(Title) H-R Model: Basic Framework of Sciences and Technologies in Patient Safety.

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(Summary)

Patient safety is a basic support to smart healthcare. However, massive practices in patient safety world are composed of huge complex of sciences and technologies.
The present "H-R Model" outlines the above complexed body, and generates several new concepts in patient safety world.
The Model can also perform to check and evaluate effectiveness in a total of complexed system of patent safety practices in healthcare. So, the Model is applicable to "stress test" of healthcare safety.

A hospital is a huge complex of mega medical practices by hundreds or thousands health staffs and huge patients, every day. Such a mega complex may generate massive medical errors every day, every place, so huge amount and huge kinds of practices happen in dairy patient safety world in a hospital. Patient safety world is also a huge complex body of sciences, technologies and arts.   Smart healthcare is very difficult to be established.

One simple question now arises;   What is a basic framework in patient safety world?

At present, there are two major safety sciences.   First, risk science is composed with 4 basic elements; risk assessment, risk management, risk communication and risk governance. Assessment, management, communication and governance are the fundamental tools in safety promotion.

Second, human factors is another major safety science. Human factor science conducts to prevent risk before accident generation, and to prevent crisis after accident generation.

Combination of risk science and human factors can generate H-R Model as shown in Table 1.   The Model discloses 8 basic categories for patient safety practices.   At the stage before medical accident and error, patient safety practices are performed based on clinical risk assessment, clinical risk management, clinical risk communication and clinical risk governance to prevent risk.   On a while, at the stage after medical accident or medical error, patient safety practices should be performed based on clinical crisis assessment, clinical crisis management, clinical crisis communication and clinical crisis governance to prevent crisis.

The Model summarizes patient safety world.   The Model can allow us to check and evaluate effectiveness of a total complexed system in patient safety activities in healthcare. So, the Model is applicable to "stress test" for healthcare safety.   At present, "Stress Test" is carried out in bank to prevent bank crush, and in atomic power plant to prevent plant crush.

【H-R Model】

(H: Human Factors)

(R: Risk Science)	Before accident --- risk prevention	After accident--- crisis prevention
Assessment	Clinical risk assessment	Clinical crisis assessment
Management	Clinical risk management	Clinical crisis management
Communication	Clinical risk communication	Clinical crisis communication
Governance	Clinical risk governance	Clinical crisis governance

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