

Bombs, Drones, and Iridium: Emerging Technologies and CBRN Terrorism



Workshop on Autonomous and Remotely Operated Systems: Benefits and Challenge to Nuclear Security

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Bottom-Line

- Emerging technologies are moderately reducing the barriers to CBRN weapon acquisition and delivery and offer new means of mass casualty attacks.
- Within the nuclear and radiological terrorism space, worry most about drones.



Outline

- Threat Landscape
- Changing CBRN Terrorism Risks
- Policy Recommendations



Threat Landscape (1/2)

- Continued motivation
 - ISIS chemical attacks
 - German ricin plot
 - Ideologies of mass harm
- Low capabilities
 - Organizations degraded
 - Rise of lone wolf actors
 - Focus on unsophisticated attacks



Threat Landscape (2/2)

- CBRN terrorism is hard:
 - High costs, specialized equipment
 - Significant domain and tacit knowledge
- Also may not be worth it:
 - Strategic costs
 - Other attacks are easier



Changing CBRN Risks (1/2)

- Emerging technologies are lowering some barriers to CBRN weapon acquisition and delivery
 - 3D printing lab equipment and material; pathogen acquisition via synthetic biology
 - Drones aiding operations and delivery systems
- However, major barriers remain
 - Significant domain and tacit knowledge
 - High resource costs
 - Uncertainty and risk



Changing CBRN Risks (2/2)

- Emerging technologies offer new methods of mass casualty
 - Drone attacks
 - Cyber attacks on cyber-physical systems
 - Novel nanotech weapons
- Some potential advantages over CBRN weapons
 - Often easier to acquire equipment and carry out attacks
 - Different knowledge sets



Policy Implications

- Monitor for signs of enhanced terrorist capability
 - Overall capability and specific domain knowledge
- Assess and improve facility security
 - Invest in counter-drone capabilities
 - Improve cyber-defenses
- Need for inter- and intra-governmental collaboration

