

OSCT – CBRNE Unit



Dispersion modelling and CBRN incident planning

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The role of OSCT



- OSCT supports Home Office Ministers in developing, directing and implementing the CONTEST counter-terrorism strategy
- CONTEST is cross-government strategy
- Sets out '*the four Ps*'
 - *Pursue* – detect and disrupt threats
 - *Prevent* – reduce radicalisation
 - *Protect* – improve security
 - *Prepare* – improve response to attacks
- CONTEST describes work to reduce risks associated with CBRN attacks

CONTEST:
The United Kingdom's
Strategy for
Countering Terrorism

July 2011

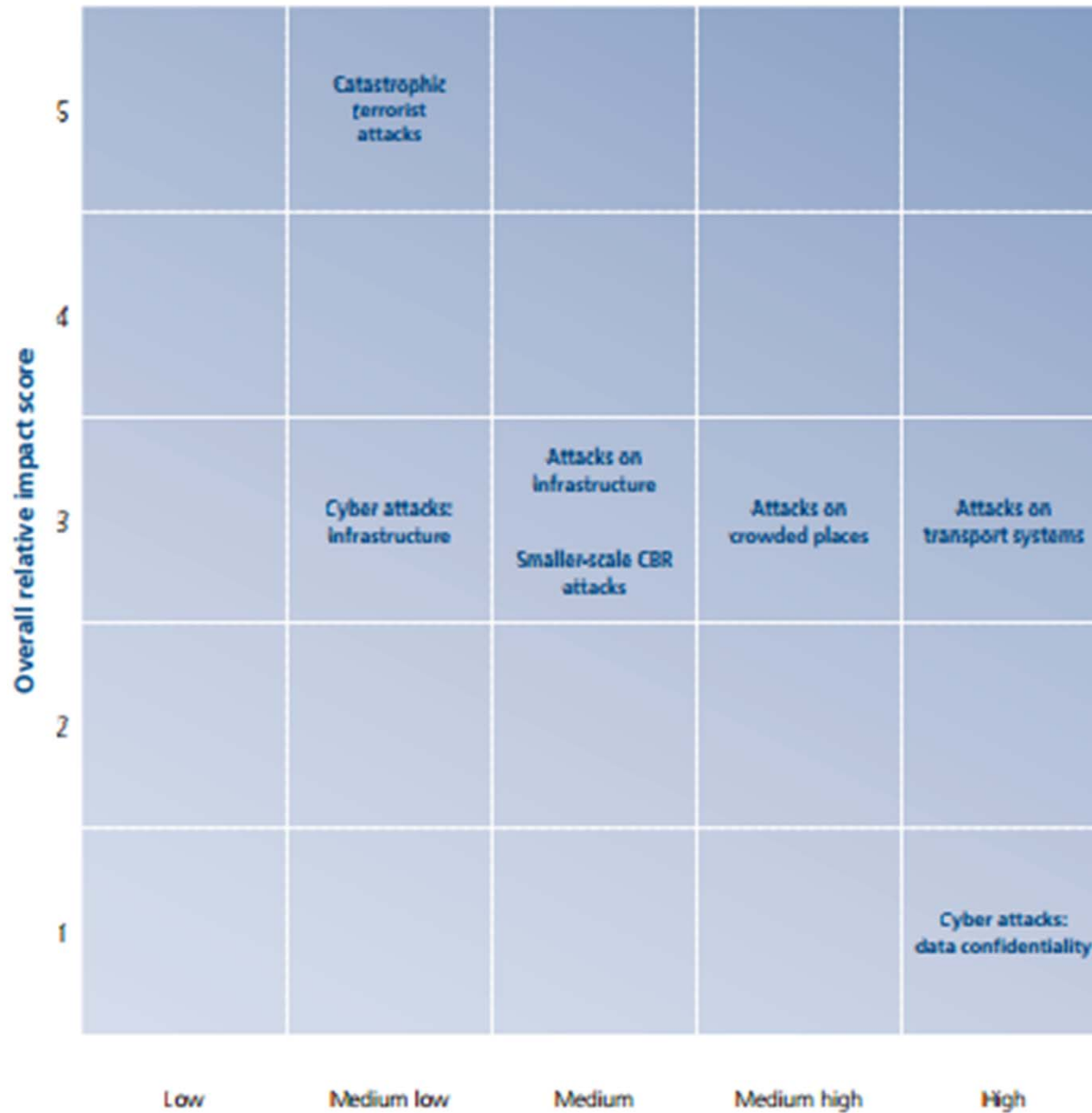
 HM Government

High impact CBRN risks



- National Risk Assessment describes biological and nuclear attack as highest risk scenarios we face
- Under *Protect*, restricting access to CBRN materials is a priority
 - Legislation and regulation
 - Education and engagement with industry and academia
- But impact of a nuclear or biological attack is such that we must also conduct work under *Prepare*
- OSCT has asked Cabinet Office to draw up response plans for such eventualities

Figure 1: Risks of terrorist and other malicious attacks

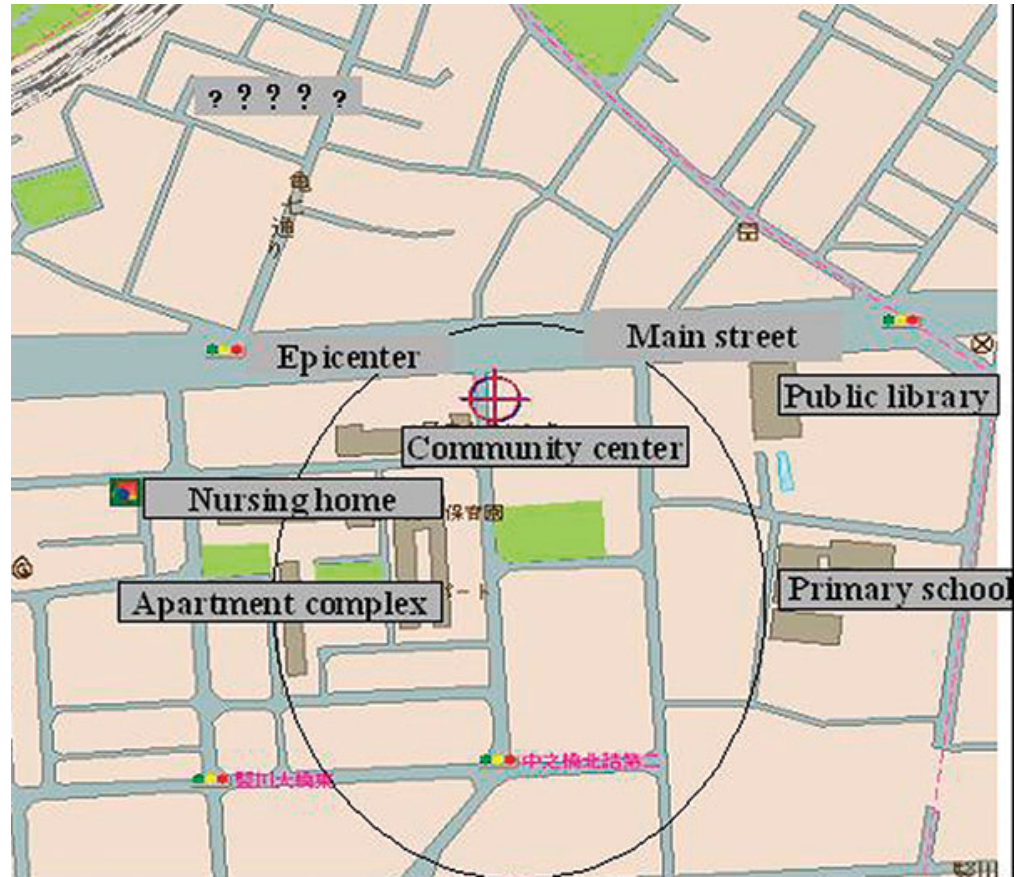


What is high impact CBRN?



- We do not publish the scenarios that we plan for
- In 1994 Aum Shinrikyo launched Tokyo anthrax attack
- Attack failed – vaccine strain used
- But estimated ‘high risk’ population of around 7000*

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- In 1994 Aum Shinrikyo launched Tokyo anthrax attack
- Attack failed – vaccine strain used
- But estimated ‘high risk’ population of around 7000*
- A high impact attack might involve:
 - Urban area / crowded space
 - Aerosol dispersion – fog or dry powder
 - Multiple releases? Moving dispersion point?

*Takahashi et al, EID, 2003

High impact CBRN priorities



- *‘...focus on those measures that would be likely to have the greatest effect in reducing deaths and illness and, where possible, the widest utility for other kinds of emergency. We will therefore:*
 - *Build... stocks of antibiotics.. and emergency distribution arrangements*
 - *Improve the capacity... to detect, monitor and track bio-terrorist and radiological hazards*
 - *Update... response planning, ensuring that contingency planning for shelter and evacuation is adapted to the scale and nature of these kinds of disaster...’*

CONTEST annual update 2013 – gov.uk

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The role for modelling



- Dispersion modelling can help inform a number of specific areas
- What size might a plume of hazardous material be?
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 - *How do we manage this risk?*

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- What size might a plume of hazardous material be?
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 - *What risk might these people be exposed to?*
 - *How do we manage this risk?*
- An understanding of the indoor hazard is a key gap

Building penetration modelling



- A key knowledge gap is how the hazard varies between the outdoor and the indoor environment with time
- A plume creates a transient hazard over an area
- Initially, the indoor environment may be safer
- The indoor concentration of hazard material will increase with time
- At what point is the indoor hazard greater than the outdoor one?
- Crucial to public guidance over sheltering
 - Residential vs commercial property
 - Role of HVAC systems
- And this is where modelling - and the ADMLC - can come in!

Questions?

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PURPOSE

RS Rapid diagnostics presentaion

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