Introduction/Background

Growing Recognition of need for Ethical considerations in Radiation Protection.

This is ISEEH 4
ICRP 138 – Fundamentals- retrospective
Individual Sensitivity/susceptibility – prospective
Radiation accidents –SHAMISEN 2017

Radiation emergency situations; Improvement of Medical & health surveillance
MASSIVE STEP FORWARD

What are we talking about?

- SHAMISEN – NUCLEAR Emergencies
- Title- Populations Affected By RADIATION Accidents
- Very Reactor Orientated – Chernobyl Fukushima

recommendations on stable iodine

Can have Nuclear with no off-site (Tokaimura), Radiation with off-site (Goiania), Nuclear without fission (Palomares)

‘RADIATION ACCIDENTS WITH OFF-SITE CONSEQUENCES’

A Personal Perspective Radiation accidents with Off-Site Consequences

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THE NEED FOR CLARITY TO ALLOW ETHICAL ACTIONS

THE DIFFERENCE BETWEEN RADIATION & CONTAMINATION

PRESENTATION PLAN

1. SOME SPECIFIC ISSUES

   ‘More good than harm’

   Accident Definition

   Technical issues – What we plan for?

   Off-site Worker Dose

2. Attempted Numeric Classification of Categories of Health Study after an Accident

SHAMISEN Rec 1. ‘More Good than Harm’

Radiation Accident Intervention

- Based on Averted Dose
- Balance of risk – countermeasure vs dose
- Same as medical treatment-Medical Ethics
- Population Based-Public Health Ethics

ONLY WAY TO GUARANTEE ‘NO HARM’ IS DO NOTHING

‘HARM’ WILL CONTINUE UNLESS YOU DO SOMETHING

Shamisen Rec. 8 ‘Early Response Protocols’, Rec. 9 ‘Plan Countermeasure Protocols’, Rec.11/12 ‘Prepare Action Frameworks’, Rec.13 Engage Stakeholders and Communities in Preparedness

IN SHORT – ‘BE READY’

Works Much Better if SET UP EARLY

- Right People
- Right Place
- Command and Control

What is the Trigger ?

DEFINITION OF AN ACCIDENT

Consequences of False Alarms (Not sure there have ever been any)

IN SHORT ‘KNOW THE PLANT’

SHAMISEN Rec.7 Radiation Protection Culture, Rec.14 mentions plant conditions and plant representatives.

(NO MENTION OF RADIATION SAFETY CULTURE)

WHAT ARE WE PLANNING FOR? Maximum Design, Maximum Credible ????????Extendibility??

WHAT DO WE EXPECT TO HAPPEN?

(RADIATION & NUCLEAR)

‘QUALITY OF THE SAFETY CASE’

‘QUALITY OF REGULATION’

‘RISK ASSESSMENT PROCESS’

‘TRAINING OF STAFF – EXERCISE THE ENGINEER’

OFF SITE WORKER DOSE

(Shamisen Rec. 12 Prepare frameworks focused on dose assessments for workers)

PUBLIC= DOSE AVERTED WORKERS=DOSE LIMITATION

Growing acknowledgement that Emergency Worker risk is NOT just Acute

Twin Tower Studies Etc.

(Increasing emphasis on life saving rather than protecting property)

CAN BE PROTECTED (Respiratory, countermeasures)

ACCURATE DOSE ESTIMATION

Normal DOSE LIMITS ? NO GREATER THAN THOSE THEY SEEK TO PROTECT??? WHAT??????

SEMANTICS, CLARITY, DEFINITIONS
Why I got Concerned

HEALTH SURVEILLANCE

WHO- normally health checks for the early detection of occupational disease.

Ionising radiations – real occupational disease; early radiologists, radium dial painters. In the past.

Dose regulation had eliminated deterministic effects, less cancer deaths than the general population.

ICRP 60

Medical surveillance- purpose of determining the fitness for work

WHO DEFINITIONS

PUBLIC HEALTH SURVEILLANCE Continuous systematic collection and analysis of health related data needed for the evaluation of public health practice.

HEALTH SCREENING

Process of identifying healthy people who may be at increased risk of disease or condition; simple tests across APPROPRIATE population

EPIDEMIOLOGY

Study of distribution and determinants of health.

What does SHAMISEN Say?

Health Surveillance is in the Title

Definitions differ from WHO

Rec. 3 Encourage a Health Surveillance strategy

Rec. 4 Ensure Health surveillance reflects autonomy and dignity of population

Rec. 5 Review existing health monitoring systems

Rec. 11 Framework for epidemiological protocols

Rec.19 Continued dose assessment of population

Rec. 25 Launch systematic health screening based on appropriate justification

Rec. 26 Clarify objectives and expected results of epidemiological study

I WAS CONFUSED

WHY UNDERTAKE HEALTH RELATED STUDY?

1.For individuals – Health Benefit-Treatment

- Information

2. Learning from experience

- estimate of consequence
- radiological risk
- better planning
- public information

3. Other Interests

I can use this population in my studies

Questions?

1. If single words or phrases in a single language can cause confusion, would it be a good idea to attempt a numeric categorisation (with descriptive text) of post accident Health related studies?
2. Could this be used to develop detailed ethical considerations for each type of work?

Lets give it a try!

Category 1.

Dose or Health estimation aimed at the identification of at risk individuals in need of early intervention or treatment.

- For the Individual
- Clear criteria
- Valid techniques
- Time critical
- Outcomes reduce mortality and morbidity

Category 2

Individual Dose/Risk Estimation

- For the individual(wants to know)
- Learning from experience
- Clear criteria
- Valid techniques
- Not time critical
- Outcomes important for epidemiology

Category 3

Reassurance Monitoring

- For the individual (the worried well)
- No criteria other than presentation
- Valid techniques
- Not time critical
- Outcome depends on subject knowledge (were you reassured?)

Category 4

Health Screening (as mammography, cervical screening, bowel screening)

- For the Individual
- Clear and defined criteria for inclusion
- Simple tests, valid technique, active process, offered to the appropriate (those at defined risk)
- Early diagnosis, reduced morbidity and mortality
- Effects Public Health Surveillance

Category 5

Existing Public Health Surveillance Systems. (death certification, disease reporting, disease registries)

- Learning from experience
- Population wide
- Passive systems
- Outcomes contribute to estimate of consequences

Category 6

- Enhancements to Public health Surveillance Post accident (existing systems need to be supplemented)
- Learning from experience
- Population wide
- Passive systems (?any case for more active systems)
- Outcomes contribute to estimates of consequence

Category 7

Distribution & Determinants of Health = Epidemiology. (multiple forms, post accident = prospective)

- Learning from experience
- Participants are customers
- Duty of care
- Study protocol; clear criteria
- Probably dependant on Cat 2
- Outcomes contribute to estimate of consequence

Category 8

- Unrelated Study – big group exposed to radiation, good dose data, from known hazard. High profile. Validate my technique?
- For the Researcher
- Duty of Care to participants
- Study protocol; clear criteria
- Outcomes irrelevant to Accident

Conclusions

I suggest that;

If we are to ensure ethical considerations are fully imbedded into radiation accident response, we must ensure that the important aspects and constituents of response are clear and easy to understand.

The issues around health study are of crucial importance

THANK YOU