

# A CASE STUDY: WRONG PATIENT; WRONG BLOOD TRANSFUSION: IS THERE A THEORY – PRACTICE – ETHICS GAP?

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## ABSTRACT

This case study illustrates an ongoing therapeutic dilemma which continues to place the patient's welfare at risk. The safety predicament is associated with the transfusion of blood or their products to the correct patient. Predictably, healthcare scholars declare that when clinical practice is ineffective, a “*theory-practice gap*” is typically responsible. Within this paradigm there is often a gap between theoretical knowledge and its application in clinical practice. Most of the evidence relating to the non-integration of theory and practice makes the premise that environmental factors will influence learning and practice outcomes, hence the “*gap*”. However, it is the author's belief, that to “*bridge the gap*” between theory and practice an additional component called “*Ethics*” must be appreciated. This introduces a new concept “*theory-practice-ethics gap*” which must be considered when reviewing some of the unacceptable appalling outcomes in health care practice.

**Keywords:** *Blood transfusion, Ethics, Error, Identification, Patient, Practice, Case study*

## INTRODUCTION

This article uses a case study to demonstrate a predicament which the author has termed the “*theory-practice-ethics gap*”; and is deemed to be a patient advocacy and patient safety concern (Mortell *et al.*, 2013). The case study that will be examined to demonstrate this “*theory-practice-ethics gap*”; involves a critically ill adult patient in the intensive care unit [ICU] who required an urgent blood transfusion. The dilemma which will be reviewed illustrates a situation that placed the patient at risk. It focuses on the fact that health-care professionals are provided with organizational policies and procedures [Theory], and are required to validate competence and organizational compliance [Practice]. However, some health-care professionals continue to support an attitude of unethical practices which generate medical errors and place the patients' safety at risk (Dixon-Woods *et al.*, 2014; Leape, 1994, 2002, 2015).

### Background

Patient safety and high quality of care are essential aspects of all healthcare practices. When people are

admitted to hospital, they expect to have their illness or disease treated appropriately, and receive safe, high quality care. They do not expect to be put at risk or be harmed. The primary goal of healthcare is to maximize safety and wellbeing, and so optimize the quality of people's lives (Wilson, 2009; Leape, 1994, 2002, 2015). The Institute of Medicine's [IOM] report '*To Err Is Human: Building a Safer Health System*' stated that 98,000 deaths occurred annually in the United States of America [USA] because of medical errors (IOM, 2000). European countries also have concerns associated with ongoing medical errors (Fowler *et al.*, 2008; Classen, *et al.*, 2011; Hinno, Partanen & Vehviläinen-Julkunen, 2011). In the United Kingdom (UK) as many as 10% of patients may encounter a medical error and some may encounter multiple errors (Sari *et al.*, 2007). A subsequent study from the United states of America (USA) declared that, 400,000 medical errors and 210,000 deaths were associated with preventable harm in hospitals (James, 2013). A more recent study estimated that medical errors in England were related to approximately 22, 000 deaths annually (Wise, 2018).

The IOM report (2000) initiated questions about patient safety and the obligation for healthcare providers to deliver high quality, safe healthcare (IOM, 2001, 2012). Since this report, a commitment to safety has been a strategy and a policy target for healthcare organizations around the world. The Joint Commission International (JCI) is one such organization that labors to improve patient safety and quality of health care in the international community. In 2003, the JCI selected correct patient identification as a National Patient Safety Goal. Each year, the JCI publish patient safety goals which assist organizations with standards to endorse patient safety (Sammer *et al.*, 2007; JCI, 2010, 2013). However, despite the awareness which was created by the IOM report and strategies by global organizations such as JCI; patients continue to experience harm and substandard care (Dixon- Woods *et al.*, 2014; Leape, 2015). Disturbingly, Makary & Daniel, (2016), concurred that the medical errors which include the administration of wrong blood transfusions remained prevalent and were considered the third leading cause of death in the USA, after heart disease and cancer.

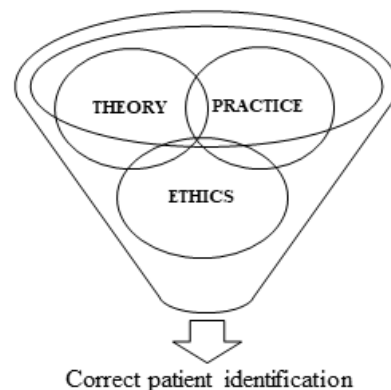
One of the JCI patient safety goals is too “*Identify the patient correctly*” (JCI, 2010), and healthcare professionals are repetitively informed about the importance of correct patient identification, with instruction and competence assessments (Okuyama, Martowirono & Bijnen, 2011). However, despite being provided with instruction [theory] and competence assessments [practice] the medical errors associated with patient identification continue to be commonplace in the healthcare setting (Emergency Care Research Institute (ECRI), 2013, 2015, 2016).

The ECRI reviewed more than 7,613 medical errors reported between 2013 and 2015, submitted by 181 healthcare organizations. A majority of 91.4 percent of errors that had the potential to place the patient at risk were discovered before any harm had occurred. Approximately 30 percent of the medical errors involved identifying the patient correctly (ECRI, 2013, 2015, 2016). In one event, the ECRI report stated that the wrong patient record was accessed, to give another patient clearance for unauthorized surgery (ECRI, 2016).

In the setting of medical errors, the theory-practice gap is often cited as the affronting offender (Essani &

Ali, 2011; Mahmoud, 2014). Practices which are based on customs, and outdated information are placed in a nonscientific model called the theory-practice gap (Allmark, 1995; Hewison & Wildman, 1996). Within this model there is often a gap between theoretical knowledge and its application in practice. Most of the evidence associated with the non-integration of theory and practice has the belief that environmental factors are responsible and will affect learning and practice outcomes, hence the "Gap" (Wilson, 2009; Ajani & Moez, 2011; Scully 2011).

In reality however, it is the author's belief, that to "bridge the gap" between “Theory and Practice” an additional factor called “Ethics” is required, and must be considered [Figure 1]. Ethics is a moral responsibility and a duty of care (Linsley, 2012; Stern, 2012) In order to safely implement healthcare practices such as a blood / product transfusion, moral responsibility and a duty of care providers must be taken into account when reviewing some of the undesirable outcomes in health care practice (Saver *et al.*, 2015). One such undesirable practice is incorrect identification of a patient, and in the context of the *theory-practice-ethics gap*, blood / product transfusions and medical errors is a new paradigm to consider.



**Figure 1: A theory, practice and ethics model for positive clinical outcomes**

### Case Study

A 19-year-old male patient was admitted to the intensive care unit [ICU] from a Middle Eastern emergency department (ED) hospital with multiple injuries sustained following a motor vehicle accident, and not wearing a seat belt. Subsequent investigations confirmed fractured ribs Figure 2, with a fractured right clavicle Figure 3.



**Figure 2: AP Chest x-ray: Multiple rib fractures & chest tubes**

The rib fractures and extensive tissue trauma resulted in considerable internal bleeding [bilateral hemo-thorax]. These injuries required the insertion of two chest tubes for drainage with an estimated blood loss of 1.5 liters of fresh, bright blood.



**Figure 3: AP Chest x-ray: Fractured right clavicle**

On clinical examination, he was anxious, had pale, cool skin, his pulse rate was 115 beats per minute; a blood pressure [BP] 90/75 mmHg with a narrow pulse pressure of 15mmHg, his respiratory rate was 20 breaths per minute; with a SpO<sub>2</sub> of 95% on intranasal oxygen FiO<sub>2</sub> .30. There was also decreased air entry on auscultation throughout bilateral lung fields, notably the

mid and lower zones. Chest x-ray confirmed multiple fractures [Figures 2 & 3]. Air entry improved bilaterally following chest tube insertion and drainage of the hemothoracies. His pain was stated to be severe with a numerical value of 8/10, for which he received narcotic analgesia. The patient's serum Hemoglobin was 7.5 gram/100 ml which confirmed anemia and hypovolemia due to severe blood loss. This would require multiple transfusions of packed red blood cells [PRBC]. The ICU physician ordered three units of PRBC as a definitive intervention to treat his acute anemia and stabilize his hemodynamic status. On the day of the prescribed transfusion, the first unit of PRBC was collected from the blood bank by the ICU patient care technician [PCT]. Verification and collection of the unit of PRBC was done according to the hospital's policy and procedure (Institute for Safe Medication Practices, (ISMP) 2003, 2008, 2009), employing the organizational independent double check [Table 1].

**Table 1: Blood bank independent double check procedure**

<b>Two accredited and authorized clinicians</b> must individually complete the patient and blood product identification check correctly as follows:
<ul style="list-style-type: none"> <li>Independently check the integrity of the blood product and container being collected</li> </ul>
<ul style="list-style-type: none"> <li>Independently check that the following details match exactly on the blood product label and blood bank release form</li> </ul>
<ul style="list-style-type: none"> <li>The patients full name</li> </ul>
<ul style="list-style-type: none"> <li>The patient's Medical record number [MRN]</li> </ul>
<ul style="list-style-type: none"> <li>The patient's blood group and Rh factor</li> </ul>
<ul style="list-style-type: none"> <li>The donor's identification number</li> </ul>
<ul style="list-style-type: none"> <li>The donor's blood group and Rh factor</li> </ul>
<ul style="list-style-type: none"> <li>The recipient [patient] and donor compatibility has been confirmed with the blood bank serologist's signature</li> </ul>
<ul style="list-style-type: none"> <li>The expiry date and time of the blood product</li> </ul>

The unit of PRBC was subsequently transferred to the ICU by the PCT and given to the receiving ICU nurse. Before commencing the PRBC transfusion, two ICU nurses should have completed the patient and blood product identification check independently at the bedside [Table 2]. The pre-transfusion check should have been according to the hospital policy, safety standards (ISMP, 2003, 2008, 2009) and that recommended by the Joint Commission International's patient safety goal, "Identify the patient correctly" (JCI, 2010).

**Table 2: Bedside independent double check procedure**

<b>Two accredited and authorized nurses</b> , nurse 1 and nurse 2, must individually complete the correct patient and blood product identification check as follows:
• The patients full name verbally if possible and / or ID wrist band
• The patients wrist band MRN
• The transfusion consent is valid
• The physician transfusion order is valid
• The physician order states the blood product, dose, route, and duration
• Check the integrity of the blood product and container
• Check that the following details match exactly on the blood product label and transfusion requisition form
• The patients full name
• The patient's Medical record number [MRN]
• The patient's blood group and Rh factor
• The donor's identification number
• The donor's blood group and Rh factor
• Recipient/patient and donor compatibility confirmed by the serologist's signature
• The expiry date and time of the blood product

Despite the organizational policy related to Blood/product transfusions, and their training as nursing transfusion providers; Nurse 1 and Nurse 2 did not perform an independent double check pre-transfusion. Consequently, the “*wrong ICU patient*” was transfused with a unit of B+ PRBC which had not been ordered for them. However, it was only by the grace of God that the “*wrong ICU patient*” had the same blood group B+ as the “*right ICU patient*”, averting a hemolytic transfusion reaction catastrophe.

## RESULTS AND DISCUSSION

As a professional healthcare provider identifying a patient correctly prior to any procedure is a rigid responsibility, whether the procedure is minor or major. Typically, before any medical procedure such as a blood transfusion, the patient's full name and medical record number (MRN) must be verified for accuracy. Correct identification of a patient is a standard healthcare requirement, which ensures patient safety and prevents potential harm (JCI, 2010).

This case study involved two ICU patients, one who required a blood transfusion and one who did not. The “*wrong ICU patient*” was incorrectly identified and given an unnecessary blood transfusion, which could have resulted in a hemolytic transfusion reaction. The Joint Commission International's patient safety goal to

“*Identify the patient correctly*” (JCI, 2010) or the equivalent depending on the organization's policy (ECRI, 2016) must be employed. All patients must be afforded a safe systematic organizational process to be identified correctly before any procedure. Correct patient identification is a practice which all healthcare providers, have been informed and instructed on, with subsequent compliance being validated. The patient in this case study went through 4 stages of an organizational system of verification which was intended to identify them correctly pre-blood transfusion. However, the wrong patient received one unit of PRBC after two ICU nurses failed to perform the required independent double check as the third and fourth verification before commencing the transfusion.

Regardless of what you call them, medical errors, faults, slips, non-compliance, ethics, both of the ICU nurses neglected to comply with the organizational policy and procedure which would ensure patient safety. In a perfect world, healthcare would happen in a highly dependable system where no one is hurt and everyone gets the care they need. But, in actuality, patients continue to be harmed with the safety professionals opting out by stating that “we're all human” and, of course, to “Err is Human” (Fowler *et al.*, 2008; Classen *et al.*, 2011; Hinno, Partanen & Vehviläinen-Julkunen, 2011; James, 2013; Wise 2018).

The Swiss cheese model (Reason, 1990) compares human systems to layered slices of Swiss cheese, which are stacked side by side. In the Swiss cheese model, an organization's defenses against failure are modeled as a series of barriers, represented as slices of cheese. The holes in the slices represent weaknesses in individual parts of the system and are continually varying in size and position across the slices. The system produces failures when a hole in each slice momentarily aligns, permitting “a trajectory of accident opportunity”, so that a hazard passes through holes in all the slices, leading to a failure (Stranks, 2007). Although the Swiss cheese model is respected and considered to be a useful method of relating concepts (Reason, 1990, 1995, 2000), it has been subject to criticism that it is used too broadly (Euro-control Annual Report, 2006). This case study illustrates how medical errors such as the incorrect transfusion of blood/products will continue within the Swiss cheese model despite having a precise system in place (Figure 4). The case study also demonstrated that there is a ‘theory-practice-ethics gap’, when healthcare providers, are ratified by their profession and prepared by their employing organization to provide ethical care

which has been fortified with the relevant theory and practice (Mortell, 2009, 2012; 2013).

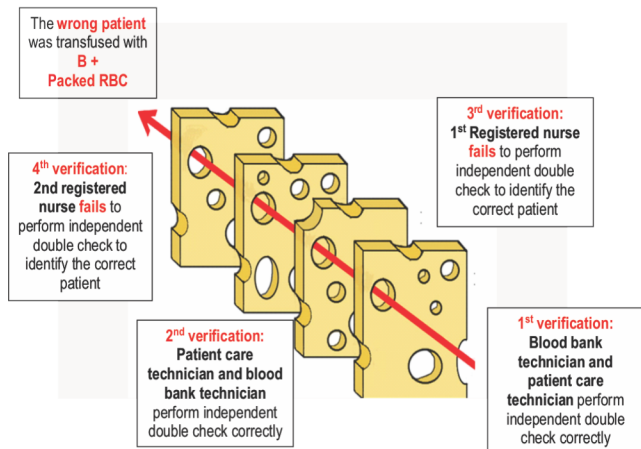


Figure 4: The Swiss cheese model [Reason, 1990] applied to this case study

## CONCLUSION

This case study focused on two issues which relate to patient safety, the first was an ongoing medical dilemma, which involved correct patient identification. The second, was an issue which revealed a potential conflict of professional ethics within a new paradigm called the *theory-practice-ethics gap*. This paradigm of a *theory-practice-ethics gap*, acknowledges that all healthcare professionals are provided with theoretical knowledge and practical skills to practice competently and safely, yet continue to be ethically non-compliant for correct procedure. Non-compliance to the authorized organizational policies and procedures for

clinical practices creates ethical dilemmas. Without adherence to organizational policy to identify the patient correctly [full name and MRN] by the healthcare professionals involved, the consequences and complications for this patient may have been life threatening.

It also serves as a prudent reminder that everything “we do to or “for” the patient has potential complications associated with it. Ultimately the goal of all professional healthcare providers is to provide safe, evidence-based quality care because all patients regardless of their religion, race, culture, age or gender are entitled to safe, quality care. Health care dynamics are complex and involve care processes which include sophisticated technologies and therapeutic interventions. With an enlarging global population and longer life expectancy, the frequent occurrences of medical errors, such as incorrect patient identification remain as a patient safety issue. Endeavors must be made to encourage healthcare professional ethics and this must be reflected on their moral duty, to provide safe, quality patient care within health care organizations. Only by creating a culture of ethical care can we hope to decrease a *'theory-practice-ethics gap'*.

## Author's note

For this type of case study, formal consent was not required, as it does not identify the organization or individuals involved.

## Declaration of interests

The author declared no potential conflicts of interest with respect to authorship, and/or publication of this a

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