

Roles of the Hong Kong Poison Control Network (HKPCN) in Control of Poisoning Outbreaks

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Poisoning



- Adverse effects occurring after exposure to known or potential toxic substance with symptoms & signs compatible with toxicity of that substance
 - organ specific or systemic
- Poisoning cases with public health impact are reported to Department of Health (DH)
 - excluding suicide/self-harm, domestic accidents & self-medication errors
 - Commonly involving Chinese herbal medicines, western drugs, oral products/slimming products adulterated with western drugs, heavy metal poisoning, etc.



Effective management of poisoning incidents



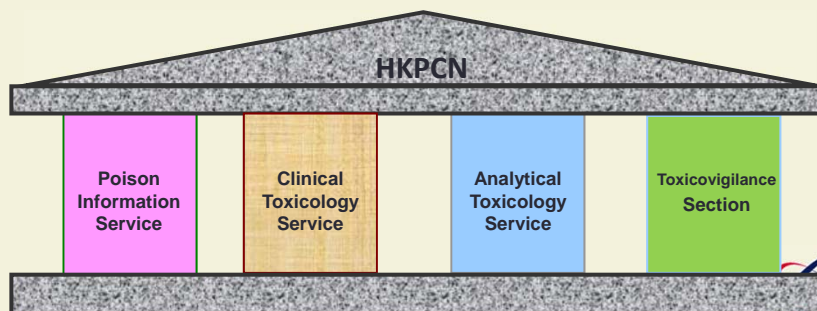
- Poison information for healthcare professionals
- Laboratory diagnosis
- Treatment
- Reporting & surveillance
- Epidemiological investigation
- Public health measures
- Training & education
- Research



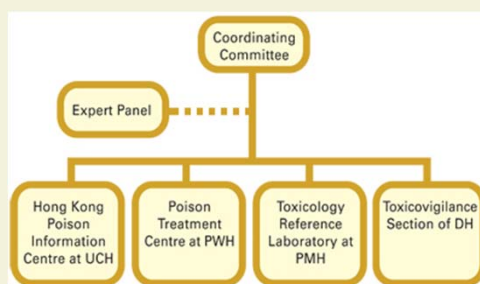
Hong Kong Poison Control Network (HKPCN)



- Established in April 2007
- Infrastructure for prevention & control of poisoning in HK
- A network for enhancement of coordination & communication among various stakeholders in managing poisoning incidents



- Comprises a Coordinating Committee, an Expert Panel and units in Hospital Authority (HA), DH & relevant government departments
- 4 key functional units:
 - Toxicovigilance Section of DH
 - Hong Kong Poison Information Centre (HA)
 - Toxicology Reference Laboratory (HA)
 - Poison Treatment Centre (HA/Chinese University of Hong Kong)



Scope of services of HKPCN



1. Poisoning information and consultative service to healthcare professionals;
2. Poison treatment service;
3. Tertiary level clinical toxicology laboratory service;
4. Toxicovigilance (surveillance and epidemiology);
5. Risk communication;
6. Publicity and education;
7. Professional training; and
8. Research



Hong Kong Poison Information Centre (HKPIC)



- Provides 24-hr consultative service on poison information and management advice in clinical toxicology to healthcare professionals
- Maintains a poison database for rapid access to updated poison information
- Collaborates with DH in surveillance of poisoning
- As portal for reporting of all poisoning cases from all 16 public accident and emergency departments (AEDs)
- Provides training in clinical toxicology
- Provides inpatient & outpatient toxicology service in United Christian Hospital



Poison Treatment Centre (PTC)



- Jointly established by HA & Faculty of Medicine of CUHK
- Tertiary referral centre, esp. for management of patients with unusual poisoning
- Provides expert information and consultative service on clinical management of poisoning
- Provides general & specialist training in clinical toxicology for healthcare professionals



Toxicology Reference Laboratory (TRL)



- Set up as a toxicology reference laboratory for HA
- Provides tertiary level laboratory service on clinical / analytical toxicology
- Provides consultative service in herbal toxicology
- Provides diagnostic services for new or uncommon toxins / substances of abuse



DH's roles



- Public health protection roles:
 - Epidemiological investigation of reported poisoning cases / outbreaks
 - Implementation of control measures to reduce exposure (e.g. product recall)
 - Risk communication to alert the public & healthcare professionals
 - Enhancement of surveillance
 - Coordination with HA, other government departments, academia & media
 - Enforcement of related legislations/regulations with the Police if there is sufficient evidence
 - Communication with counterparts in areas outside HK



Poisoning situation in Hong Kong

Chinese medicine related



- Examples:
 - Aconitine poisoning (烏頭鹼中毒) caused by herbs containing aconitine alkaloids, e.g. Processed Radix Aconiti Kusnezoffii (製草烏) & Processed Radix Aconiti (製川烏)
 - Anticholinergic poisoning caused by herbs containing tropane alkaloids, e.g. Flos Daturae Metelis (洋金花)
 - Matrine poisoning caused by Radix Sophorae Flavescentis (苦參)
 - Liver impairment induced by herbs with potential hepatotoxicity, such as Rhizoma Dioscoreae Bulbiferae (黃藥子)



Chinese medicine related (2)



- Causes:
 - Prescription errors, such as over dosage, improper duration
 - Contamination of benign herbs with toxic herbs (hidden)
 - Dispensing errors due to misidentification of herbs with similar appearances
 - Improper decoction or consumption, e.g. inadequate decoction
 - Misuse of herbs without consulting Chinese medicine practitioner (CMP)



Western medicine related



- Main types of western medicines:
 - Steroids causing iatrogenic Cushing's syndrome, adrenal insufficiency
 - Non-steroidal anti-inflammatory drugs causing renal impairment
 - Anti-diabetic drugs causing hypoglycemia
 - Sibutramine causing psychosis
- Underlying causes:
 - Adulteration of slimming products / oral products / proprietary Chinese medicines (pCm) with undeclared or banned western medicines
 - Dispensing error in old age homes
 - Intake of prescription-only medicines related to malpractice of pharmacies



Others



- Heavy metal poisoning
 - Mercury, e.g. related to facial cream
 - Lead, e.g. related to pCm
 - Arsenic, e.g. related to pCm



- Mushroom poisoning
(investigated as food poisoning)



- Pesticide poisoning



Examples to illustrate concerted efforts
of HKPCN units in handling poisoning
incidents / threats in Hong Kong

Outbreak of hypoglycaemia related to consumption of products for treating erectile dysfunction (ED)



- DH received a total of 89 notifications of hypoglycaemia associated with consumption of ED products from Feb 2008 to Dec 2009
- Undeclared oral hypoglycaemic agents (OHA), mainly **Glibenclamide**, caused hypoglycaemia in people who did not take any OHA



Risk management (1)



- Joint efforts by HA, DH, other government departments, academia & media
- Measures to reduce exposure
 - Seizing products in incriminated pharmacy shops
 - Advising drug retailers and traders not to sell unregistered products or products from suspicious sources
 - Involving the Police in tracing mobile hawkers and investigation of suspicious sources
- Measures to enhance surveillance
 - Requesting doctors & hospitals to report suspected cases to DH
 - Enhanced laboratory investigation for detecting OHA and sildenafil in urine specimens of all male patients with unexplained hypoglycaemia
 - Enhanced market surveillance in local drug shops
 - Visits to pharmacy shops, retailers, sexual product shops and mobile stores
 - Collecting product samples for chemical analysis



Risk management (2)



- Measures to raise public awareness
 - Press conference
 - Press releases - timely announcement of details of cases and warning
 - Interviews with various printed and electronic media
 - Tailor-made public announcements broadcasted via multiple channels
 - Dissemination of pamphlets & leaflets to targeted 'risk groups'
- Other measures
 - Legal actions
 - Law enforcement by DH and the Police
 - Prosecution of incriminated shops and owners
 - Enhance communication with health authorities outside HK, e.g. mainland China & Macao



Emergence of slimming products with undeclared western medicines



- From 2007 to 2009, there were 38 notifications related to consumption of slimming products that contained undeclared western medicines, mostly sibutramine (~95%) resulting in poisoning or other adverse events



Preventive & control measures



- Measures to reduce exposure
 - Requesting webmasters to remove advertisement from internet auction sites
 - Seizing products from incriminated pharmacy shops
 - Banning sibutramine in 2010 because of increased cardiovascular risk

- Measures to enhance surveillance
 - Enhanced market surveillance in local pharmacy shops and retailers and the Internet
 - Collecting product samples for chemical analysis
 - Test purchase of suspicious products from internet websites



Risk communication



- Measures to raise awareness
 - Timely announcement of details of cases through press releases covering
 - Harmful effects of unregistered drugs and undeclared substances in products purchased from suspicious sources
 - Promotion on healthy eating, diet and weight reduction for proper weight management
 - Tailor-made announcements broadcasted on TV
 - Leaflets / pamphlets



Challenges ahead



- Increasing risk of unsafe products obtained from places outside HK
 - Increasing cross boundary activities
 - Purchase of products from internet
- More difficult enforcement actions because of sales over internet
- Culture of weight reduction through 'magic slimming products'
- Emerging 'poisons'



Thank you