

Trevor Pinks, Dr Marie Frusher

Dstl Environmental Sciences, Institute of Naval Medicine, Crescent Road, Gosport, Hampshire, PO12 2DL

Sick? Exposed to Ionising Radiation at Work? Due Compensation?

In a number of countries compensation schemes are in place to provide a mechanism for claimants to receive compensation for illnesses that may have been due to an exposure to radiation. The availability of compensation will depend on the national legal framework and any voluntary processes which have been agreed. The basic principles described here are generally applicable to compensation claims for radiation linked diseases. In some countries, specific groups (cohorts) are considered to have received sufficient radiation exposure to qualify for a payment without the need to quantify the exposure.

In the UK the Compensation Scheme for Radiation Linked Diseases is a voluntary scheme that is signed up to by the majority of major radiation employers and is supported by a core of Trade Unions. The scheme is separated from the UK legal system and requires a lower burden of proof than British Law. It is designed to provide generous compensation while minimising legal costs, hence benefiting both the claimant and the employer.

The scheme (Fig 1) works on the calculation of the likelihood of causation of the cancer based on an individual's radiation dose and the type of cancer they have. The level of compensation is based on the causation probability with a baseline causation value under which no compensation should be paid.

In the US the approach is similar to the UK but the compensation process is enshrined in legislation.

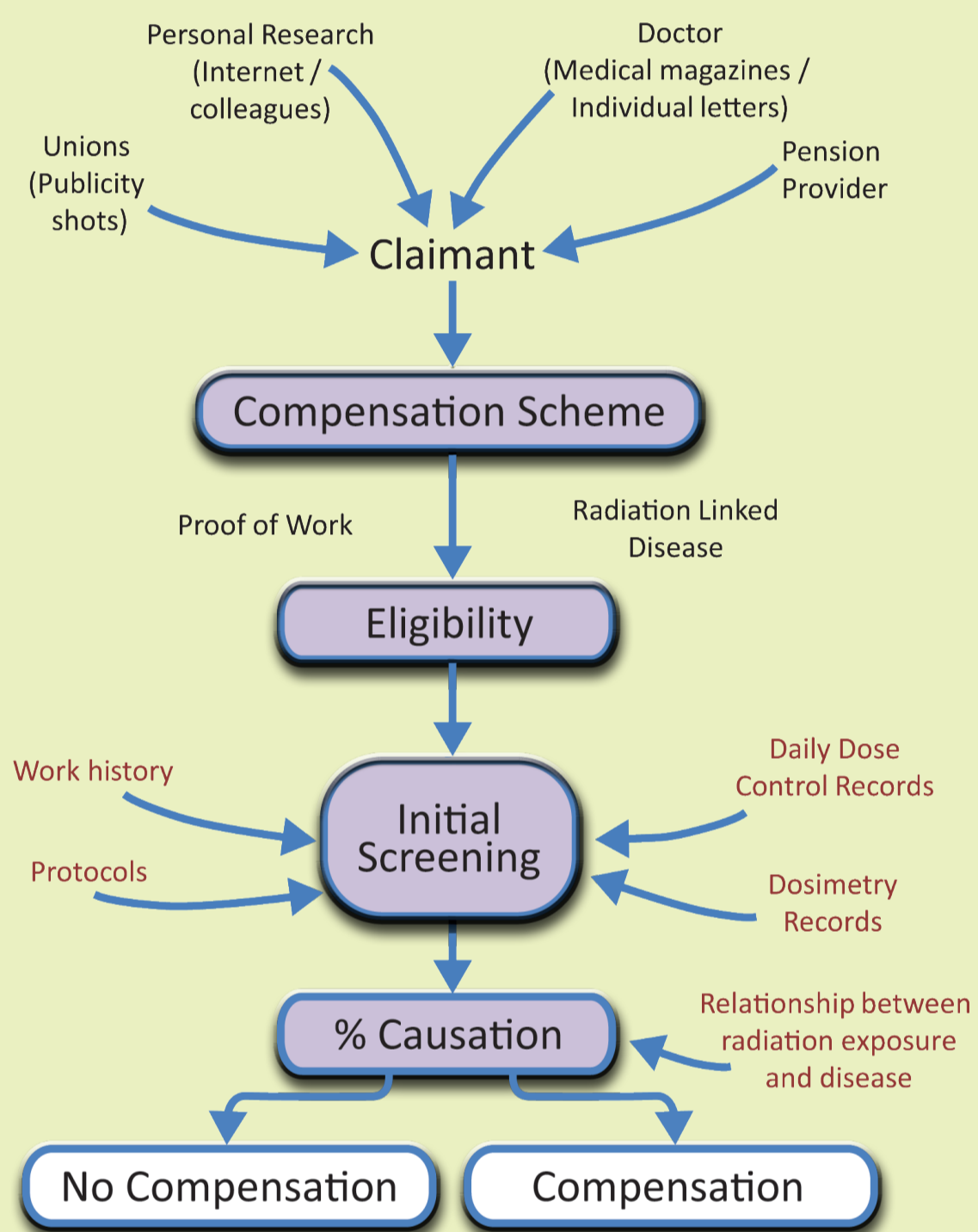


Fig 1: Compensation Scheme Process

Protocols

These are agreed guidelines for how the members of the Compensation Scheme should treat the available data in order to ascertain a claimant's individual lifetime dose. The protocols aim to ensure consistency and fairness across companies and claims.

Key Inputs:



Fig 2: Dose and personal records

- **Work History**
 - Employment start and finish dates: giving the maximum amount of years for which a claimant may have been exposed to radioactive hazards (Fig 2).
 - Type of work: some types of work are more hazardous than others.
 - Location of work: a claimant may have worked their entire career on a nuclear site but may have never entered a hazard area.
 - Radiation hazards exposed to: whether it is industrial radiography sources, radon, radium luminised articles, X-rays or other sources.
 - Amount of time on average spent in hazardous areas.
- **Dosimetry Records**
 - If the claimant was a classified person for the same company throughout their career then the lifetime exposure can generally be found from their personal dosimetry records (Fig 2).



Fig 3: Examples of dose meters past and present

Other Data

- Dedicated historical records databases holding hundreds of thousands operational dosimetry records, documents and images that are searchable by name and date of birth.
- Corporate knowledge, often companies keep records of incidents i.e. lessons learnt.
- Oral histories can provide additional information where there is very little data held.
- Site histories.
- Newsgroups, forums.

Challenges

Response to new science

- The eye dose limit changes being recommended by the International Commission on Radiological Protection may require a change to the causation calculation and that cataract cases may need to be revisited in the light of 'new' science.

Communication

- Clear, timely and accurate communication is essential making the complex science understandable to the claimant. It is equally important not to raise false hopes of enormous compensation payments.

Destruction of Records or No Records

- Records for certain types of radiation workers in the UK only needed to be kept for 2 years under current and past legislation. However, many employers have extended the retention period to allow future claims to be considered on a factual basis.
- Other paper records have been misfiled, lost during site moves or destroyed in fires and floods.
- Initially employers may not have had a legal requirement to keep records.

Based on current science, are the dose records complete?

- Sources of radiation exposure which aren't always measured such as radioactive material within the body and neutron exposure should be included in the dose estimate.
- Dose reconstructions can be made from peer exposures if the records are available or by modelling. In the US, a cohort approach has sometimes been applied in these cases to avoid the need for a detailed, case by case, dose estimate.



Legislative Compliance

- In Europe there is a need to ensure personal data is held and accessed in accordance with EU 95/46/EC Data Protection Directive.
- There are also British Standards on Evidential Weight and Legal Admissibility that apply to the storage and retrieval of data that could be used by UK courts, these provide guidance on good electronic records management.

Technology changes

- Data can be lost if it is stored in a format that is 'unreadable' after software/hardware changes or computer system 'upgrades'.
- Limits of detection for dosimeters have changed over the last 50 years and these may have an effect when calculating lifetime dose.

Summary

A well planned and supported compensation process gives the claimants a fair result in a relatively short time without the need to admit liability

There are challenges but awareness of these may save time and money.