Fluid balance charting is not a new practice based issue in nursing (Chung et al. 2002; Jeyapala et al. 2015). Evidence reveals that fluid balance charts have been poorly and inaccurately maintained since 1985 (Chung et al, 2002; Scales & Pilsworth, 2008).
What makes fluid balance charting so difficult is a question and concept that healthcare professionals constantly enquire about (Chung et al. 2002; Jeyapala et al. 2015; McGloin, 2015). Although fluid balance charting seems straightforward, the issue in nursing practice remains present with a number of external influences that effect the important role fluid balance charting has in patient care (Jeyapala et al. 2015; McGloin, 2015; Chavin & Chow, 2008).

This paper identifies the issue of inaccurate fluid balance charting, the social, political and external factors that contribute to and effect this issue, and finally, recommendations to ensure consistency and continuous improvement for this issue.

Overview
Fluid balance refers to the balance between the volume of water lost from the body and volume of water gained (Chung et al. 2002; Scales & Pilsworth, 2008; Jeyapala et al. 2015; McGloin, 2015; Chavin & Chow, 2008; McLaFerty et al. 2014). The fluid balance chart has been a document in the healthcare system for over 50 years and is a non-invasive tool to assess the hydration status of patients (Chung et al. 2002; Scales & Pilsworth, 2008; Jeyapala et al. 2015, McGloin, 2015; Castledine, 2003; Chavin & Chow, 2008). It is a chart that documents the input and output that a patient has taken in and out in a 24-hour period (Chung et al. 2002; Scales & Pilsworth, 2008; Jeyapala et al. 2015, McGloin, 2015; Chavin & Chow, 2008). The importance of this, is to guide clinical decisions including medication administration and prescription as well as surgical interventions (Chung et al. 2002; Scales & Pilsworth, 2008; Jeyapala et al. 2015, McGloin, 2015; Chavin & Chow, 2008). The issue with fluid balance charting is that they can be counterproductive and extremely dangerous if the data is inaccurate or inadequate (Chung et al. 2002; Scales & Pilsworth, 2008; Jeyapala et al. 2015, McGloin, 2015; Chavin & Chow, 2008).

Medical staff, nurses and dieticians expect accurate fluid balance totals in order to plan appropriate care and reduce the risk of post-operative complications that may be associated with dehydration, malnutrition and electrolyte imbalances (Chung et al. 2002; Scales & Pilsworth, 2008; Jeyapala et al. 2015, McGloin, 2015; Chavin & Chow, 2008). Medical staff want to know the exact output, urine/ diarrhoea measure, intravenous therapy, oral intake, nasogastric aspiration and drainage, wound drainage, vomit in order to assess hydration, electrolytes and avoid fluid overloading (Chung et al. 2002; Scales & Pilsworth, 2008; Jeyapala et al. 2015, McGloin, 2015; Chavin & Chow, 2008).

Nursing practice does not remain consistent and thus keeping an accurate fluid balance chart becomes a balancing act in itself. The ability to enforce change requires empowering others to act on the vision in order to overcome obstacles for change. To enlist all staff to become empowered can be challenging given different backgrounds, contributing factors and the culture of the environment.

The importance of identifying the recurring issue of inadequate and inaccurate fluid balance charting is to identify what inhibits the practice of maintaining accurate fluid balance charting, ways to improve the practice that will sustain and ensure that fluid balance charting is completed accurately in any practice environment (Chung et al. 2002; Scales & Pilsworth, 2008; Jeyapala et al. 2015; McGloin, 2015; Chavin & Chow, 2008).

The ward that supports an environment where staff have the opportunity to engage in further education enables a more welcome use of initiatives to improve and reduce the uncertainty and inconsistency in regards to inadequate fluid balance charting (Chung et al. 2002; Scales & Pilsworth, 2008; Jeyapala et al. 2015; McGloin, 2015; Chavin & Chow, 2008). However, factors contributing to inadequate and inconsistent fluid balance charting such as lack of time, increased acuity, lack of education inhibit these workplace initiatives and therefore change is unsuccessful. (Chung et al. 2002; Scales & Pilsworth, 2008; Jeyapala et al. 2015, McGloin, 2015; Chavin & Chow, 2008).

Inservices provide an opportunity to clarify what is required and answer questions that staff may have (Chung et al. 2002; Jeyapala et al. 2015; McGloin, 2015; Chavin & Chow, 2008). For staff to understand what is required for fluid balance charting, this information is retrieved and collected from the doctors that perform the surgeries. The senior doctors have clear and specific instructions of what care postoperatively should be and this information is then delivered in these inservice or made aware to staff informally. Inaccuracy and the lack of compliance with maintaining fluid balance charts tends to infuriate both nurses and doctors, and this prompts to initiate a change in the workplace (Chung et al. 2002; Scales & Pilsworth, 2008; Jeyapala et al. 2015; McGloin, 2015; Castledine, 2003; Chavin & Chow, 2008).

The paper identifies the issue of inaccurate fluid balance charting, the social, political and external factors that contribute to and effect this issue, and finally, recommendations to ensure consistency and continuous improvement for this issue.

ANALYSIS

The practice of fluid balance charting seems simple; record the intake and output. However, based on diverse backgrounds and different ways fluid balance charting has been educated and taught, this creates a conflation between the correct and incorrect practice of recording fluid balance charting (Chung et al. 2002; Scales & Pilsworth, 2008; Jeyapala et al. 2015; McGloin, 2015; Chavin & Chow, 2008). What constitutes being recorded or not remains a subject that is often open to debate. Whilst there are differing opinions about the correct practice of fluid balance charting, this creates an opportunity that encourages staff to share their knowledge and skills in order to improve their practice (Chung et al. 2002; McGloin, 2015; Chavin & Chow, 2008).

Social
Education is a large aspect in the practice environment as the support and role from the clinical educator aims to provide and facilitate education and learning for all staff for clinical and practice based issues that remain uncertain or questionable (Chung et al. 2002; Scales & Pilsworth, 2008; Jeyapala et al. 2015; McGloin, 2015; Chavin & Chow, 2008).

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**Time related to acuity**

Fluid balance charting is part of charting and managing clinical information, which is therefore considered a part of a nurse’s workload (NMBA, 2016; Chung et al. 2002; Scales & Pilsworth, 2008; Jeyapala et al. 2015; McGlloin, 2015; Chavin & Chow, 2008). As a result, allocating time to complete fluid balance charting during the shift should be made (Chung et al. 2002; Scales & Pilsworth, 2008; Jeyapala et al. 2015; McGlloin, 2015; Castledine, 2003; Chavin & Chow, 2008). Often, evidence shows that due to lack of time related to increased acuity, information on the fluid balance chart is either duplicated or omitted.

Poor documentation leads to compromising patient safety and quality of care (Chung et al. 2002; Scales & Pilsworth, 2008; Jeyapala et al. 2015; McGlloin, 2015; Castledine, 2003; Chavin & Chow, 2008). Maintaining and recording accurate documentation is part of providing safe and competent nursing care according to the Nursing and Midwifery Board of Australia. Anything outside of that scope could be considered negligent in providing patient care (Chung et al. 2002; Scales & Pilsworth, 2008; Jeyapala et al. 2015; McGlloin, 2015; Castledine, 2003; Chavin & Chow, 2008). Limited available time to record fluid balances that is related to patient care is inexusable where patient monitoring and safety is concerned (Chung et al. 2002; Scales & Pilsworth, 2008; Jeyapala et al. 2015; McGlloin, 2015; Castledine, 2003; Chavin & Chow, 2008). Research states that nurses must understand and demonstrate the competence knowledge that caring for patients requires, and this includes clinical indications and importance of a fluid balance chart (Chung et al. 2002; Scales & Pilsworth, 2008; Jeyapala et al. 2015, McGlloin, 2015; Daffurn et al. 1994, McLafferty et al. 2014). Therefore, the application of further education and knowledge for both staff to understand how and what to record and to reinforce and provide education to the patient about the importance of keeping an accurate fluid balance.

**Recommendations for best practice**

**Patient involvement**

There are many inexpensive initiatives that nursing staff can initiate on the ward to improve the practice of fluid balance charting (Chung et al. 2002; Jeyapala et al. 2015). Best practice recommends that patient involvement is key in enabling more accurate fluid balance charting (Chung et al. 2002; Jeyapala et al. 2015). The major focus in providing patient care, is of course the patient (Chung et al. 2002; Jeyapala et al. 2015; NMBA, 2016). Including the patient in their own care while in hospital, exerts a feeling of independence and autonomy and promotes a level of control for the patient in an otherwise well-controlled environment (Chung et al. 2002; Jeyapala et al. 2015; NMBA, 2016). Promoting and encouraging autonomy in the provision of care for a patient is a key ingredient in enhancing patient care and satisfaction (Chung et al. 2002; Jeyapala et al. 2015; NMBA, 2016).

Educating the patient and suggesting they monitor their intake for the day (given they are alert and orientated) enables more accurate charting as the patient is able to recall what they have had (Chung et al. 2002; Jeyapala et al. 2015; NMBA, 2016).
Auditing

Auditing the number of charts that are correctly filled out and assessing the knowledge healthcare workers have regarding fluid balance monitoring can aim to assist in reducing inadequate fluid balance charting (NMBA, 2016, Chung et al. 2002; Jeyapala et al. 2015; Stanley et al. 2008). Auditing can assist in showing where strengths and weaknesses are in fluid balance charting and where improvement is required (NMBA, 2016, Chung et al. 2002; Jeyapala et al. 2015; Stanley et al. 2008). It is a good tool to use prior to implementing a change on the ward and then at the end of the initiative to extrapolate data and compare results (NMBA, 2016; Chung et al. 2002; Jeyapala et al. 2015; Stanley et al. 2008). This can enable the ward to regularly review their practice as part of achieving and sustaining change as well as meeting quality and safety requirements for patient care (NMBA, 2016; Chung et al. 2002; Jeyapala et al. 2015; Stanley et al. 2008).

Conclusion

The fluid balance chart has been a longstanding tool that assists clinicians in monitoring and assessing the euvolemic status of a patient (Chung et al. 2002; Jeyapala et al. 2015; Scales & Pilsworth, 2008; Tang & Lee, 2010). The importance and role of accurate fluid balance charting is often forgotten or neglected and thus has become a practice based issue that requires constant review, intervention and attention (Chung et al. 2002; Jeyapala et al. 2015; Scales & Pilsworth, 2008; Tang & Lee, 2010; McGloin, 2015; McLafferty et al. 2014; Astle, 2005). This paper has examined the contributing factors that inhibit accurate fluid balance charting such as lack of time related to patient acuity and inadequate training and education (Chung et al. 2002; Jeyapala et al. 2015; Scales & Pilsworth, 2008; Tang & Lee, 2010; McGloin, 2015; McLafferty et al. 2014; Astle, 2005). In summary, a number of recommendations have been suggested to improve the practice of accurate fluid balance charting.

These include enhancing and promoting patient involvement, the use of posters and signs on the ward, in the patient chart and on patient identification boards in the bedside, conducting group staff education sessions at change of shift times and finally auditing in a timely manner to determine where improvement, education and further interventions are required in order to overcome the barriers associated with inaccurate fluid balance charting (Chung et al. 2002; Jeyapala et al. 2015, Scales & Pilsworth, 2008; Tang & Lee, 2010; McGloin, 2015; McLafferty et al. 2014; Astle, 2005). By implementing these changes to the practice environment, successful achievement of maintaining and increasing ward compliance with accurate fluid balance recording can be sustained for more diligent, and safer patient care.

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