

Occupational cancer clusters are
everywhere – why is it so and what
should we do?

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Aims

Why it is so

What should be done



What is a cancer cluster?

- Various definitions

“An unusually high number or rate of cancer”

- Usually describes one type of cancer, but may be all cancers



A few concepts about cancer

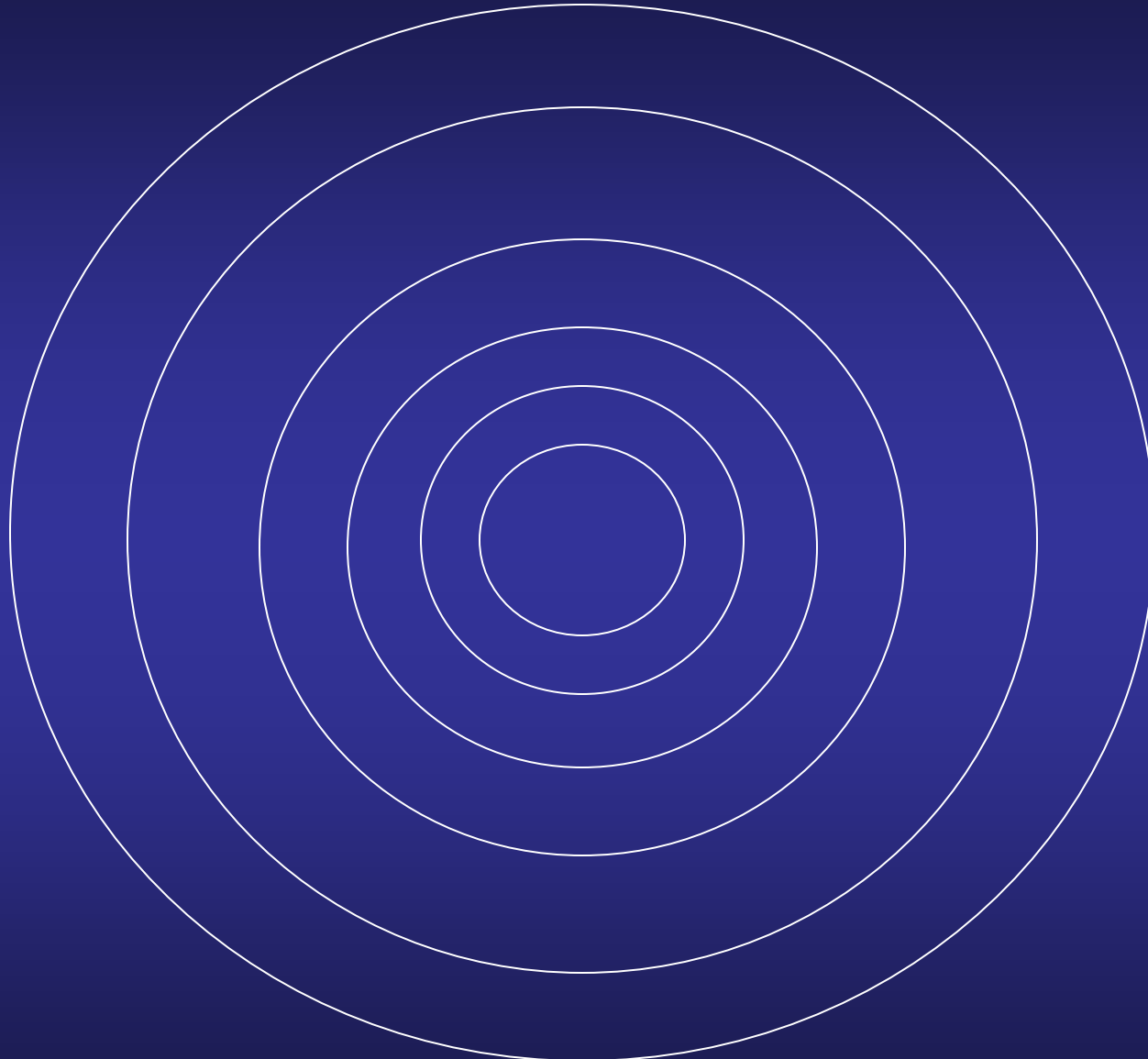
- Common disease
- Usually more common with age
- Long latency
- Usually has one or more risk factors
- Occurs randomly
 - known risk factors, but differences in rates expected due to chance

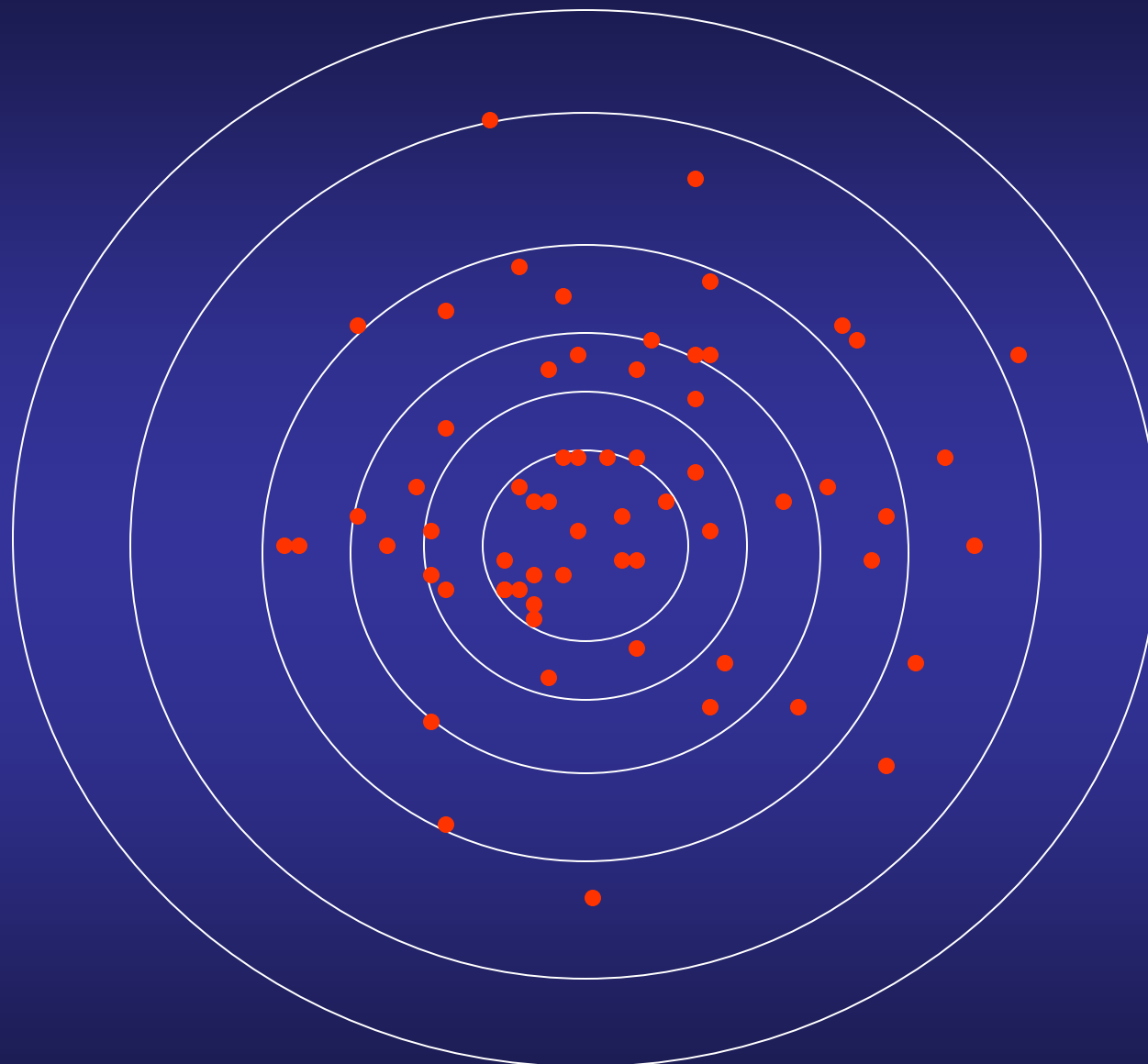


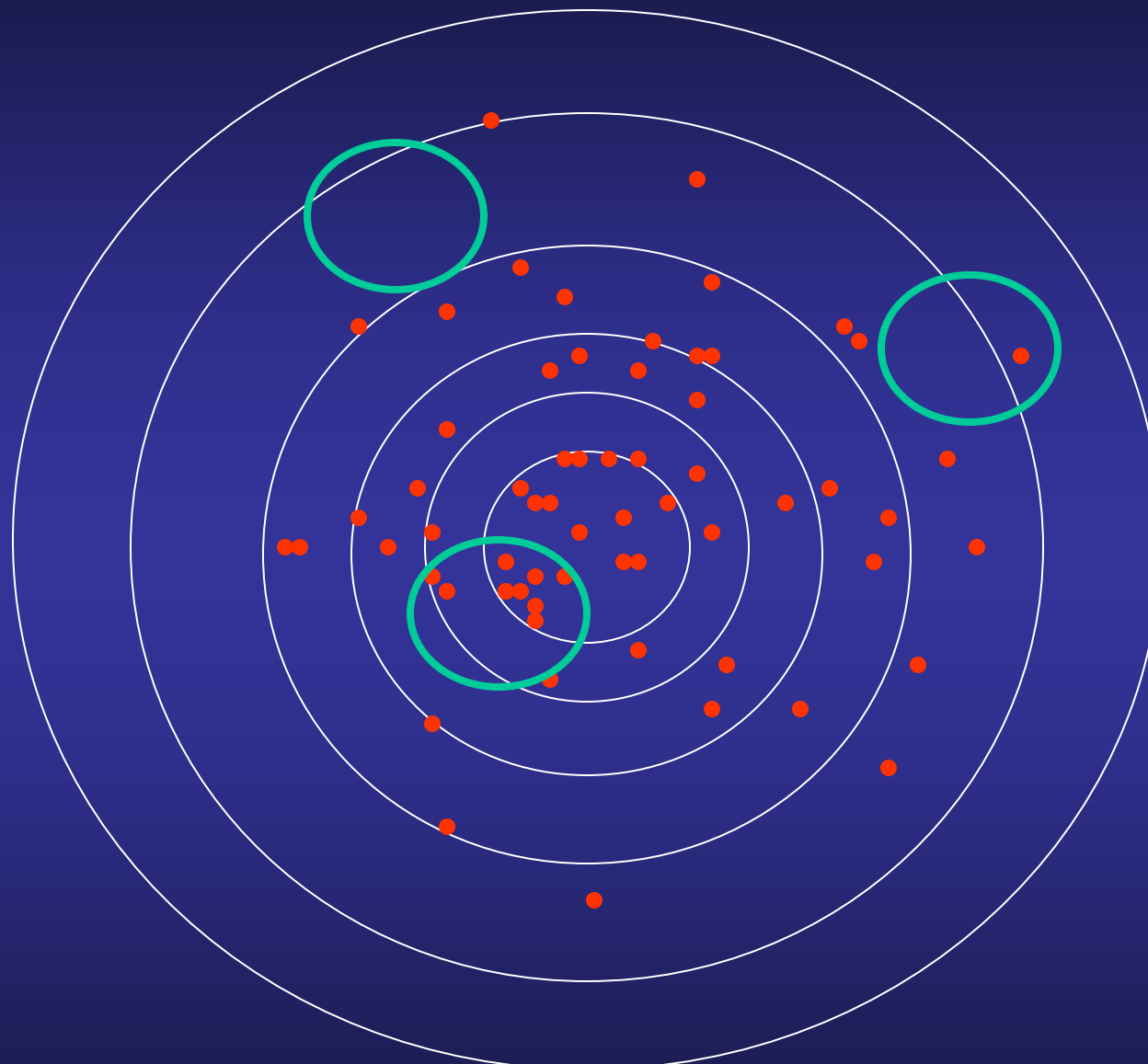
Why is it so hard??

- Most cancers can be caused by more than one type of exposure
- The same exposure can occur in different settings
- Long latency obscures the connection to exposure
- Usually no way to determine the cause in an individual case









Cancer clusters are a fact of life!



When DO concerns arise?

- Concerning exposures
- Unusual cancer type
- Young people
- Not giving initial concerns appropriate consideration
- Industrial relations or community issues



When SHOULD concerns about cancer clusters be raised?

- Number of cases?
- Type of cancer?
- Ages of affected persons?
- Type of exposures?



When SHOULD concerns about cancer clusters be raised?

- Number of cases?.....Usually need more than just a few
- Type of cancer?
- Ages of affected persons?
- Type of exposures?



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When SHOULD concerns about cancer clusters be raised?

- Number of cases?.....Usually need more than just a few
- Type of cancer?.....Rare or unusual cancers; same type
- Ages of affected persons?.....Young people
- Type of exposures?.....Known carcinogens; known connection to identified cancers



Challenges

- Lack of information about exposure
- Uncertainty about case definition
- Incomplete case identification
- Uncertainty about population at risk



Challenges

- Interpretation of statistical tests
- Public perception that there must be a problem
- Context
- Other agendas
- Ethics restrictions / requirements



Important principle 1

- If no concerning exposures are found but there is a high rate.....
- It is almost certain that the high rate was due to chance
- If still concerned, need to study another workplace/community with a similar exposure



Important principle 2

- If rate is not high but concerning exposures are found.....
- Fix the exposures!



Important principle 3

- When concerns about a cancer cluster arise, the cancers nearly always turn out not to be (or almost certainly not to be) related to work exposures.
- BUT....it is important to still investigate properly.



What should be done 1

Stage 1: review of past and current exposures

Stage 2: epidemiological analysis of cancer cases

Stage 1 and Stage 2 usually overlap

Good communication throughout



What should be done 2

- Prompt response
- Explain the challenges
- Emphasis on exposures and case characteristics rather than just on rates
- Involve all interested parties (reference group)
- Regular feedback



Change what you can change

- Stop smoking
- Exercise regularly
- Eat plenty of vegetables and fruit
- Maintain appropriate weight
- Restrict sun exposure



Conclusions

- Cancer is a common disease.
- Cancer “clusters”:
 - are expected due to random variation
 - are usually not caused by occupational or environmental exposures
 - are very rarely due to unknown exposures
 - must not be dismissed without investigation of some sort
 - good communication is essential.
- Change what you can change.



