social services.
4. Appropriate discharge planning becomes a reality (vide p104/115).
5. Multidisciplinary patient follow up is introduced.
6. Family education programmes are introduced.
4. COMPREHENSIVE REHABILITATION

The comprehensive rehabilitation of head injured patients included in the study is
inadequate and depends largely on where the patients is hospitalized or resides as well as
family resources. Few out-patient rehabilitation services are available to, or are utilized
by the patient.

Recommendations with regard to the provision of adequate, comprehensive
rehabilitation services include:

4.1 A MULTIDISCIPLINARY TEAM APPROACH MUST BE
INTRODUCED

4.2 COMPREHENSIVE CO-ORDINATED REHABILITATION MUST
COMMENCE AS SOON AFTER INJURY AS POSSIBLE

The patients who were subjected to early rehabilitative intervention achieved well
(Patients 6, 7 and 9). Early intervention appears to affect morbidity and mortality.

4.3 SET PROTOCOLS FOR THE COMPREHENSIVE REHABILITATION
OF THE HEAD INJURED PATIENT, THAT CAN BE ADJUSTED TO
THE INDIVIDUAL NEEDS OF THE PATIENT, MUST BE
COMPILED

These include:

4.3.1 Preventive rehabilitation protocols.

The lack of exercise therapy with regard to the patients included in the study was
evident. Although Hirschberg, et al. (1976) state that two hours per 24 is all that is
needed to prevent disuse phenomenon, none of the patients received this exercise therapy.
Perhaps had exercise therapy been instituted the patients would not have required the
assistance of allied health professionals two years after injury. The researcher
recommends that preventive rehabilitation protocols be established forthwith.

4.3.2 Protocols for the reality orientation, motivation and rehabilitation of the head injured
patient (Doman, et al., 1966; Mahoney, 1980; Jennet & Tashiaio, 1981; Levin, et al.,
1982).

4.3.3 Multidisciplinary protocols.
4.4 SUFFICIENT COMPREHENSIVE CO-ORDINATED REHABILITATION FACILITIES MUST BE ESTABLISHED TO INCLUDE:

(Vide p106/188)

4.4.1 A specific live-in rehabilitation centre, with the average length of stay in the centre being about six months. As Ransenn (1985) so rightfully states, if the patient requires intensive rehabilitation he must be placed in a rehabilitation centre.

4.4.2 Day rehabilitation centres.

4.4.3 Out-patient rehabilitation facilities.

4.4.4 Vocational rehabilitation services:
   a. Rehabilitation workshops.
   b. Industrial work centres (Campbell & Dillon, 1982).
   c. Sheltered (Protected) workshops.

4.4.5 Rehabilitation centres should be supervised by nursing personnel.

4.4.6 Domiciliary health team services need to be available.

4.4.7 In the event that the rehabilitation of head injured patients occurs in an acute hospital, adequate co-ordinated out-patient rehabilitation services need to become available.

4.4.8 Co-operative care units.
   Co-operative care units similar to those described by the N.Y.U. (1979: 835) to teach patients and families about care that may be required at home, may be instituted. The introduction of this system will increase the confidence of the family and ensure that patients are not discharged into home care until such time as the family is able to care for the patient.

4.4.9 Referral of patients to private nurse practitioners.
   Although this may be expensive, where there are no residential facilities or domiciliary nursing services available, this may be a necessity for the patient who is cared for at home. Medical aid scheme legislation with respect to private nurse practitioners will need to be adjusted in this regard.

4.5 ASSESSMENT OF HEAD INJURED PATIENTS

4.5.1 Facilities for the assessment of head injured patients throughout recovery need to be established.
4.5.2 In order to provide a holistic approach and plan a personalised rehabilitation programme, formal assessment of the head injured patient should be undertaken by all members of the health team. This entails assessment:

a. On admission to the acute unit and at set intervals.
b. On admission to and prior to discharge from the progressive unit.
c. On admission to and prior to discharge from the rehabilitation facility.
d. Six months after discharge from the rehabilitation facility.
e. 18 months to two years after discharge from the rehabilitation facility.

4.5.3 Document the results of all assessments in the patient's file. Where applicable the research instruments may be utilized.

4.5.4 Base future recommendations regarding the patient's management on the comprehensive assessment of the patient.

4.6 REHABILITATION PROGRAMME

4.6.1 A comprehensive, co-ordinated, individualised rehabilitation programme that includes immediate, intermediate and long term goals must be formulated by the multidisciplinary team, the patient and the family.

4.6.2 Document the individual programme in the patient's records.

4.6.3 Ensure that the programme is therapeutic and that all modalities of treatment required by the patient, including rest and recreation, are prescribed.

4.6.4 Review the programme frequently, at set intervals.

4.6.5 Provide the patient with a rehabilitation programme outline, that may be changed weekly or as the need arises.

TABLE 9:1

Example of programme card

<table>
<thead>
<tr>
<th>Programme card</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name</strong></td>
</tr>
<tr>
<td><strong>Morning</strong></td>
</tr>
<tr>
<td>09.00 a.m.</td>
</tr>
<tr>
<td>10.00 a.m.</td>
</tr>
<tr>
<td>10.40 a.m.</td>
</tr>
<tr>
<td>11.10 a.m.</td>
</tr>
<tr>
<td>11.55 a.m.</td>
</tr>
</tbody>
</table>

(Birmingham Accident Hospital, U.K.)
a. The number of therapeutic sessions, each of 40-50 minutes duration, attended by the patient will be decided by the multidisciplinary team.
b. The nursing care plan from admission must fit into and be of maximum benefit to the total health care plan. It is essential that it is part of and promotes preventive rehabilitation.
c. Record progress in the programme (Series & Lincoln, 1978).

4.6.6 Positive re-inforcement to maintain motivation and for behaviour modification is important:
   a. Encourage active participation in the programme.
   b. Utilize achievement therapeutically.
   c. Introduce a system of rewards.
   d. Make use of charts that show individual and group progress.

4.6.7 Where possible family involvement in the programme is ideal.

4.7 PLACEMENT OF THE HEAD INJURED PATIENTS

4.7.1 Accurate patient assessment and discharge planning will allow for effective patient placement. The social worker, occupational therapist and neuropsychologist must become more active in this regard.

4.7.2 Co-ordinated comprehensive short term and long term rehabilitation facilities for the placement of head injured patients need to be established.

4.7.3 This will:
   a. Allow for more even distribution of the responsibility of rehabilitation.
   b. Decrease the responsibility of the family with regard to the provision of rehabilitation in the first year after the head injury.

4.8 REALITY ORIENTATION, MOTIVATION AND STIMULATION OF THE HEAD INJURED PATIENT MUST COMMENCE IMMEDIATELY AFTER THE INJURY

4.8.1 Include the concept of reality orientation in the educational programme of staff.

4.8.2 Encourage multidisciplinary stimulation of the patient as of day one of the injury.

4.8.3 Include stimulation in the therapeutic rehabilitation programme (Corrigan, et al., 1985).

4.8.4 Teach families about their role in the stimulation of the head injured patient during and after hospitalisation.

4.8.5 Establish protocols for the stimulation of the head injured patient, at various stages.
4.8.6 Acquire the necessary equipment for auditory, visual, tactile and cognitive stimulation of the patient in the unit:
- Calendars
- Games and toys
- Posters
- Radios
- Reading material including large lettered reading books.

4.9 COGNITIVE TRAINING MUST BE COMMENCED

4.9.1 Commence a programme of cognitive retraining as soon after injury as possible (Levin, et al., 1982: 209).

4.9.2 All patients must be assessed by a neuropsychologist for cognitive functioning on admission to the rehabilitation centre, at regular intervals and 18 months to two years after injury.

4.9.3 Establish neuropsychological services at the Hospital. A comprehensive co-ordinated cognitive rehabilitation centre, as that run by Prigatano, et al. (1984) in the U.S.A. needs to be established.

4.10 SOCIALISATION OF THE PATIENT MUST BE PROMOTED AND ENCOURAGED

4.10.1 Counselling, assessment and support of the patient and family by a neuropsychologist and other health personnel with regard to socialisation must be undertaken. The following must be introduced:
- Individual therapy,
- Group therapy,
- Behaviour modification.

4.10.2 Build the patient's self-esteem and confidence.

4.10.3 To aid acceptance and socialisation of the patient introduce the patient into the home situation slowly (vido p103).

4.10.4 Prevent social isolation:
- Encourage friends to visit,
- Encourage attendance of the patient and family at head injury support groups and HEADWAY meetings,
- Introduce group work, social activities and sports activities such as dancing, singing, picnics, swimming, a walk-a-day club and bowls into the patient's therapeutic programme.
d. Utilise community facilities for socialisation e.g. Mindenelle Sports Club.

e. Contact voluntary services, service and religious organisations to arrange contact with
the patient.

f. Ensure attendance of the patient at a rehabilitation facility or workshop such as AIM.

g. It must be borne in mind that not all the socially deviant behaviour is as a result of the
head injury (Jennett, et al., 1981) but it is imperative to try and enhance the social life
of the patient.

4.11 EDUCATIONAL ABILITY MUST BE MAXIMISED

4.11.1 Provide learning opportunities for the patient.

4.11.2 Complete a comprehensive assessment of the patient's physical, psychological,
emotional and cognitive circumstance prior to sending the patient to school, college or
centres for further learning. This supports the views of Edmonds-Hill (1977) and Blyth
(1981) (vide p101). Submitting head injured patients to a full educational environment
too soon after the injury will result in demotivation, frustration, decreased self-esteem
and a lack of self-confidence.

4.11.3 Provide the head injured patients with the opportunity of new learning, within the
limitations of their cognitive disability.

4.11.4 Complete a comprehensive assessment of the patient for placement at vocational and
training centres.

4.11.5 Existing educational institutions may be used provided they have facilities for the
disabled.

4.11.6 Establish places for learning such as Apex and Access college.

4.12 THE SYSTEM OF FOLLOW-UP OF PATIENTS MUST BE
IMPROVED

The follow-up of patients after discharge from the centre by the rehabilitation liaison
officer, social worker and community nursing services to ensure correct placement,
progress and family coping should be undertaken.
5. THE INTRODUCTION OF QUALITY ASSURANCE IN THE UNIT

Based on the results of the frequency, extent, norm and weighted norm of care, the patient care standards and other aspects of the research, the researcher recommends the following:

5.1 Quality assurance in the hospital must become a priority. Quality assurance to ensure that optimal health care services are provided, is the responsibility of the hospital administrators and all health professionals (Stevens, Jemigan & Young, 1983).

5.2 Quality assurance programmes must be instituted, controlled and co-ordinated at a central administrative level.

5.2.1 A system of accreditation should be introduced into the South African health system to determine whether hospitals meet the set requirements. Evaluating the quality of care should be compulsory, a pre-requisite to determining the allocation of resources to the various institutions. Thus, the extent to which a hospital is supported by government funding should be based on the results of a quality assurance programme. This concept is based on the accreditation system of the Americas (J.C.A.H., Lanham, 1981).

5.2.2 Establish a multidisciplinary Quality Assurance Committee in order to improve, maintain and evaluate excellence in the health service.

5.2.3 Establish a Nursing Quality Assurance Committee comprising nursing faculty (as peer and not consultant) and service, to maintain nursing excellence.

5.3 Set up quality assurance programmes for both the acute head injury unit and the rehabilitation setting (Stevenson, 1979). As the extent of care is superior to the norm of care throughout the study, both concepts must be examined (vide p307). Furthermore, the researcher emphasises that the quality assurance programme that is established must be based on a concurrent review mechanism. Had the researcher undertaken retrospective auditing the results of the research would have been inaccurate, as care was recorded as having been performed yet it was not undertaken. This is an interesting finding in the light of the statement by Rosenfold (Plummer, 1976) and Sultan (1980) regarding the correlation between adequate documentation and the quality of care.

5.4 A multidisciplinary or uni-disciplinary approach may be adopted, depending on which aspects of care are to be audited. Nurses must check the quality of nursing care (Eddy & Westbrook, 1975; Huszynski, 1977).
6. **THE MULTIDISCIPLINARY TEAM**

The concept of the multidisciplinary approach to the comprehensive care of the head injured patient must become a reality. The central member of the team is the patient and he/she must be encouraged and allowed to do as much as possible for himself (Edmonds-Hill, 1977).

Recommendations in relation to the multidisciplinary team:

6.1 Define the role of the members of the multidisciplinary team. Team members must play a more significant part in the care and rehabilitation of the head injured patient from injury until ultimate recovery. The staff included in the team must be of the highest quality and integrity (Hirschberg, et al., 1976: 5).

6.2 The leader of the team is the physician or physiatrist.

6.3 The team physician, primary nurse and allied health personnel need to accept responsibility for the patient from day of admission throughout the rehabilitation process.

6.4 All team members should assess and evaluate the patient's needs on admission and at regular intervals.

6.5 Document all assessment and progress in the patient's file for use by the multidisciplinary team.

6.6 The team should meet on a regular basis, once a week, to discuss the patient's progress towards recovery. This will allow for dynamic planning, continuous comprehensive assessment of the patient's needs and response to intervention.

6.7 The programme co-ordinator should be the primary nurse, nurse co-ordinator, rehabilitation liaison officer or clinical nurse specialist (vide p22/56).

6.8 The co-ordinated care concept may be introduced to aid team effectiveness (Riley & Moses, 1977).

6.9 The multidisciplinary health team need to share in the support of the patient and family, who must be seen at regular intervals.

6.10 Allow the patient and the family to participate in the team.
7. COMMUNICATION

As Potanick (1966:17) states: "Consideration of the patient as a human being is as important as the expert performance of nursing techniques."

This is especially true of the head injured patient who is unconscious and dependent on the nurse, the multidisciplinary team and significant others to maintain contact with the environment. The study shows that there is a distinct lack of communication between the patient, family, nursing personnel and health team (vide p357/314/320). Effective communication needs to be established.

7.1 INTERDISCIPLINARY COMMUNICATION

In order to improve communication between nursing, medical and allied health personnel the following is recommended:

7.1.1 Create additional staff posts, that include all personnel required for comprehensive care of the head injured patient.

7.1.2 Encourage the appropriate multidisciplinary personnel to discuss the patient's progress:
   a. At daily ward rounds.
   b. At weekly case conferences where an agenda is available.

7.1.3 Standardise referral circumstances. After assessment of the patient using the data sheets for the day of admission (APPENDIX E1), the day of observation (APPENDIX E2) and the pre-injury assessment (APPENDIX E6), the nurse must refer the patient and family to the social worker for counselling and statutory support (Evans, 1981).

7.1.4 The nurse should co-ordinate the activities of the health team (Sterle, 1982) (vide p22/56).

7.1.5 Allow for more effective multidisciplinary communication by establishing the following nursing posts:

   Clinical nurse specialist, Practitioner teacher.
   Nurse co-ordinator, Primary nurse.
   Nurse practitioner, Rehabilitation liaison officer.

7.1.6 The introduction of primary nursing will improve communication and patient advocacy by allowing a one to one relationship (Chilton, 1982).
Effective communication at all times permits the nurse to carry out the nursing process to the maximum benefit of the patient and family.

Improve communication by the use of therapy communication sheets.

Record the patient's progress and permit the multidisciplinary team access to the records.

**7.2 STAFF, PATIENT AND FAMILY COMMUNICATION**

Goldstone (1980: 248) reports that:

"... a patient's psychological, social ... requirements are largely met by nurses whilst providing the care involve[d] in feeding, bathing, ambulation and other physical and technical procedures."

Minimal communication takes place between the staff, the patient and the family (vide p257/314/320). Possible reasons for this include:

- Inadequate training in communication skills,
- Lack of knowledge regarding head injured patients,
- Inability to answer patient and family questions,
- Inability to communicate with an unconscious patient,
- Disregard of human dignity and interest,
- No time is allocated in the therapeutic plan to talk to the patient and/or family.

The researcher recommends:

**7.2.1 Effective interpersonal relationships are necessary for effective communication.** It is important that the nurse remain unstressed, good-natured, non-aggressive and caring as the nurse's behaviour may influence the patient's attitude and interaction (Troockman, 1978).

**7.2.2 Communication skills be taught and emphasised during the basic training of all health personnel.**

In order to avoid confusion and conflicting statements, the multidisciplinary team must decide what information is to be given to the family.

**7.2.4 The introduction of the Clinical nurse specialist and the primary nurse will improve communication with the patient and family.**

**7.2.5 Consult the family on a formal basis as soon after admission as possible and at regular intervals thereafter.**
7.2.6 Allow the family time to ask questions. Answer questions as honestly and politely as possible. Avoid the use of emotive language such as 'cabbage' or 'vegetable'.

7.2.7 Establish a basis for communicating with the patient and family. Interview the family or friends utilizing the pre-injury assessment (APPENDIX E6) in order to:
   a. Assess the patient's needs, progress and recovery.
   b. Enable the nurse to counsel the patient and family.
   c. Aid in re-orientation of the patient (Troockman, 1978).

7.2.8 The speech therapist as part of her evaluation of the patient must assess and document the patient's ability to communicate after injury and at regular intervals.

7.2.9 Establish a means of communicating (verbal or non-verbal) with the patient as soon as possible after the injury.

7.2.10 Obtain and utilize material or equipment for non-verbal communication when necessary (Troockman, 1978):
   a. Alphabet blocks, charts or cards.
   b. Magnetic writing boards.
   c. Plastic boards and felt tip pens.
   d. Prepared drawings describing patient needs.
   
   Note: Do not use chalkboards in the presence of a tracheostomy.

7.2.11 Compile a chart for recording the best way of communicating with the patient. Place it above the patient's bed for maximum effect (Edmonds-Hill, 1977).

7.2.12 Construct written signs stating:

   **DO NOT DISCUSS PATIENT AT BEDSIDE**

   Place this over the bed of the unconscious or disorientated patient.

7.2.13 Commence reality orientation by using the patient's first name when talking to the patient.

7.2.14 Include time to talk to the patient in the therapeutic programme.

7.2.15 Prior to performing any intervention on the patient inform the patient.
   Talking to the patient may gain his co-operation and improve body awareness (Troockman, 1978).

7.2.16 Refer the patient and family to the head injury support group and HEADWAY for support, counselling and teaching.
7.3 HEAD INJURY INFORMATION BUREAU

A 'Head Injury Information Bureau' must be established. This information service should be co-ordinated by a registered nurse in consultation with other health professionals or by HEADWAY. Information regarding the following should be available:

7.3.1 Facilities for head injury care and rehabilitation.
7.3.2 Organisations able to offer physical, psychological, social, financial, educational and job assistance.
7.3.3 Educational material.
   a. Booklets similar to those of Marshal, et al. (1981) concerning head injuries could be made available.
   b. Literature should be available in all units caring for head injured patients.

8. THE MANAGEMENT OF THE HEAD INJURED PATIENT

In order to improve the management of the head injured patient the following recommendations are suggested:

8.1 A specific head injury unit must be established at The Hospital.

8.2 IT IS ESSENTIAL THAT STANDARDISED WRITTEN PROTOCOLS FOR ALL PHASES OF HEAD INJURY MANAGEMENT BE COMPILED

The protocols must specify the following with regard to the comprehensive care of the head injured patient:

8.2.1 An environment conducive to recovery.
8.2.2 The role of the various health professionals concerning the patient and significant others.
8.2.3 The specific management of the patient with regard to:
   a. The method of assessing patient status.
   b. Resuscitation measures.
   c. Maintenance of circulation.
   d. Airway maintenance.
   e. Prevention of aspiration.
   f. Maintenance of intracranial pressure within normal limits.
Factors pertaining to the level of consciousness of the patient.

8.2.4 Preventive rehabilitation.

8.2.5 The method of documenting findings and intervention.

In order to improve the quality of service in The Hospital and referring hospitals protocols of management such as those of The Neurosurgical Department, The Institute of Neurological Sciences, Glasgow must be available. The standardisation of practice will decrease confusion, improve the quality of comprehensive care and affect the morbidity and mortality of head injured patients. As there is a lack of standardised protocols of management the researcher has designed and compiled a set of protocols that may be issued as a guide to the management of head injured patients (APPENDIX T). The following references were used to compile the management protocols: Brunner and Suddarth (1974), Ambrose, et al. (1976), Comolli and Zawo (1981), Jannett and Tendalo (1981), Johnson, et al. (1981), Rimel, et al. (1981b), Conway-Ruskowski (1982), Guzzi, et al. (Ed.) 1982), Nicas (Ed.) 1982), Jannett (1983), Levits and Collier (1983: 1710-1715), Budassi and Darbor (1984), Purchese and Allen (1984) and Lipchitz.

8.3 QUALITY ASSURANCE MUST BE INTRODUCED

The setting of standards, the implementation, documentation and evaluation of prescribed practice will improve the quality of care, morale and esprit de corps of the unit staff and act as a motivating factor (Rush-Prashyram - St. Luke's Medical Center, 1976). Standards, as described in the Policy Manuals should be reviewed periodically to keep abreast of current practice and must be maintained by all staff in the unit. Methods of evaluating care need to be documented.

8.4 THE INTRODUCTION OF A 'MULTIDISCIPLINARY POLICY MANUAL'

In order to maintain and improve the quality of care of the head injured patient a Multidisciplinary Unit Policy Manual must be available.

8.4.1 The unit/institution needs to devise a standardised Unit Policy Manual. The manual issued by the Department of Neurosurgery, Whimtworth Hospital, Durban, Natal is an example.

8.4.2 Unit policy needs to be compiled by the multidisciplinary team.
The Unit Policy Manual must include:

- The role of the health professionals in the unit,
- The scope and limitations of practice of the various multidisciplinary team members,
- The prescribed protocols for management of the patient,
- Policy related to the specific unit:
  - The multidisciplinary team.
  - The admission policy.
  - The admission procedure.
  - Methods of resuscitation.
- Standards of practice concerning:
  - Patient assessment.
  - Preventive rehabilitation.
  - Positioning of the patient.
  - Bronchial toilet.
  - Ventilator management.
  - Nutrition and hydration of the patient.
  - Reducing/controlling intracranial pressure.
  - Any other information that may be relevant to the particular unit.

The Unit Policy Manual should be issued to all unit staff during their period of orientation. The use of verbal instruction only, for the issuing of unit policy, is inadequate as communications may be omitted, misinterpreted, result in confusion and inappropriate or ineffective intervention.

Should a multidisciplinary unit policy manual not be available then the Nurse-In-Charge must ensure that unit nursing policy is documented in the Nursing Policy Manual (vide p461).

8.5 THE PATIENT CENTRED MULTIDISCIPLINARY TEAM APPROACH MUST BECOME A REALITY

8.5.1 Encourage attendance of allied health personnel at ward rounds, on a daily basis, to assess the patient's needs, rather than relying on the nursing staff for referrals (vide p417/418).

8.5.2 Permit the nurse to accept her rightful role in the health team.
NURSING THE HEAD INJURED PATIENT

9. GENERAL CONSIDERATIONS

The recommendations regarding the nursing of the head injured patient are based on the results of the assessment of the quality of care received and are directed at improving standards of practice and thereafter maintaining nursing excellence.

9.1 INCULCATE PROFESSIONAL RESPONSIBILITY AND ACCOUNTABILITY IN NURSE PRACTITIONERS

a. Impress upon the nurse the scope of nursing practice.

The scope of practice permits the nurse, by means of the nursing process and using a comprehensive holistic approach from the time of admission until ultimate recovery, to ensure that quality care is provided for head injured patients (Government Gazette No. R.298 of 30 November 1984). The S.A.N.C. has established fundamentals of care that the nurse must utilize to set criteria and standards of practice and to establish quality assurance programmes in order to maintain nursing excellence. Each registered nurse has a responsibility in this regard. The professional status of the nurse, as peer in the multidisciplinary team is determined by her ability to practice to the fullest extent within her scope of practice. The scope of practice must be elaborated on and not limited further by lack of scientific knowledge and/or clinical expertise. Ignorance of, or denying her professional capability that results in the lowering of the nurse's professional status, is regarded by the researcher as negligent of professional responsibility.

b. Instil ethically acceptable behaviour in nursing staff members.

The code of conduct of the S.A.N.C. (Government Notice No. R.387 of 15 February 1985 "Rules setting out the acts and omissions in respect of which The Council may take disciplinary steps.") must be brought to the attention of all nursing staff.

Comprehensive quality care is the right of the patient (Searle, 1982). The registered nurse must guard against negligence with regard to the head injured patient (vide p391). Failure to meet the degree of care demanded by the circumstances is tantamount to incompetence (Dirchelo, 1986).

Nurses must be referred to Government Notice No. R387 of 15 February 1985 Chapter 2 Sections 3, 4 and 5 in order to prevent the following from occurring:
Chapter 2 Section 3 and 4:
Any infringement of the scope of practice of the nurse;
Disrespect of patient dignity and rights;
Incorrect positioning of the patient;
Incorrect restraint of the patient;
The development of decubitus ulcers;
Ineffective communication;
Ineffective discharge planning;
Insufficient teaching of patient and family;
In the opinion of the researcher inadequate knowledge or clinical expertise is tantamount to negligence.

Chapter 2 Section 5:
Inappropriate recording in relation to the assessment of the patient's clinical status (Vide p287).

Under no circumstances must care that is not performed be recorded as having been undertaken.

Recommendations with regard to misdemeanours of patient assessment include:
- Stress the importance and significance of performing observations in all education programmes.
- Staff education regarding the need for honest, accurate, uniform observation is essential for excellence in care. Incorrect recordings may affect patient management and outcome.
- Report any dishonest recordings. The said individual must appear before the In-house Nursing Disciplinary Committee.
- Include the standardised protocols for performing the various observations in the Nursing Policy Manual. The criteria as listed on the schedules and standards of practice can be used for this purpose (APPENDIX I).
- Determine the prescription and frequency of observations by the needs of the individual patient, the patient dependency rating, the doctor's orders and the sister's discretion (Vide p127/155).
- Stress the need for interdisciplinary communication with regard to reporting changes in patient status to the relevant personnel (Vide p391).
- Utilize the neurological observation chart prepared by the researcher and Professor R. Lipchitz in 1982 for the purpose of documenting findings effectively (Abelson, 1982).
- Allow student nurses to work under the direct supervision of a registered nurse.
c. Registered nurses through their clinical expertise, knowledge and professional practice must be role models.

d. Introduce an in-house Nursing Disciplinary Committee, consisting of nursing faculty members, nursing service managers, clinical nurse specialists and registered nurses to deal with dilemmas of practice. Staff should be informed that it is their moral obligation to report misconduct to the charge nurse, who will then follow the correct channels of communication. The in-house disciplinary committee will decide, according to the offence, what intervention or action is necessary. Incidents of misconduct should be recorded in the staff member's personal file.

9.1.2 ENLARGE THE NURSE'S ROLE IN THE REHABILITATION SETTING

In order to realise the full potential of the scope of practice of the nurse include the following in the nurse's domain:

a. To acquire knowledge, skills and clinical expertise regarding rehabilitation of the head injured patient.

b. To maintain quality assurance within the rehabilitation environment.

c. To facilitate the attainment of optimum health for the individual, the family and the community in the execution of the nursing regimen.

d. To allow the rehabilitation liaison officer to assess the patient prior to placement.

e. To commence rehabilitation at the time of admission of the patient.

f. To utilise the nursing process to implement a preventive rehabilitation programme.

g. To promote self-care activities and maximum independence.

h. To implement a rehabilitation programme and techniques to promote rehabilitation.

i. To be a member of the multidisciplinary team.

j. To refer the patient to allied health personnel.


l. To teach the patient and family (De Villiers, 1981; Pölder, 1974).

m. To ensure effective discharge planning (Edmonds-Hill, 1977).

The role of the nurse is multifold (vide p51). The scope of the nurse in the rehabilitation field is only limited by her knowledge and clinical expertise. According to the researcher, the nurse has not been credited with her rightful role in the rehabilitation setting. Medical and paramedical professionals are regarded as the rehabilitation experts. Yet what about the nurse who cares for the patient on a daily basis, plans and co-ordinates the therapeutic programme and is best able to assess the
patient's recovery, physical, psychological, educational and economic functioning in the unit.

9.1.3 ASSURING NURSING QUALITY

a. Use the expert knowledge and skills of nurse educators and nurses in practice to establish criteria and standards of practice for the management of the head injured patient. The instruments of the research (APPENDIX E, I, J, K, T) may be utilized in this regard.

b. Evaluate the quality of care regularly as part of a quality assurance programme (Wiseman, 1977(a)) (vide p71). The researcher has proved that although care is prescribed it is not always performed therefore it is essential to evaluate practice (Kron, 1976; Jernigan & Young, 1983).

c. Establish a means for evaluating the quality of care.

One of the following may be used:
(i) Qualpacs (Wandelt & Ager, 1974).
(ii) Slater Nursing Competencies Rating Scale (Wandelt & Stewart, 1975).

(iii) THE QUALITY ASSURANCE MODULE

The researcher suggests the introduction of the quality assurance methodology utilized in this study, as the principles of quality care have been established. The criteria detail is that of the clinical teaching department of The Hospital and references where no protocols were available. In the opinion of the researcher if nurses are taught to perform at the micro-level, then tools such as those that assess the student's ability at that level must be available. For the purpose of the research the researcher used all the relevant schedules to assess the quality of care.

In as far as time and detail were concerned, no difficulty was experienced by the raters completing the schedules. The length of time taken to assess the effectiveness of care using these schedules may vary from 30 minutes to six hours depending on the purpose of the evaluation and which aspects of care are to be evaluated. The researcher believes that where time is limited, six hours and 983 items may be excessive. Although this has not been tested, perhaps decreasing the length of time and the number of items may be just as effective (vide p429).
The researcher recommends that the module be used:

- To set standards for quality assurance and the management of the head injured patients.
- As a means of concurrent auditing of care in both neurological and general wards, utilizing the respective schedules.
- To assess staff competency the module may be incorporated into a system of merit rating, for the employment and promotion of staff working in neurosurgical units.
- To assess learning needs of registered and non-registered nursing personnel.
- As a teaching strategy.
- As a means of student assessment for S.A.N.C. requirements.

The criteria, standards of practice and schedules can be included in the new system of objective assessment that is being introduced in The Hospital. Critical items of the relevant schedules may be incorporated to allow for a more objective means of assessment than is stated at present. As an example the following is stated: 'Adequate prevention of pressure sores'. (B.G.A., 1985). How does one deliver 'Adequate' objectively? The criteria, standards of practice and schedules (APPENDIX I, J) will be of assistance in this regard.

**EXAMPLE:** An assessment of the student's ability to deliver comprehensive quality care.

The prescription for care will be affected by the status of the patient. Although in a two hour period it is possible to evaluate care relating to patient independence for this example only the evaluation of care in relation to patient assessment and patient care has been selected.
## TABLE 9.2

Number of schedules that could be used to evaluate care received over a two hour period

<table>
<thead>
<tr>
<th>Modality of care</th>
<th>Frequency (hourly)</th>
<th>No. of schedules</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient assessment:</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>Neurological observations:</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Level of consciousness</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Pupils</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Limbs</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Vital signs:</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>Blood pressure</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Pulse</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Respiration</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Temperature</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Patient care:</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Eye care</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Oropharyngeal care</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Bronchial toilet</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Change of position</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>18</strong></td>
<td></td>
</tr>
</tbody>
</table>

Therefore in a two hour period it is possible to evaluate student performance objectively.

- To maintain, improve and examine the quality of care the total module or limited assessment may be utilized (see below).

The research module could form the foundation of a computer-based quality assurance programme.

The researcher believes that the following, although not tested as yet, will allow for effective objective evaluation of care:

1. Prior to assessing the student the assessor must feed the individual patient dependency rating (APPENDIX E 3:1) into the computer.

2. The computer, using random sampling, selects the following:
   - Schedules relevant to the particular patient dependency.
   - A pre-determined number of items per schedule.

   The sampling is performed in such a way as to select:
   - Items on the preparation and commencement of the schedule;
   - Items from the main body of the schedule;
   - Items from the conclusion of the schedule.

   This random selection of schedules and items is advantageous as:
The total schedule need not be used; sampling remains objective; staff may be assessed frequently using the same format, as the selection of criteria is at random.

Although those to be assessed know which aspects of care may be examined, they do not know which schedules or forms may be selected.

The researcher wishes to experiment further regarding this concept.

c. The researcher suggests that this presentation of the comprehensive nursing of the head injured patient be used as a guide for establishing and improving nursing practice. A copy of the management protocols (APPENDIX I), standards of practice (APPENDIX J, K), the module (APPENDIX I) and nursing care plan (vide p432) must be available in the Nursing Policy Manual.

9.1.4 ESTABLISH STANDARDS OF PRACTICE FOR THE COMPREHENSIVE CARE OF THE MODERATE AND SEVERELY HEAD INJURED PATIENT

a. The South African Nursing Association (S.A.N.A.) needs to follow the example of the American Nursing Association (A.N.A.) with regard to the setting of standards to maintain nursing excellence (A.N.A., 1973, 1974, 1975 a/b, 1976, 1977 a/b, 1985). The S.A.N.A. should undertake research, either through a central committee or the special interest groups into standards of practice. Thereafter standards of practice that establish the fundamentals of quality care relevant to the South African situation should be published. This will allow institutions to use these fundamental principles to set criteria and standards of practice in accordance with hospital policy and thereby maintain nursing excellence.

b. The practice guidelines (APPENDIX I), patient care standards (APPENDIX K) and nursing care plan may be utilized for this purpose.

c. As the nursing process promotes nursing excellence (Ramsy, 1973; Tucker, et al., 1984), establishes the quality assurance programme and protocols of management according to the nursing process and within the framework of the scope of nursing practice (Government Gazette No. R2598 of 30 November 1984) (vide p49).

I. The first step of the nursing process is establishing nursing diagnoses.

Regular assessment of the patient, by the primary nurse, will establish nursing diagnoses and predicts real and potential patient problems. The researcher believes that the presentation of a logical, simple, comprehensive care plan based on the needs of the
Individual patient will improve the quality of care received by the patient. To this end the researcher has compiled such a plan based on the nursing process. Nursing diagnoses as suggested by Carpenito (1983) and DuGas (1983: 125) have been modified. (The following references have been used to compile the nursing care plan Cross, 1977; Tyson, et al., 1978; Davis & Mason, 1979; Coplesome, 1980; Kunkel, 1981; Snyder & Jackie, 1981; Hillman, 1982; Nikes (ed.), 1982; Ijantom, 1983; Vlok & Lochner, 1983; Purchese & Allan, 1984; Tucker, et al., 1984; Parsons, et al., 1985.)

The researcher intends this care plan to be used as a guideline, the basis for nursing head injured patients. The nurse-in-charge, using a problem-oriented nursing record may modify the care plan according to the needs of the patient.
<table>
<thead>
<tr>
<th>NURSING DIAGNOSIS</th>
<th>POTENTIAL PROBLEM (RELATED TO CAUSE)</th>
<th>PLANNED INTERVENTION</th>
<th>EXPECTED OUTCOME</th>
</tr>
</thead>
<tbody>
<tr>
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<td>POTENTIAL PROBLEMS (RELATED TO CAUSE)</td>
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<tr>
<td>Nursing Diagnosis</td>
<td>Potential Problems (Related to Causes)</td>
<td>Planned Intervention</td>
<td>Expected Outcome</td>
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<td>-------------------</td>
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</tbody>
</table>
| Maximal stimulation. | Provide therapeutic environment by avoiding or minimizing factors that may precipitate an increase in intracranial pressure:  
- Intense stress.  
- Head down/patent or flat position.  
- Hypertension.  
- Hypoxia.  
- Hypothermia.  
- Hypoglycemia.  
- Increased intracranial pressure.  
- Isotonic muscle contractions.  
- Pain.  
- Physiotherapy.  
- Swelling.  
- Tearing of blood vessel.  
- Trauma of the neck.  
- Tight tracheotomy/thoracostomy tape.  
- Tetanus.  
- Ventilator malfunction.  
- Ventilator resistance.  
- Decreased extraneous self-avoid emotionally distant.  
- Quick, and assess pr.  
| Decreased cerebral perfusion:  
Cerebral ischemia related to:  
Intracranial hypertension.  
Systemic hypotension.  
Loss of cerebral autoregulation.  
Space occupying lesion. | Maintain and assess intracranial pressure and vital signs.  
Maintain blood pressure within patient's norm.  
Ensure adequate oxygenation.  
Rise head of bed to increase venous drainage from head.  
Administer fluid according to doctor's order.  
Administer medications according to doctor's order.  
Notify physician of any change in patient's status.  | Maintain normal cerebral perfusion.  
C.P.P. = M.A.D.P. - H.I.G.P.  
G.P.P. = ± 20 mm.Hg  
Maintain cerebral perfusion ≥ 30 mm.Hg.  |
### Nursing Diagnoses

#### Potential Problem (Related to Cause)

**Intracranial blood:**
- Intracerebral hematoma
- Subdural hematoma
- Subarachnoid blood
- Intraventricular bleed
- Intracerebral bleed

**Monitor and record neurological status and vital signs every 15-60 minutes.**
- Note classic sign of extradural hematoma.
- Change and restlessness.
- Clinical manifestations of raised intracranial pressure.
- Dilation ipsilateral pupil.
- Administer emergency medications such as osmotic diuretic agents and treatment as ordered.
- Prepare patient for operative procedure.
- Witness informed consent.
- Notify physician immediately of any change in neurological status/vital signs.

**Alteration in cerebral function:**
- Seizure activity related to:
  - Cerebral edema
  - Increased intracranial pressure
  - Intraventricular bleed

**Implement seizure precautions:**
- Oxygen, emergency equipment and medication available.
- Bed height at lowest level.
- Pulled siderails up at all times when patient alone.
- Prevent precipitating factors (fever, hypoxia, electrolyte disturbances, lack of sleep, noxious stimulation).
- Monitor and record seizure activity:
  - Type of seizure.
  - Duration.
  - Source.
  - Presence or absence of:
    - Convulsion
    - Incontinence
    - Eye deviation.

**Seek cause of seizure activity, administer anti-convulsant medication as prescribed.**

**Record effects and side effects of medication given.**

**Control and prevent status epilepticus.**

**Notify physician of any precipitating factors that exist and of seizure activity.**

**Reassure and support patient and family.**

**Discharge planning regarding seizure activity.**

---

#### Expected Outcome

**Early detection of intracranial hemorrhage.**

**Absence or resolution of uncal herniation.**

**Maximum neurological functioning.**

**Absence of seizures.**

**Control of seizure activity.**

**Education and counselling of patient and family.**
<table>
<thead>
<tr>
<th>Nursing Diagnosis</th>
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<td>POTENTIAL PROBLEMS (RELATED TO OAUP)</td>
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<td>EXPECTED OUTCOME</td>
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<td>Monitor patient toward maximum and most effective outcomes.</td>
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<td></td>
<td>Encourage and reassure patient.</td>
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<td></td>
<td>Plan, instruct, demonstrate, and evaluate patient/family's demonstration of needed information for maximal independent functioning.</td>
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<td></td>
<td>Appropriate discharging planning.</td>
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<tr>
<td></td>
<td>Refer to occupational and community resources.</td>
<td></td>
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</tbody>
</table>

- **Potential Problems**: Related to OAUP
- **Planned Intervention**: Strategies to prevent observation
- **Expected Outcome**: Specific goals and expected outcomes

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<table>
<thead>
<tr>
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<th>EXPECTED OUTCOME</th>
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- **Potential Problems**: Related to OAUP
- **Planned Intervention**: Strategies to prevent observation
- **Expected Outcome**: Specific goals and expected outcomes
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<th>Expected Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Anaemia, Ataxia, Central nervous system dysfunction, Gastrointestinal, General nerve dysfunction, Hypothermia, Pulmonary embolism, Pulmonary oedema.</td>
<td>- Respiratory rate, rhythm, volume. - Skin colour, urination, temperature. - Signs of respiratory failure. - Presence of cyanosis. - Clinical features of deep vein thrombosis and pulmonary embolism. - Auscultate chest bilaterally to detect respiration or obstruction. - Check results of investigations. - Arterial blood gases. - Chest X-ray.</td>
<td>Arterial blood gas values: pH 7.35 - 7.44, PO2, 90 - 100 mm.Hg.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Keep tracheal dilator at bedside. Tape over tubes (one side, one larger and one smaller) to head of bed. Keep suction equipment and resuscitation bag with appropriate connection at bedside.</td>
<td>SB -1 - +1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Prevent humidity to inspired air. Initially suction tracheostomy frequently then less often as amount decreases. Instruct anaesthetist - insert deeply for tracheostomy than for intubation. Maintenance sump technique during intervention.</td>
<td>Prevent increases in intracranial pressure, hypoxia and hypotension. No irritation of cornea. Decrease coughing spasms and risk of marginal damage. Absence of infection.</td>
</tr>
<tr>
<td></td>
<td>Grunting/whist longing.</td>
<td>Humidify inspired air. Irrigate tubes with sterile saline solution (0.9% sal) if secretions are thick.</td>
<td>Easily removable secretions.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maintain sump technique during intervention.</td>
<td></td>
</tr>
<tr>
<td>Nursing Diagnosis</td>
<td>Potential Problems (Related To Cause)</td>
<td>Planned Intervention</td>
<td>Expected Outcomes</td>
</tr>
<tr>
<td>-------------------</td>
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<td>-------------------</td>
</tr>
<tr>
<td><strong>Dislodgment of Tube</strong></td>
<td>Tie tube securely with twill or umbilical tape. Place square knots, allow only 1 small finger's space between tape and patient's neck. Two people are needed to change tapes, especially with coagulative patients. Do not remove old ties until new ties are securely in place. Maintain patient in order to prevent removal of tube.</td>
<td>Tube secured in site.</td>
<td></td>
</tr>
<tr>
<td><strong>Atmospheric Infection or parietal skin breakdown</strong></td>
<td>Observe secretions for any redness, odor, or draining lesions. Use sterile techniques to suction and care for site. Cleanse site with hydrogen peroxide and sterile water 2-4 hourly and p.r.n. Keep skin/tissue as dry as possible. Prevent soiled sponges. Change tapes as needed. Culture discharge/secretions. Notify physician. Apply antibiotic ointment as ordered.</td>
<td>Absence of sternal infection.</td>
<td></td>
</tr>
<tr>
<td><strong>Possible bronchial stenosis related to</strong></td>
<td>Monitor tube shape and position. Prevent tube dislodgement. Avoid movement or tension of tube when suctioning, cleaning site or changing tapes. Keep cuff inflated when possible. Change tube weekly or according to hospital policy.</td>
<td>Absence of bronchial damage.</td>
<td>Tube movement. High pressure cuff.</td>
</tr>
</tbody>
</table>
## Nursing Diagnosis

### Pneumonia, Pulmonary infection related to: Episodes of normal suctioning system. 
- Repeated tracheostomy suctioning procedure. 
- Breach of aseptic suctioning procedures.

### Potential Problems (Related to Cause)

### Planned Intervention

- Monitor vital signs 2-4 hourly for manifestations of pulmonary infection.
- Change humidification system and ventilator tubing daily and manual breathing bag every 3 days.
- Use sterile distilled water to fill humidifier.
- Ensure suction apparatus at bedside.
- Employ aseptic suctioning techniques.
- Perform frequent oral hygiene.
- Suction tracheal aspiration if infection assessed.
- Change position of patient 2 hourly.
- Control hypothermia.
- Prevent aspiration by: 
  - Safe feeding technique.
  - Infusing fluid prior to feeding.
  - Changing position of nasogastric tube prior to feeding.
- Administer chest physiotherapy.
- Notify physician of abnormality.
- Administer medications as ordered.

### Expected Outcome

- Absence of clinical or radiological evidence of pneumonia or pulmonary infection.
- Adequate patient. 
- Chest clear.

### Hypoxia

### Potential Problems (Related to Cause)

### Planned Intervention

- Monitor blood gas results 15-20 minutes after ventilation settings changed.
- Monitor for signs and symptoms of hypoxia. 
- Check arterial Pao2, level.
- Notify physician.

### Effective mechanical ventilation. 

- Maintenance of ventilation perfusion ratio.
- Adequate oxygenation.

### Hypoventilation

### Potential Problems (Related to Cause)

### Planned Intervention

- Monitor:
  - Respiratory rate 1-1 hourly. 
  - Blood gases. 
  - Ventilator settings. 
  - Breathing sounds.
- Augment chest physiotherapy. 
- Notify physician.

### Expected Outcome

- Pao2 and Pao2 within normal limits.
- Full lung expansion.
- Prevention of atelectasis.

### Hyperventilation

### Potential Problems (Related to Cause)

### Planned Intervention

- Continuous assisted or controlled ventilation. 
- Monitor Pao2 levels.
- Ensure adequate dead space.
- Administer sedation as ordered. 
- Administer medications (sedation) as ordered.

### Expected Outcome

- Maintain normal blood gases. 
- Maintain Pao2 25-30 mmHg, to decrease I.O.P.
<table>
<thead>
<tr>
<th>NURSING DIAGNOSIS</th>
<th>POTENTIAL PROBLEMS (RELATED TO CAUSE)</th>
<th>PLANNED INTERVENTION</th>
<th>EXPECTED OUTCOME</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Prognostically decrease P10, to below 0.5 within 24-48 hours of initiating mechanical ventilation.</td>
<td>Notify physician.</td>
<td>Acute adequate oxygenation.</td>
</tr>
<tr>
<td></td>
<td>Institute other resuscitative measures (as ordered).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Airway obstruction related to:</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Intubation, mechanical ventilation.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bronchospasm, Excessive accumulation of secretions.</td>
<td>Keep upper airway patent.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Instruct patient to cough.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Instruct patient to perform towel suction.</td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Signs and symptoms of tension pneumothorax.</td>
<td>- Chest tube insertion.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Arterial blood gases.</td>
<td>- Oxygen insufflation.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Chest x-ray confirms.</td>
<td>- Administration of mechanical ventilation.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Controlled use of mechanical ventilation.</td>
<td>- Assist with insertion of chest tube.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Monitor ventilator N/P hourly.</td>
<td>- Presence of air leaks.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Functioning ventilator system.</td>
<td></td>
<td>Maximum ventilator function.</td>
</tr>
<tr>
<td></td>
<td>- Setting of alarm system.</td>
<td>Ventilator delivers required volume of humidified oxygen.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Correct ventilator settings.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Delivery of accurate oxygen concentration.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Humidity, temperature.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Tube attachments secure.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Patency of tubes.</td>
<td></td>
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<tr>
<td>NURSING DIAGNOSIS</td>
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<td>PLANNED INTERVENTION</td>
<td>EXPECTED OUTCOME</td>
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<tr>
<td>Nursing Diagnosis</td>
<td>Potential Problems (Related To Cause)</td>
<td>Planned Intervention</td>
<td>Expected Outcome</td>
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<td>---------------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------</td>
</tr>
<tr>
<td>Associated injury, excess acid</td>
<td>- Neurological status, vital signs.</td>
<td>Adequate weight gain.</td>
<td></td>
</tr>
<tr>
<td>administration, stress</td>
<td>- Signs and symptoms of gastric irritation -</td>
<td>Adequate stomatosus fat.</td>
<td></td>
</tr>
<tr>
<td>CNS factors</td>
<td>- Gastritis, ulcers, hematemesis.</td>
<td>Normal hemoglobin level.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Test nasogastric aspirate/suction for presence of blood.</td>
<td>Monitor rate and rhythm.</td>
<td></td>
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<tr>
<td></td>
<td>- Test stools with hematocrit 1 X per week.</td>
<td>Monitor intake and output.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Administer medications as ordered.</td>
<td>Adequate weight gain.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Antacids, Simetidine.</td>
<td>Adequate nutritional status.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Administer with as ordered.</td>
<td>Adequate nutritional status.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Decrease patient anxiety.</td>
<td>Adequate nutritional status.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Notify physician if any abnormality occurs.</td>
<td>Adequate nutritional status.</td>
<td></td>
</tr>
<tr>
<td>Poor nutritional status related to</td>
<td>- CNS cause.</td>
<td>Adequate nutritional status.</td>
<td></td>
</tr>
<tr>
<td>Associated injury, excess acid</td>
<td>- Increased feeding rate of nasogastric tube.</td>
<td>Adequate nutritional status.</td>
<td></td>
</tr>
<tr>
<td>administration, stress</td>
<td>- Perioperative hyperalimentation.</td>
<td>Adequate nutritional status.</td>
<td></td>
</tr>
<tr>
<td>CNS factors</td>
<td>- Offer small feedings every 2-3 hours.</td>
<td>Adequate nutritional status.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Make sure patient is comfortable.</td>
<td>Adequate nutritional status.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Encourage patient to take fluids.</td>
<td>Adequate nutritional status.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Monitor intake and output.</td>
<td>Adequate nutritional status.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Monitor rate and rhythm.</td>
<td>Adequate nutritional status.</td>
<td></td>
</tr>
</tbody>
</table>

Note: The table continues with similar entries for other nursing diagnoses and potential problems, followed by planned interventions and expected outcomes.
<table>
<thead>
<tr>
<th>Nursing Diagnosis</th>
<th>Potential Problems (Related to Cause)</th>
<th>Planned Intervention</th>
<th>Expected Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluid volume deficit</td>
<td>Inadequate fluid intake, Inadequate humidiﬁcation of inspired air, Diabetes insipidus.</td>
<td>Administer fluid according to physician’s prescription, Calculated and replace ﬂuid and electrolyte requirements daily according to needs of the patient, Ensure patient receives prescribed fluid and electrolyte requirements, Monitor: - neurological status, - vital signs and CVP, - signs of dehydration/overhydration, Monitor and record all intakes and output 1-6 hourly, Administer ﬂuids via central or peripheral route(s), Administer medications as ordered by physician: - normal saline, - D5W, - electrolytes, Monitor effects and side effects, Monitor serum electrolytes as ordered hourly/daily/weekly. Monitor hemoglobin and hematocrit.</td>
<td>Maintain body fluid homeostasis. Fluid intake ≥ 1500 mL/24 hours, Fluid output ≥ 1500 mL/24 hours. Maintain electrolyte balance, Potassium (3.5 - 5.0 mEq/L), Sodium (135 - 145 mEq/L), Calcium (8.0 - 10.0 mg/dL), Maintain normal hemoglobin and hematocrit, Normal values: Adult 12-16 g/dL, Female 10-15 g/dL, Hematocrit: Adult 42-50%, Female 36-46%. Normal serum glucose: 50-150 mg/100 mL, Normal values: Maintains above 310 mg/dL, Normal urine output: 20 mL/hour 60-100 mL/24 hours. Good skin turgor.</td>
</tr>
</tbody>
</table>
### Nursing Diagnosis

<table>
<thead>
<tr>
<th><strong>Alteration in self-care activities</strong></th>
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</thead>
<tbody>
<tr>
<td><strong>Potential Problem</strong> (common to cases)</td>
</tr>
<tr>
<td><strong>Planned Intervention</strong></td>
</tr>
<tr>
<td><strong>Expected Outcomes</strong></td>
</tr>
</tbody>
</table>

#### Bladder incontinence

- Measure and record urine intake and output hourly.
- Test all urine specimens for 80 (± DOX).
- Monitor for signs and symptoms of dehydration.
- Maintain normal serum sodium.
- Notify physician.
- Administer NOF or placebo as ordered.

- Prevent/detect/avoid as early as possible.  
- BU 1010-1021.

#### Inability to maintain general body hygiene

- Assess and record the patient's ability to wash his/her hands/face.
- Encourage, assist, and teach patient to wash his/her hands/face.
- Bath the patient in bed daily if unable to mobilize.
- Use mechanical lift to mobilize patient.
- Mobilize to bathroom if possible by ± 10 days.
- Change as required.
- Clean hair once per week.
- Clean nails when necessary.
- Refer patient to specialist services;
  - Otologist.
  - Dermatologist.

- Independence/Minimal dependence in self-care activities.
- Socially acceptable.
- Maintenance of own body hygiene.

#### Inability to clothe himself/herself

- Assess and record patient's ability to clothe himself/herself.
- Encourage, assist, and teach patient to clothe himself/herself.
- Share patient's clothes with patient.
- Grasp patient's clothes.
- Refer patient to health team members when necessary.

- Independence in dressing.

#### Inadequate eye hygiene

- Assess and record patient's ability to produce tears/clean/ocult/opun/bulk eye.
- Measure eye at frequent intervals for early signs of irritation and inflammation.
- Position patient's head correctly.
- Protect eye from injury and contact irritation.
- Explain eye cleaning procedure to patient.
- Maintain saline technique.
- Reuse eye with saline 2-4 hourly.
- Administer medication as ordered.

- Patient accepts responsibility to perform own eye hygiene.
- Maintain integrity of eyes.
- Eyes free of complications.
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Inadequate oral hygiene:</td>
<td>Anorexia, Dental care, Dirty mouth, Discomfort, Gastritis, Halitosis, Stomatitis. Related to: Confused state, Endotracheal intubation, Multiple trauma, Nil per os, Unconscious state, Use of mechanical ventilation.</td>
<td>Instil Chloramphenicol drops 4 times per day and at night. Lubricate eyes 2-4 hourly using: - Methylcellulose, mineral oil or liquid film tears. Tape eyes if patient not blinking. DO NOT PAD EYES. Notify physician of any signs of infection, ulceration, swelling, oedema.</td>
<td>Clean mouth. Patient able to perform and accept responsibility for own oropharyngeal hygiene.</td>
</tr>
<tr>
<td>Nursing Diagnosis</td>
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<td>-------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Assess patient for presence of bruises, haematoma, abrasions and lacerations. Monitor patient for signs and symptoms of wound infection or wound drainage. Debride and/or cleanse wounds using simple technique. Insert sutures if required. Reapply dressing as ordered. Remove sutures at 5-10 days. Administer medication as ordered – vitamins, antibiotics, drying agents. Notify physician of change in patient status.</td>
<td>Adequate healing of wounds. Abrasions free of infection.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Assess patient for presence of bruises, haematoma, abrasions and lacerations. Monitor patient for signs and symptoms of wound infection or wound drainage. Debride and/or cleanse wounds using simple technique. Insert sutures if required. Reapply dressing as ordered. Remove sutures at 5-10 days. Administer medication as ordered – vitamins, antibiotics, drying agents. Notify physician of change in patient status.</td>
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</tr>
<tr>
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</tr>
<tr>
<td>Protect the skin from moisture and injury:</td>
<td>Protect the skin from moisture and injury:</td>
<td>Protect the skin from moisture and injury:</td>
<td>Protect the skin from moisture and injury:</td>
</tr>
<tr>
<td>- Harden the skin by regular application of spirits.</td>
<td>- Harden the skin by regular application of spirits.</td>
<td>- Harden the skin by regular application of spirits.</td>
<td>- Harden the skin by regular application of spirits.</td>
</tr>
<tr>
<td>- Nurse's nails must be short.</td>
<td>- Nurse's nails must be short.</td>
<td>- Nurse's nails must be short.</td>
<td>- Nurse's nails must be short.</td>
</tr>
<tr>
<td>- Promote cleaning of incontinent patient imperative.</td>
<td>- Promote cleaning of incontinent patient imperative.</td>
<td>- Promote cleaning of incontinent patient imperative.</td>
<td>- Promote cleaning of incontinent patient imperative.</td>
</tr>
<tr>
<td>Massage pressure areas every 2 hours.</td>
<td>Massage pressure areas every 2 hours.</td>
<td>Massage pressure areas every 2 hours.</td>
<td>Massage pressure areas every 2 hours.</td>
</tr>
<tr>
<td>If a decubitus ulcer is present:</td>
<td>If a decubitus ulcer is present:</td>
<td>If a decubitus ulcer is present:</td>
<td>If a decubitus ulcer is present:</td>
</tr>
<tr>
<td>- Monitor for signs of infection.</td>
<td>- Monitor for signs of infection.</td>
<td>- Monitor for signs of infection.</td>
<td>- Monitor for signs of infection.</td>
</tr>
<tr>
<td>- Use aseptic technique to dress decubitus ulcer.</td>
<td>Use aseptic technique to dress decubitus ulcer.</td>
<td>Use aseptic technique to dress decubitus ulcer.</td>
<td>Use aseptic technique to dress decubitus ulcer.</td>
</tr>
<tr>
<td>Record and report presence of decubitus ulcer.</td>
<td>Record and report presence of decubitus ulcer.</td>
<td>Record and report presence of decubitus ulcer.</td>
<td>Record and report presence of decubitus ulcer.</td>
</tr>
<tr>
<td>Record the administration of anti-tetanus prophylaxis.</td>
<td>Record the administration of anti-tetanus prophylaxis.</td>
<td>Record the administration of anti-tetanus prophylaxis.</td>
<td>Record the administration of anti-tetanus prophylaxis.</td>
</tr>
<tr>
<td>Discharge planning regarding subsequent regimen for tetanus prophylaxis.</td>
<td>Discharge planning regarding subsequent regimen for tetanus prophylaxis.</td>
<td>Discharge planning regarding subsequent regimen for tetanus prophylaxis.</td>
<td>Discharge planning regarding subsequent regimen for tetanus prophylaxis.</td>
</tr>
<tr>
<td>Related to:</td>
<td>Related to:</td>
<td>Related to:</td>
<td>Related to:</td>
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<tr>
<td>OND dysfunction.</td>
<td>OND dysfunction.</td>
<td>OND dysfunction.</td>
<td>OND dysfunction.</td>
</tr>
<tr>
<td>Trauma to bladder, kidney at time of injury.</td>
<td>Trauma to bladder, kidney at time of injury.</td>
<td>Trauma to bladder, kidney at time of injury.</td>
<td>Trauma to bladder, kidney at time of injury.</td>
</tr>
<tr>
<td>Urinary tract infection.</td>
<td>Urinary tract infection.</td>
<td>Urinary tract infection.</td>
<td>Urinary tract infection.</td>
</tr>
<tr>
<td>Use of medications.</td>
<td>Use of medications.</td>
<td>Use of medications.</td>
<td>Use of medications.</td>
</tr>
<tr>
<td>Monitor and record vital signs.</td>
<td>Monitor and record vital signs.</td>
<td>Monitor and record vital signs.</td>
<td>Monitor and record vital signs.</td>
</tr>
<tr>
<td>Monitor and record fluid intake and output 1-6 hourly.</td>
<td>Monitor and record fluid intake and output 1-6 hourly.</td>
<td>Monitor and record fluid intake and output 1-6 hourly.</td>
<td>Monitor and record fluid intake and output 1-6 hourly.</td>
</tr>
<tr>
<td>Prevent dehydration from occurring by administering fluids as prescribed.</td>
<td>Prevent dehydration from occurring by administering fluids as prescribed.</td>
<td>Prevent dehydration from occurring by administering fluids as prescribed.</td>
<td>Prevent dehydration from occurring by administering fluids as prescribed.</td>
</tr>
<tr>
<td>Calculate requirements on daily basis.</td>
<td>Calculate requirements on daily basis.</td>
<td>Calculate requirements on daily basis.</td>
<td>Calculate requirements on daily basis.</td>
</tr>
<tr>
<td>Test urine specimen with Labstix.</td>
<td>Test urine specimen with Labstix.</td>
<td>Test urine specimen with Labstix.</td>
<td>Test urine specimen with Labstix.</td>
</tr>
<tr>
<td>Administer medications as prescribed.</td>
<td>Administer medications as prescribed.</td>
<td>Administer medications as prescribed.</td>
<td>Administer medications as prescribed.</td>
</tr>
<tr>
<td>Avoid nephrotoxic drugs.</td>
<td>Avoid nephrotoxic drugs.</td>
<td>Avoid nephrotoxic drugs.</td>
<td>Avoid nephrotoxic drugs.</td>
</tr>
<tr>
<td>- Intravenous phenol.</td>
<td>- Intravenous phenol.</td>
<td>- Intravenous phenol.</td>
<td>- Intravenous phenol.</td>
</tr>
<tr>
<td>- Suprapubic cystotomy.</td>
<td>- Suprapubic cystotomy.</td>
<td>- Suprapubic cystotomy.</td>
<td>- Suprapubic cystotomy.</td>
</tr>
<tr>
<td>(&gt;0.5 ml/kg/hr for adult).</td>
<td>(&gt;0.5 ml/kg/hr for adult).</td>
<td>(&gt;0.5 ml/kg/hr for adult).</td>
<td>(&gt;0.5 ml/kg/hr for adult).</td>
</tr>
<tr>
<td>Values within normal limits.</td>
<td>Values within normal limits.</td>
<td>Values within normal limits.</td>
<td>Values within normal limits.</td>
</tr>
<tr>
<td>1-6 mg./100 ml.</td>
<td>1-6 mg./100 ml.</td>
<td>1-6 mg./100 ml.</td>
<td>1-6 mg./100 ml.</td>
</tr>
<tr>
<td>Serum creatinine.</td>
<td>Serum creatinine.</td>
<td>Serum creatinine.</td>
<td>Serum creatinine.</td>
</tr>
<tr>
<td>1-2 mg./100 ml.</td>
<td>1-2 mg./100 ml.</td>
<td>1-2 mg./100 ml.</td>
<td>1-2 mg./100 ml.</td>
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<tr>
<td>10-20 mg./100 ml.</td>
<td>10-20 mg./100 ml.</td>
<td>10-20 mg./100 ml.</td>
<td>10-20 mg./100 ml.</td>
</tr>
<tr>
<td>Nursing Diagnosis</td>
<td>Potential Problems (Related to Cause)</td>
<td>Planned Intervention</td>
<td>Expected Outcome</td>
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<td>-------------------</td>
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</tr>
<tr>
<td>Alteration in bowel elimination.</td>
<td>Paralytic ileus.</td>
<td>Assess and record patient's ability to digest. Monitor and record bowel sounds and passage of flatus. Insert nasogastric tube. Commence intravenous therapy. Commence enteral feeding once bowel sounds have been noted, gastric balance (&lt;150 ml) and graded fluids have been implemented. Measure and chart intakes and output 1-2 hourly.</td>
<td>Suppression of bowel stimulation. Resolution of paralytic ileus.</td>
</tr>
<tr>
<td>Patient Problem</td>
<td>Related to Cause</td>
<td>Planned Intervention</td>
<td>Expected Outcome</td>
</tr>
<tr>
<td>----------------</td>
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</tr>
<tr>
<td>Impairment of mobility</td>
<td>Decrease muscle tone.</td>
<td>Initiate a programme of graded exercise on admission. A 30° and record patient's ability to mobilise.</td>
<td>Maximum mobilisation and independence.</td>
</tr>
<tr>
<td>Depression</td>
<td>Increased muscular tone.</td>
<td>Encourage active limb exercises as soon as possible.</td>
<td>Absence of complications related to mobility.</td>
</tr>
<tr>
<td>Decrease motivation</td>
<td></td>
<td>Position and turn patient 2 hourly.</td>
<td>Absence of deformity, contractures.</td>
</tr>
<tr>
<td>Unconsciousness</td>
<td></td>
<td>Place footboard at end of bed.</td>
<td>Absence of deep vein thrombosis.</td>
</tr>
<tr>
<td>Decrease motivation</td>
<td></td>
<td>Posture limb in good alignment in optimal position of maximum function.</td>
<td>Absence of complications related to mobility.</td>
</tr>
<tr>
<td>Increase muscle tone.</td>
<td></td>
<td>Avoid pressure to calves.</td>
<td>Absence of deformity, contractures.</td>
</tr>
<tr>
<td>Decrease muscle tone.</td>
<td></td>
<td>Maintain body alignment by use of pillows and more.</td>
<td>Absence of deep vein thrombosis.</td>
</tr>
<tr>
<td>Nursing Diagnosis</td>
<td>Potential Problem (Related To Cause)</td>
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</tr>
<tr>
<td>NOTE:</td>
<td>bandaging: use repositioned padding and crush bandages. If both bandages are secured to the same side of the bed, the patient will remain in the lateral position. To avoid permanent damage to limbs, select proper choices and application of restraints. Frequently re-evaluate need for restraints. Short presence and type of restraint selected. Check 2-4 hourly for proper placement and effectiveness of restraint, skin integrity, circulation, discoloration and swelling. Apply restraints to no more than three limbs at one time. Reassess limb in position of maximum function. Release, exercise extremity and reapply 2-4 hourly. Notify physician of occurrence of injury. Injury/accident statement to be written, according to hospital policy.</td>
<td>Maximum immobility of part according to need.</td>
<td></td>
</tr>
</tbody>
</table>

| NOTE: | bandaging: use repositioned padding and crush bandages. If both bandages are secured to the same side of the bed, the patient will remain in the lateral position. To avoid permanent damage to limbs, select proper choices and application of restraints. Frequently re-evaluate need for restraints. Short presence and type of restraint selected. Check 2-4 hourly for proper placement and effectiveness of restraint, skin integrity, circulation, discoloration and swelling. Apply restraints to no more than three limbs at one time. Reassess limb in position of maximum function. Release, exercise extremity and reapply 2-4 hourly. Notify physician of occurrence of injury. Injury/accident statement to be written, according to hospital policy. | Maximum immobility of part according to need. |

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