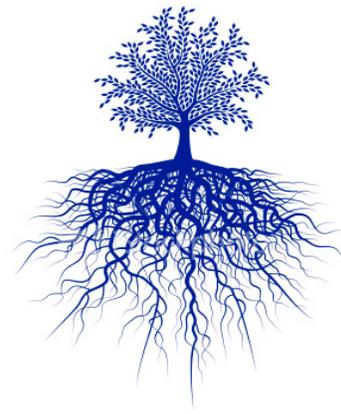




## **Course: Knowledge is the Enemy of Unsafe Care**

### **Topic: Root Cause Analysis**



#### **Summary**

**Many hospitals and health-care facilities are now using a process called Root Cause Analysis (RCA) to determine the underlying causes of adverse events. RCA was first developed in engineering and is now used in many industries, including health care. A RCA is used after an incident has occurred to uncover the primary causes. As such, it focuses on the particular incident and the circumstances surrounding it. However, there are many lessons to be gained from this retrospective process that may prevent similar incidents in the future.**

**RCA is a defined process that seeks to explore all of the possible factors associated with an incident by asking what happened, why it happened and what can be done to prevent it from happening again.**

#### **What is RCA?**

It is a structured approach to incident analysis. It was first established by the National Center for Patient Safety of the US Department of Veterans Affairs.

- The RCA model focuses on prevention, not blame or punishment. The focus of this type of analysis is on system-level vulnerabilities as opposed to individual performance. The model examines multiple factors, such as communication, training, fatigue, scheduling of tasks/activities and personnel, environment, equipment, rules, policies and barriers.
- RCA focuses on the system, not the individual worker, and assumes that the adverse event that harmed a patient was caused by a system failure. A severity assessment code is used to help triage reported incidents to ensure that those indicating the most serious risks are dealt with first.

#### **RCA models**

A number of models have been developed using root cause analysis principles. One such model, called the London Protocol, was developed by C. Vincent. This is an easy-to-understand model that takes the team through each of the steps of a clinical investigation. The Veterans Affairs National Center for Patient Safety of the United States Department of Veterans Affairs (VA) developed another model, which also uses a structured approach of RCA to evaluate and analyse adverse events and develop system improvements to prevent their reoccurrence. All models that review retrospectively ask the following set of questions:

- What happened?
- Who was involved?
- When did it happen?
- Where did it happen?
- How severe was the actual or potential harm?
- What is the likelihood of recurrence?
- What were the consequences?



## Characteristics of RCA

The defining characteristics of root cause analysis include:

- review by an inter-professional team knowledgeable about the processes involved in the event;
- analysis of systems and processes rather than individual performance;
- deep analysis using “what” and “why” probes until all aspects of the process are reviewed and contributing factors are considered;
- identification of potential changes that could be made in systems or processes to improve performance and reduce the likelihood of similar adverse events or close calls in the future.

## Training in RCA

Health-care providers require training in this method. Many countries have introduced training programmes to help providers develop skills in conducting RCAs. The VA model has become a prototype for health-care organizations worldwide.

It is difficult for a team of health-care professionals to conduct a RCA without the support of their organization, including personnel, time and support from managers, clinicians, and the chief executive.

The VA has developed a guide for staff about the possible areas and questions they might ask to uncover the possible factors involved in an incident.

- **Communication:** Was the patient correctly identified? Was information from patient assessments shared by members of the treatment team in a timely way?
- **Environment:** Was the work environment designed for its function? Had there been an environmental risk assessment?
- **Equipment:** Was the equipment designed for its intended purpose? Had a documented safety review been performed on the equipment?
- **Barriers:** What barriers and controls were involved in this incident? Were they designed to protect patients, staff, equipment or environment?
- **Rules, policies and procedures:** Was there an overall management plan for addressing risk and assigning responsibility for risk? Had a previous audit been done for a similar event? If so, were the causes identified and were effective interventions developed and implemented on a timely basis?
- **Fatigue/scheduling:** Were the levels of vibration, noise and other environmental conditions appropriate? Did personnel have adequate sleep?

All recommendations should address the root cause of the problem. They should be specific, concrete and easily understood. Recommendations should be realistic. Roles and responsibilities for their implementation should be clearly defined, along with a timeframe for their implementation.