The impact of accurate patient assessment on quality of care

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A nurse should be able to undertake and document a comprehensive, systematic and accurate nursing assessment of a patient. A review of the literature demonstrates a clear variation in the levels of assessment. This article examines the evolution of the nursing role and the implementation of assessment tools and looks at the potential for development within the profession.

Historically, the role of the nurse has been to record but not interpret observations including blood pressure, pulse, temperature, respiratory rate and consciousness level. By accurately recording this information, the nurse is able to prioritise patient care. Priority-setting based on assessment is highlighted as a skill that newly qualified nurses may lack (Hendry and Walker, 2004). Unfortunately, essential observations are not always carried out.

‘Basic’ is a term that is frequently used to describe blood pressure, pulse, respiratory rate and temperature. However, I would argue that this undervalues these observations. Breakell (2004) identifies respiratory rate as ‘one of the most important signs and yet one of the most frequently omitted clinical observations’ Carberry (2002) also found this to be a problem in clinical practice.

The objective of observation is to monitor patients’ progress, thus ensuring the prompt detection of adverse events or delays in recovery (Stevenson, 2004). Respiratory rate is pivotal to assessment. Many scoring systems incorporate respiratory rate, such as:

- APACHE – Acute Physiology and Chronic Health Evaluation Score;
- SIRS – Systemic Inflammatory Response Score;
- PTS – Physiologic Trauma Score;
- TRISS – Trauma and Injury Severity Score;
- MEWS – Modified Early Warning Scoring.

Any training for assessment must include in-depth investigation into respiratory effort and efficacy of breathing. This is supported by Turner (2003) who, while acknowledging the benefits of technology in patient assessment, continues to highlight the importance of respiratory rate.

Role development

As the number of acute admissions increases, nurses are under greater pressure to prioritise care, make clinical judgements and develop their role. In a qualitative study, Carroll (2004) found broad agreement from experts about the core assessment skills that are required for nurses working in this field.

Emergency admission pressures are recognised as a national problem. The Department of Health (2001) emphasises the importance of reducing waiting times for assessment and treatment.

Carroll (2004) describes high expectations of nurses’ core skills in acute care. Judgement involves integrating information, which could relate to a person, observation or situation. In nursing, this judgement is a result of clinical observation. The quality of this judgement could be questioned, especially if the skills of the practitioner are lacking.

Triage

In nurse triage, nurses initially assess patients and prioritise the order in which they are seen by medical staff. It started to become widespread in the UK around the mid-1980s. Triage has evolved and now triage nurses implement initial treatment, such as analgesia and first aid.

While triage nurses follow the nationally recognised Manchester triage flow charts (52 developed flow charts), a high level of clinical skill is still required. Subash et al (2004) propose development of the triage system to that of team triage. They found that nurse and doctor triage significantly reduced the time to medical assessment, radiology and discharge. One reason they give for reduced waiting times is that many minor injuries take as long to triage as to treat. This system also improves multidisciplinary collaboration and communication.

Many medical receiving units now admit directly to the department and this has resulted in nurses having to assess accurately and prioritise patients as they arrive. Time is a valuable commodity when admitting a patient. Recording baseline observations is no longer sufficient. In today’s climate of clinical effectiveness and value for money, a greater level of skill is required of nurses. They need a sound knowledge of basic anatomy and physiology to facilitate the interpretation of observations as well as of the pathology and nursing management of common illnesses and injuries.

references


Research by the Resuscitation Council (2004b) revealed that up to 30 per cent of admissions to intensive care were preventable and up to 40 per cent were late admissions. This suggests that patient assessment is not being carried out effectively.

Nurses should be proactive in undertaking physical examination. While it is acknowledged that many nurses in critical care and specialist roles are doing this, many in general areas have still to make this transition. This may initially provoke apprehension and scorn from others who claim this is not a nurse’s job. However, if a nurse is the first staff member the patient meets, it is her or his job to ensure an accurate initial assessment is obtained. Nurses have a key role in the assessment of wounds and deciding which dressings are appropriate. They are also pivotal in carrying out risk assessments for falls. It is therefore not such a great leap to that of physical assessment, as long as training and development issues are appropriately addressed.

Respiratory assessment is one area into which nurses can expand their practice. I am not arguing that only experienced nurses or nurse practitioners should carry out the assessment, but that any nurse should be able to carry out a basic assessment.

The look, listen and feel approach is still applicable. Nurses should look to see what the respiratory rate is, assessing how well the chest wall is expanding to facilitate respiration, and assess whether both sides of the chest are moving symmetrically. Asymmetry may indicate trauma to the chest wall or the presence of a haemothorax, pneumothorax or pleural effusion limiting full expansion of the lung. Diagnosis would be supported by percussion and auscultation. The quality of the pulse should be assessed, with attention paid to the rate, rhythm and strength. Bradycardia may be the result of an acute myocardial infarction; bradycardia or tachycardia may be the result of an acute asthmatic attack. A seesaw respiratory pattern could help identify an airway obstruction. Cham et al (2002) point out that intercostal muscle usage may indicate the potential for the development of acute respiratory acidosis.

An underpinning knowledge of basic anatomy and physiology and the drive to interpret the given results and observations is required for accurate assessment and prioritisation. The nurse would need to know the underlying physiology of respiration to identify that accessory muscle usage indicated respiratory difficulty. Ayers et al (2004) believe nurses should develop skills so they can rapidly assess the efficiency of a patient’s breathing.

Blood results also help in assessment. Historically, these have also been carried out by other medical professionals. However, Richards et al (2004) highlight how the restructuring of medical roles has resulted in many tasks and skills being delegated to nursing staff. Blood gases, for example, can be invaluable in supporting the decision to refer a patient for urgent anaesthetic review. A blood gas result in a patient with acute asthma and a normal or raised carbon dioxide level would require immediate anaesthetic review and possibly intubation and mechanical ventilation or non-invasive ventilation. While respiratory rate, auscultation, percussion and palpation allow assessment of external respiration, obtaining arterial blood gases allows assessment of internal respiration. During a study in emergency departments, Cham (2002) found arterial blood gases complemented patient assessment.

Assessment of the circulatory system should go beyond recording blood pressure and pulse. Blood pressure readings should be interpreted taking into account any medication the patient may be taking. The quality of the pulse should be assessed, with attention paid to the rate, rhythm and strength. Bradycardia may be the result of an acute myocardial infarction; bradycardia or tachycardia may be the cause of hypotension and collapse. Only by carrying out an accurate assessment and asking appropriate questions can nurses determine how the restructuring of medical roles has been applied.

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### TABLE 1. SCORES USED IN MEWS (MODIFIED EARLY WARNING SCORING)

<table>
<thead>
<tr>
<th>Score</th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resp rate (/min)</td>
<td>8</td>
<td>9-14</td>
<td>15-20</td>
<td>21-29</td>
<td>&gt;30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pulse (/min)</td>
<td>&lt;40</td>
<td>41-50</td>
<td>51-100</td>
<td>101-110</td>
<td>111-130</td>
<td>&gt;130</td>
<td></td>
</tr>
<tr>
<td>Temp (°C)</td>
<td>&lt;35</td>
<td>35-38.4</td>
<td>&gt;38.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CNS</td>
<td>Alert</td>
<td>Voice</td>
<td>Pain</td>
<td>Unresponsive</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urine (ml/hr)</td>
<td>Nil</td>
<td>&lt;30</td>
<td>&lt;60</td>
<td>&gt;150</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sys BP (mmHg)</td>
<td>&lt;70</td>
<td>70-80</td>
<td>101-199</td>
<td>&gt;200</td>
<td></td>
<td></td>
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**REFERENCES**


questions will this be established. Carrying out a 12-lead ECG will complement the assessment, providing an opportunity to identify arrhythmias, conduction defects, enlargement of the heart and myocardial infarction.

According to Smith (2004), nurses caring for patients with complaints such as acute upper gastrointestinal bleeding should be confident in the ABC (airway, breathing and circulation) approach to assessment and management and have an underpinning knowledge of blood biochemistry, as accurate monitoring of fluid balance and electrolytes is essential.

Nurses frequently voice concerns about neurological assessment. Lower (2002) promotes a simple approach to build confidence. Jayaprakash and Coats (2004) identify the minimum neurological observations that should be documented, especially in patients with head injuries, as the Glasgow coma scale (GCS) – incorporating pupil size and reactivity, limb movement, respiratory rate, heart rate, blood pressure, temperature and blood oxygen saturations. The aim is to prevent secondary brain injury as a result of hypoxia or hypotension.

McLeod (2004) discusses a number of possible causes of alteration in consciousness levels that are both intra and extracranial. Crimlisk and Grande (2004) argue that a basic neurological assessment by a nurse is essential to holistic care. There are a variety of tools to assist with neurological assessment, the most commonly used being the GCS. McNarry and Goldhill (2004) reviewed some assessment tools and compared them with the GCS. Regardless of the tool used, nurses should have a knowledge base that underpins the assessment and allows proper interpretation of the findings.

By expanding the role of the nurse to include physical assessment, communication is also further improved. The nurse is able to provide more information to patients, and patients’ and relatives’ anxieties can be addressed more promptly and effectively. Redley et al (2003) recognise the provision of information as vital to patients and their families. Having carried out a more detailed assessment of the patient, the nurse is more able to provide this information.

Assessment tools
Neiderhauser and Arnold (2004) identify the importance of assessing the health risk status of patients, and the indications for intervention. A wide variety of assessment tools are in use to facilitate assessment and ensure the reliability of the process.

Allen (2004) relates how assessment tools empowered her to challenge practice. The GOAL (Gwent Orientation and Awareness Listing) assessment tool is used to assist in screening the mental status of acute medical admissions. GOAL was found to be effective in identifying patients with loss of orientation and awareness due to acute admission.

Carberry (2002) discusses the experience of attempting to implement a MEWS tool. As Table 1, p35 demonstrates, patients are awarded scores according to clinical parameters (note the heavy allocation to respiratory rate). MEWS also offers the nurse guidance on how to progress with the patient assessment: repeat the observation within an hour, repeat in four hours; contact senior house officer for full patient review; then contact consultant on call if the patient’s clinical condition is not improving or continues to deteriorate. This tool empowers the nurse to act on her or his clinical findings.

Allen (2004) notes that for an assessment tool to be effective, staff have to be informed and aware of its aim. A good assessment tool should allow the accurate recording of information.

Although experienced staff may be able to assess patients and detect problems at a glance, more junior nurses or students require guidance. This is key because, while the importance of assessment tools is acknowledged, there is a danger that the nurse may become too reliant on them.

Using the MEWS as an example, a young man with central chest pain may only display tachycardia on admission. As a result, his score would be low, probably warranting a further assessment four hours later. Were the nurse to carry out a 12-lead ECG, she or he may diagnose acute myocardial infarction, placing the patient in an immediate priority group. The key is to use tools such as these to identify patients whose clinical condition is deteriorating or who are failing to improve despite early intervention.

The Resuscitation Council (RCUK, 2004) recommends that an early warning scoring system should be in place to identify patients who are critically ill and therefore at risk of cardiopulmonary arrest. Sharples and Holden (2004) found that there

TABLE 2. COMPONENTS AND PARAMETERS OF ARTERIAL BLOOD GASES

<table>
<thead>
<tr>
<th>ARTERIAL BLOOD GAS RESULTS</th>
<th>NORMAL RANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>7.35–7.45</td>
</tr>
<tr>
<td>PaCO₂</td>
<td>4.7–6.0kPa (35–45mmHg)</td>
</tr>
<tr>
<td>PaO₂</td>
<td>10kPa (75mmHg) on air</td>
</tr>
<tr>
<td>HCO₃⁻</td>
<td>22–26 mmol/L</td>
</tr>
<tr>
<td>Base excess</td>
<td>+/- 2mmol/L</td>
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</tbody>
</table>

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were benefits from introducing an early warning scoring system, but admitted that its implementation was challenging.

**Clinical examination and technology**

Historically, physical assessment has been the remit of medical staff. Emergency care has seen rapid changes in this regard, with the new emergency nurse practitioner role leading the way. Nurses should be embracing the role of physical assessment. Loveridge (2003) discusses the acquisition of skills such as percussion and auscultation through clinical practice to complement the assessment.

Technology is now very much a part of nursing. Pulse oximeters are often used to complement respiratory assessment and oxygen therapy. However, the nurse needs to be aware of the pitfalls that can result from the use of this equipment, such as altered readings in anaemic patients and those with fluid depletion or vasoconstriction, and that the machine does not distinguish between oxyhaemoglobin and carboxyhaemoglobin (American College of Surgeons, 1997).

Advances in the recording of vital signs make it possible for nurses to monitor patients continuously. It could be argued that due to the development of medical colleagues. The existing senior nurses, with the relevant skills and experience, would also be able to mentor junior members of staff.

Developing this programme would be time-consuming and hard work. There may be some difficulty achieving agreement between members of the multidisciplinary team, for example, but the effort would be rewarded when the programme came to fruition. For the programme to work staff would have to be allocated time, perhaps on a monthly basis, to meet with their mentors and review their portfolio. This would also be an issue in the many other clinical areas that are understaffed.

**Future development**

In a study exploring the relationship between work experience and physical assessment, Yamauchi (2001) found that many nurses developed their assessment skills on the job. While it is acknowledged that this is commonly the case, there is a clear need to police what is being learnt to help ensure continuity and quality of care.

One way to achieve this would be to introduce a competency-based programme mainly addressing the topic of assessment, interacting with anatomy and physiology, pharmacology, nursing interventions and technology in relation to patient assessment. Completion of the competency framework would result in a highly skilled practitioner, whose management of care would complement that of her or his medical colleagues, thus improving the overall quality of the patient journey.

The competencies could be grouped under individual bodily systems, for ease of identification of learning needs and disease management.

However, as the level of competence progressed, the systems would overlap, as they do in clinical practice. They would consist of a mixture of learning and performance outcomes. For example, a learning outcome would identify the physiological processes involved in external and internal respiration, whereas a performance outcome would be to carry out competently auscultation of the chest of a patient in respiratory distress and interpret the results appropriately.

Within the competencies are skills such as venepuncture, cannulation, arterial blood gases (obtaining and analysing), and recording and obtaining ECGs. Docherty (2003) identifies the recording and interpretation of the 12-lead ECG as being pivotal in the assessment and management of patients who are experiencing chest pain. This is further supported by Harvey (2004) who discusses the assessment and management of patients suffering from angina. However, it is further complemented by accurate physical assessment of the patient.

Performance criteria would be attached to most of the competencies, with suggestions on how to obtain evidence to allow proof of accomplishment of competence in that particular field. Evidence could be from clinical practice, literature review and perhaps a portfolio. Driscoll and Tee (2001) identify the benefits of a portfolio as ‘a profile, which not only contributes to the continuing professional development and lifelong learning of practitioners but provides evidence in maintaining registration’. Pre-existing training could be utilised to help achieve these competencies, these sessions being immediate life-support training, advanced life-support training, recognition and management of anaphylaxis, and recognition and management of a sick child.

It could be argued that due to the development and evolution of emergency care and the increasing pressure on admission units, a logical progression would be the development of a nurse consultant role within this field. The nurse consultant would be an ideal person to drive forward patient assessment and to inspire nurses in its application, showing that we can stand as equals alongside medical colleagues. The existing senior nurses, with the relevant skills and experience, would also be able to mentor junior members of staff.

**REFERENCES**


In an ideal world, any nurse should be able to undertake and document a comprehensive, systematic and accurate nursing assessment of patients in an emergency situation and as arranged admissions. On reviewing the literature and in the authors’ clinical experience, there appears to be a clear variation in the levels of assessment that patients display warning signs that manifest as changes in clinical parameters and general appearance.

To recognise a sick patient, which is fundamental to safe nursing care, also enabling better communication and dissemination of information between professionals. The planning and evaluation of treatment will also be aided, resulting in higher standards of care.

Nurses are key members of the care team to communicate with patients, carers and families. Discussing the assessment and management of, time is of the essence in a patient suffering from a myocardial infarction, with clear evidence displaying that the effectiveness of thrombolysis deteriorates as the time delay to its initiation increases.

Prospective observational

However, not all patients are being assessed and treated properly in the patient journey.

It is important then to ensure an accurate initial assessment of the patient is carried out.

The nurse is required to display key skills in facilitating accurate patient assessment.

They found that waiting times were reduced within the department.

There are generally five coloured categories, these being Red (immediate – 0 minutes waiting), Orange (very urgent – maximum 10 minutes waiting), Yellow (urgent – maximum 60 minutes waiting), Green (standard – maximum waiting 120 minutes) and Blue (non-urgent, waiting time 240 minutes).

Resulting in safer waiting times for patients in departments, waiting times are a key component to the triage system, monitoring a patient’s vital signs, general appearance and behaviour.

In a on completion of a qualitative study focused on the skills possessed by nurses in medical assessment units found that there is a broad agreement between a body of expert opinion that there are core assessment skills required for any nurse working in this field.

Jason:

The following article will be a discussion on the evolution and the potential development of nursing assessment and the impact it has on patient care. It will discuss the background to nursing observation and assessment; this will then be developed in regards to the evolution of the nursing role and implementation of assessment tools, cumulating with the potential for future evolution and development within the profession. While the areas of interviewing the patient, achieving appropriate patient history and the patient’s presentation are acknowledge as being vitally important, they will not be addressed in this article.

Fig 2 identifies the components and parameters of arterial blood gases.