Codes of conduct for scientists and the Biological Weapons Convention:

(Layers of Codes)

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Issues to be discussed in this presentation

- What are the roles of codes in context of the BWC?
- Why is it important to raise awareness of the BWC among biological scientists?
- Do we need one code or 'layers' of codes?
- How should we approach the development of codes?
- How do codes fit into the teaching of biology?
- Relevance to Chemical Weapons Convention (CWC)

Biological Weapons Convention

- Negotiation of Treaty 1969-71
  - No verification measures
- BWC Opened for Signature 10 April 1972
- BWC Entered into Force 26 March 1975
- Decisions taken at Review Conferences
  - Convened approximately every 5 years.
- 'Confidence Building Measures' agreed in the late 1980s
- Efforts to Negotiate BWC Protocol 1993 -2001
  - Not successful in 2001
- Intersessional Program of Work 2003 – present.

BWC Intersessional Program of Work (2003—05)

Discuss, develop common understandings and promote effective action on:

- 2003: adoption of necessary national measures to implement the prohibitions set forth in the BWC, including enactment of penal legislation;
- 2003: national mechanisms to establish and maintain the security and oversight of pathogenic micro-organisms and toxins;
- 2004: enhancing international capabilities for responding, investigating, alleged use of BW or suspicious outbreaks;
- 2004: strengthening institutional efforts and mechanisms for surveillance and combating infectious diseases ...;
- ***2005: the content, promulgation, and adoption of codes of conduct for scientists***

Subsequent RevCons agreed to continue consideration of codes of conduct.

BWC - Codes of Conduct for Scientists

Issues to be addressed:

- Why are Codes of Conduct part of the BWC intersessional program of work?
- Why should there be a BWC outreach / education process?
- Why should Codes be part of a BWC outreach / education process?

Dual-use Dilemma

Public health / pharmaceuticals / agriculture

- Materials - seed cultures of pathogens, toxins
- Equipment - incl. fermenters, centrifuges, freeze dryers
- Technology and knowledge ('know-how')

Biological weapons / Bioterrorism

Advances in biosciences

Globalisation of biotechnology

BW program could be obscured within biotech industry

Inadvertent assistance to bioterrorism

The spread of materials, technologies and 'know how' relevant to the development of biological weapons poses a serious BW-proliferation and bio-terrorist threat.

The Dual-use Dilemma

How to prevent the mis-use of biological sciences for BW or other hostile purposes, without hindering peaceful applications of biological sciences.

Key issues:

- dual-use nature of materials and equipment associated with biological weapons
- the difficulty in recognising when an apparently innocent research project (or transaction) may have a hostile intent
- the possibility that research being undertaken for beneficial objectives may have hostile applications.

Dual use research of concern (DURC)

Life sciences research that is intended for benefit, but which might easily be misapplied to do harm.

The possibility that dual use research might result in misuse, either intentionally or accidentally, is a long-standing concern of science.

Includes biological research that:

- Demonstrates how to render vaccines ineffective
- Confers resistance to antibiotics or antiviral agents
- Enhances virulence of pathogen / renders non-pathogen virulent
- Increases transmissibility of pathogen
- Alters host-range of pathogen
- Enables evasion of diagnosis/detection
- Enables weaponization of biological agent or toxin

Needs appropriate form of national oversight.

What are the roles of the codes in the context of the BWC?

Raise awareness of BWC-related issues, including:

- BWC-International obligations
- BWC-related domestic laws and regulations
- Dual-use dilemma
  - Including DURC / 'experiments of concern'
- Possible inadvertent assistance to BW-proliferation / bio-terrorism

Facilitate development of responsible culture and behaviour in individual scientists and in workplaces, and appropriate workplace regulations and oversight, that minimise the risk of mis-use of biological sciences for hostile purposes.

Code of Conduct – Some BWC-related issues

Suggestions in the BWC context have ranged from focus on:

- full awareness of the scientific community of national laws related to biological activities, and full compliance with all such laws ('code of practice'):

to a focus on

- ethical considerations, including scientific responsibility when working on certain research projects that may lead to discoveries that could make BW more effective ('code of ethics') ; and

- One 'universal' code or a number of codes?

'Top Down' or 'Bottom up'??

- The various scientific communities are much more likely to accept, and take seriously, non-proliferation regulations and a Code related to BW issues if they fully understand the reason for the Code and if they have a sense of ownership in the Code.

- To win the 'hearts and minds' of the relevant scientific communities, the best approach may be to develop a set of elements or themes which the societies and institutions/ workplaces can then craft into appropriate language.

Layer of Codes*

It may be useful to think of Codes of Conduct as occurring in a number of layers, including:

- ***Guiding Principles (A Universal Code cf. Hippocratic Oath)***
- ***Scientific Society Codes (Codes of Ethics)***
- ***Institutional or Workplace Codes (Codes of Practice)***

We would see these various codes as complementary and mutually reinforcing, and may be most effective if developed as a package.

* Australia, Working Paper, BWC/MSP/2005/MX.35 (24 June 2005)
* Chair 'Synthesis Paper', BWC/MSP/2005/L.1 (16 November 2005)

Guiding Principles / Universal Code

A short aspirational code, containing general principles and referring to ethical norms, could be the basis of a universal code (compare with Hippocratic Oath).

Implementation of this would effectively be a 'top-down' approach.

Scientific Society Codes (Code of Ethics)

(either national or international societies)

There could be new codes developed by societies, or elements could be added to their existing codes, to include:

- the general principles;
- awareness of the BWC and the obligations under the BWC;
- awareness of the dual-use nature of biological sciences; and
- a commitment not to undertake any activities prohibited by the BWC.

Institutional or Workplace Code (Code of Practice)

(more detailed codes applicable to a particular workplace)

The code could either be a new code, or elements added to an existing workplace code. These elements would include:

- full awareness by the scientific community of national laws related to biological activities;
- commitment to full compliance with all such laws; and
- a focus on ethical considerations, including scientific responsibility when working on certain research projects that may lead to discoveries that could make BW more effective.

NB. a 'bottom up' approach. Could become part of a formal workplace agreement.

[Name of Institution] Workplace Code [Elements]

The **[Name of Institution]** Workplace Code is the following a set of requirements developed to ensure that scientists employed by **[Name of Institution]** comply with all obligations, legislation, regulations and oversight mechanisms, and to prevent activities by **[Name of Institution]** scientists which would deliberately or inadvertently assist in the development of biological weapons.

1) Awareness of international obligations under the Biological Weapons Convention (BWC) (see Annex 1).
2) Awareness of national legislation and associated regulations related to Australia's obligations under the BWC (see Annex 2).
3) Awareness of the various regulatory and oversight mechanisms applicable to the **[Name of Institution]** research program, including the **[Name of Institution]** Research Oversight process / Advisory Committee , the Institutional Biosafety Committee (IBC), the Office of the Gene Technology Regulator (OGTR) and Australian Quarantine (AQIS) (see Annex 3).
4) A personal commitment by all scientists employed by **[Name of Institution]** Workplace Code to fully comply with all international obligations, national legislation and related regulations, and the various regulatory and oversight mechanisms applicable to the **[Name of Institution]** research program.
5) Awareness of the dual-use nature of biological materials, equipment and 'know-how', and a personal commitment by all scientists employed by **[Name of Institution]** to not deliberately or inadvertently assist anyone in any BW-proliferation or bio-terrorism activity.
6) A personal commitment by all scientists employed by **[Name of Institution]** to report to Senior Manager, **[Name of Institution]** any issue or activity that they consider may be relevant to compliance with BWC obligations, Australia's national legislation and associated regulations, or **[Name of Institution]** regulations and oversight mechanisms.

Status of Codes with BWC States Parties in 2021

- The BWC States Parties have not yet been able to come to a consensus decision on the exact wording of a BWC Code of Conduct.
- There is currently a proposal by China/Pakistan for a Model Code of Conduct which has been well received and will hopefully enjoy consensus at the next RevCon (2022).
- But States Parties do not need to wait until there is a consensus decision in Geneva for a particular Code before they develop their own national codes, or encourage their scientific societies or workplaces to develop new codes (or add elements to their existing codes).
  - Indeed, that is what many States Parties have already done.
- In any case, Codes of Conduct will always be living documents, so any Code developed now on a national basis can always be updated in the light of progress in codes developed elsewhere, including the China/Pakistan proposal and the RevCon.
  - Indeed, the processes of developing codes on a national basis will also provide useful inputs into the international efforts in Geneva for the development of an agreed Code.

Lessons so far: Codes/Ethics teaching within biology courses?

One possible approach :

- BWC issues taught in 1st year undergraduate level
  - Perhaps part of 'scientist responsibility/ ethics' course?
- A refresher course at beginning of postgraduate program.
- Short courses offered to workplaces
  - Either by academia, scientific societies or gov't outreach

Within academia, Codes will be more effectively taught by academics with strong personal commitment to the objectives of the BWC.

Hence, need for Workplace Codes in Biology Departments at academic institutions.

New partnerships between academics / National Authorities / senior government scientists/industry

Lessons so far: Cooperative Efforts

- To be effective, the development of Codes and the teaching of BWC ethics will require high levels of cooperation between academia, government officials and the broader scientific community, including scientific societies and peak industry groups
  - and a strong sense of responsibility and vigilance within the relevant scientific communities.
- This will need to be a continuing process because of the changing players and changing technologies in the various biological sectors
  - cannot do it once and then put a 'tick in the box'.

Additional thoughts - Relevance to CWC

- Comparable dual-use issues for chemistry practitioners
  - Similar requirements for awareness-raising, outreach, ethics, codes
- The requirement for similar layers of codes for chemistry practitioners
  - Aspirational
  - Society
  - Workplace
- Hague Ethical Guidelines (2015) (OPCW)
  - An aspirational code for chemistry practitioners
  - Includes ensuring chemicals / equipment are not used for illegal purposes
- Similarities of the objectives and roles of the various CWC-related Aspirational, Society and Workplace Codes to the various BWC Codes