

# Promoting & improving safety culture in the medical sector



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# Safety culture?



# Heinrich's accident triangle



**Heinrich HW. *Industrial accident prevention; a scientific approach*, 1st edn. New York: McGraw-Hill Book Company, Inc., 1931.**

Primum non nocere

- First, do no harm

# Radiation martyrs memorial - Hamburg



Fig. 12-8. The stelae honoring the pioneers who died victims of their exposures to radiations (1935).

# Chernobyl



# Safety culture definition



“That assembly of characteristics and attitudes in organisations and individuals which establishes that, as an over-riding priority, nuclear plant safety issues receive the attention warranted by their significance”

INSAG 1988

“The product of individual and group values, attitudes, perceptions, competencies and patterns of behaviour that determine the commitment to, and the style and proficiency of, an organisation’s health and safety management”

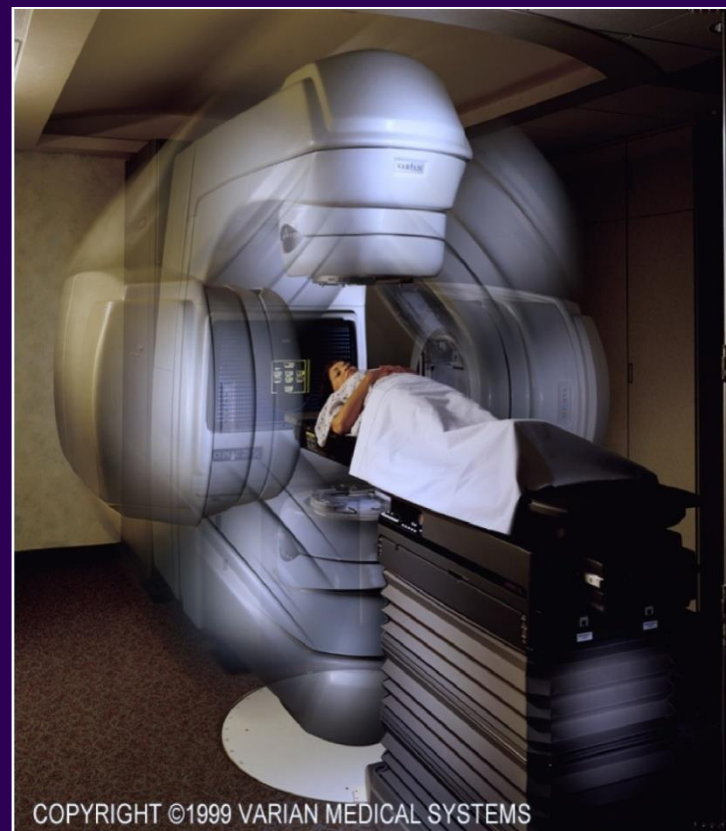
HSC

“Organisations with a positive safety culture are characterised by communications founded on mutual trust.....and by confidence in the efficacy of preventative measures”

ACSNI



# Radiotherapy

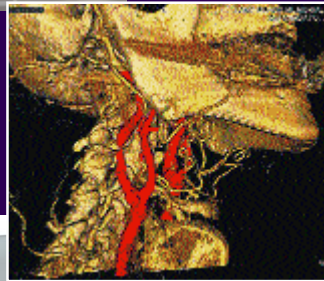


# When it goes wrong



**Erythema from  
Radiotherapy  
treatment**

# CT & interventional radiology



# When it goes wrong...



# When it goes wrong...



**The New York Times**

**Radiation Overdoses Point  
Up Dangers of CT Scans**

# Media attention



THE RADIATION BOOM

## Radiation Offers New Cures, and Ways to Do Harm

By WALT BOGDANICH

Published: January 23, 2010

## Radiation burns 'clerical error'

The Times | Published: 28 October 2006 | UK News

## As Technology Surges, Radiation Safeguards Lag

By WALT BOGDANICH

Published: January 26, 2010

## Girl is given radiation overdose 17 times after hospital blunder

The Times | Published: 09 February 2006 | Health

## Radiation Bills Raise Question of Supervision

By WALT BOGDANICH and REBECCA R. RUIZ

Published: February 25, 2010

## Over 200 hurt or killed by botched radiation

*Lois Rogers*

The Sunday Times | Published: 30 April 2006 | UK News

THE RADIATION BOOM

## A Pinpoint Beam Strays Invisibly, Harming Instead of Healing

By WALT BOGDANICH and KRISTINA REBELO

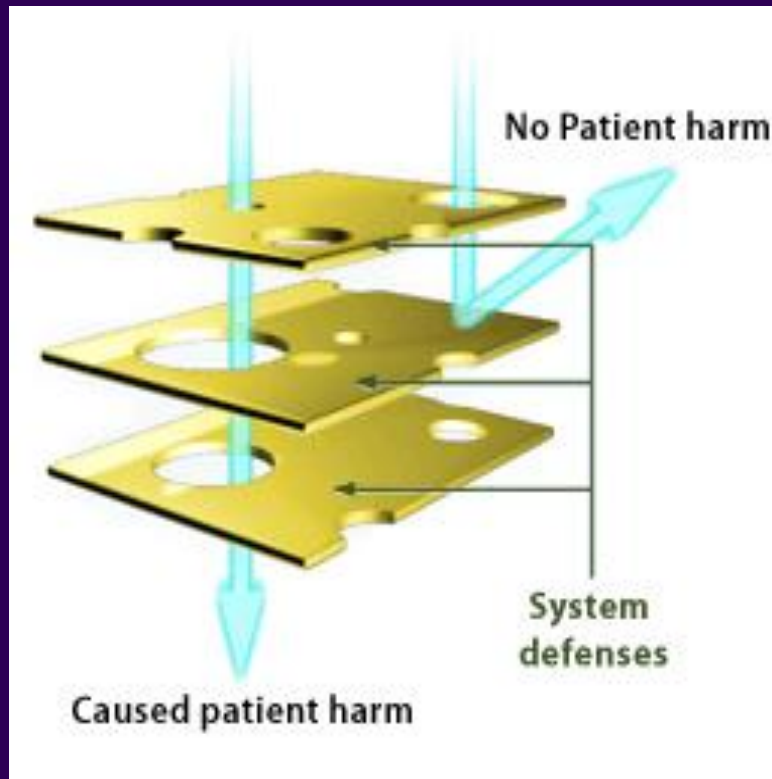
Published: December 28, 2010

## Poor radiotherapy service hits patients' chances of survival

*Nigel Hawkes*

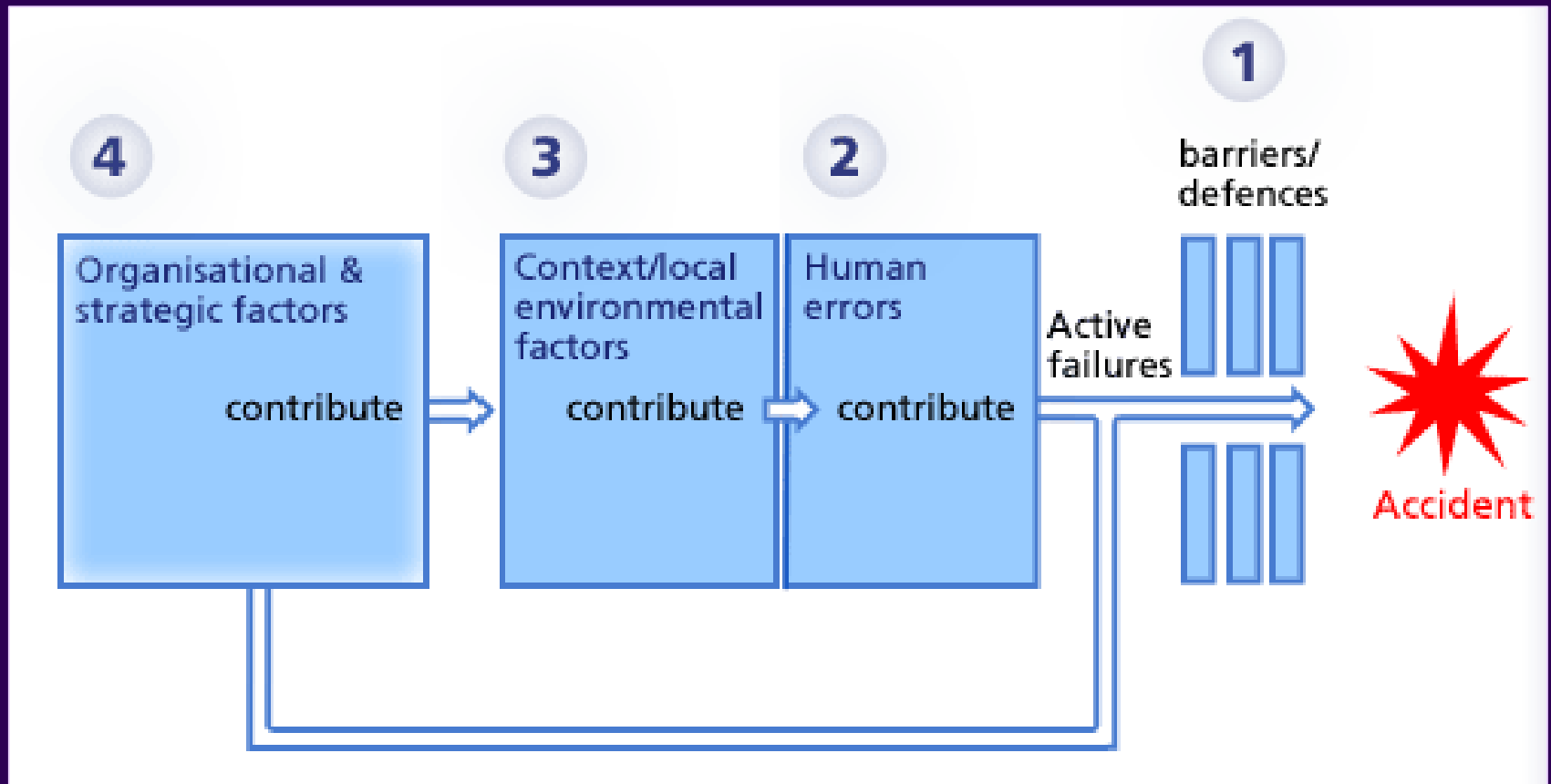
The Times | Published: 12 May 2007 | Health

# How it happens



Reason's 'Swiss cheese' model

# Influences



<https://report.npsa.nhs.uk/rcatoolkit/course/iindex.htm>



# How to promote safety culture - initiatives at all levels



- International – Directives
- National – Regulations
- Professional – Guidance
- Local – Practical approaches

# Safety culture definition



“The assembly of characteristics and attitudes in organisations and individuals which establishes that, as an over-riding priority, protection and safety issues receive the attention warranted by their significance”

IAEA BSS 2011

## Responsibility of Governments, Regulators, Management, Professional Bodies and Individual Professionals

- Commitment
- Common understanding
- Support
- Participation
- Accountability
- Open communication
- Questioning and learning attitude
- Removal of complacency

STATUTORY INSTRUMENTS

2000 No. 1059

HEALTH AND SAFETY

The Ionising Radiation (Medical Exposure) Regulations 2000

Made - - - - 13th April 2000

Laid before Parliament 14th April 2000

Coming into force  
except for regulation 4(1)  
regulation 4(1) and 4(2)

STATUTORY INSTRUMENTS

2006 No. 2523

HEALTH AND SAFETY

The Ionising Radiation (Medical Exposure) (Amendment) Regulations 2006

Made - - - - 13th September 2006

Laid before Parliament 21st September 2006

Coming into force - - 1st November 2006

The Secretary of State, being the Minister des European Communities Act 1972(b) in relation to radioactive substances and the emission of ionising radiation, hereby makes the following Regulations:

**Citation and commencement**

- 1.—(1) These Regulations may be cited as the Ionising Radiation (Medical Exposure) Regulations 2000 and shall come into force—
- (a) except for regulation 4(1) and 4(2) of these Regulations;
  - (b) as regards regulation 4(1) and 4(2) of these Regulations, on the 1st November 2006.

**Interpretation**

2.—(1) In these Regulations—

- “adequate training” means training which is such that a person who has received it is capable of performing the duties which are assigned to him or her in connection with the practice of medicine;
- “adequately trained” shall be taken to mean a person who has received adequate training;
- “appropriate authority” means the Secretary of State or the appropriate authority for Wales as regards Wales, or the appropriate authority for Scotland as regards Scotland;
- “assessment” means prior determination of the suitability of a person for the practice of medicine;
- “child” means a person under the age of 16 years or, in Scotland, under the age of 18 years;
- “clinical audit” means a systematic and controlled review of the performance of medical practitioners in the practice of medicine which seeks to improve the quality of the services provided;
- “diagnostic reference levels” means dose levels for radioactive medicinal products which are used as a basis for the assessment of the radiation dose to patients or staff in connection with the practice of medicine;

The Secretary of State, being the Minister designated(a) for the purposes of section 2(2) of the European Communities Act 1972(b) in relation to the making of safety measures in regard to radioactive substances and the emission of ionising radiation, in exercise of the powers conferred by that section, makes the following Regulations:

**Citation and commencement**

1. These Regulations may be cited as the Ionising Radiation (Medical Exposure) (Amendment) Regulations 2006 and shall come into force on the 1st of November 2006.

**Interpretation**

2. In these Regulations “the 2000 Regulations” means The Ionising Radiation (Medical Exposure) Regulations 2000(e).

**Amendment of the 2000 Regulations**

- 3.—(1) The 2000 Regulations are amended as follows.
- (2) In regulation 2 (interpretation) in paragraph (1)—
- (a) in the definition of “appropriate authority”, for “Secretary of State” substitute “the appropriate authority”;
  - (b) after the definition of “equipment” insert the following definition—  
““ethics committee” means:  
(a) an ethics committee established or recognised in accordance with Part 2 of the Medicines for Human Use (Clinical Trials) Regulations 2004(e);

(a) S.I. 1977/1718.  
(b) 1972 c. 68.

(a) S.I. 1977/1718.  
(b) 1972 c. 68.  
(c) S.I. 2000/1059, amended by S.I. 2004/1031.  
(d) 2000 c. 43.  
(e) S.I. 2004/1031.

The Ionising Radiation  
(Medical Exposure)  
Regulations (IR(ME)R) 2000  
& 2006. IR(ME)R implements  
the European Communities  
Council Directive on medical  
exposure 97/43/Euratom.

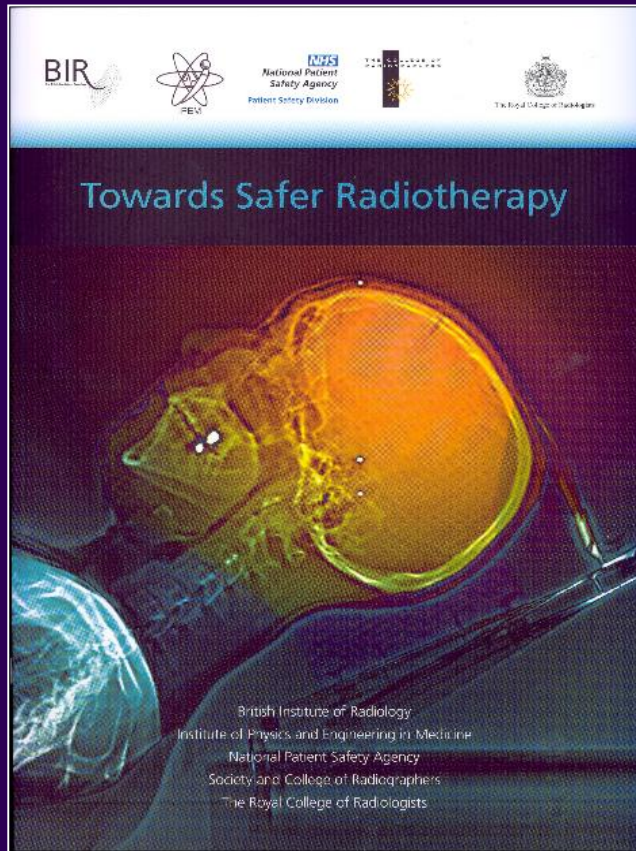
# UK guidance– “An organisation with a memory (2000)”



“With hindsight, it is easy to see a disaster waiting to happen.”

“We need to develop the capability to achieve the much more difficult - to spot one coming”

*An organization with a Memory DoH 2000*



**37 recommendations  
regarding safety culture  
including**

**departmental culture  
resources, structure and  
working practices  
safety management  
patient & staff involvement  
change management  
quality assurance systems  
national implementation**

- Management support for development of safety culture
- Safety is integral to clinical practice and systems
- Top down, bottom up
- Living process
- “Rule of 3”

# Long way to go - tip of the iceberg...

