Bites and Stings - A Revisit

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October 2012

http://www.firstaidjobs.net/wp-content/uploads/2012/05/insect-bites-and-stings.jpg

Framework of presentation

- Reported cases of bites and stings in QMH and HKPIC
- Rising concerns of Hymenoptera sting associated anaphylaxis/systemic allergic reaction and respective case series in QMH
- Current guideline on management of insect sting associated anaphylaxis
- Special consideration on bee/wasp sting to eye
- Introduction of CMS linked poisoning information reporting system

Bites and Stings

- Usual encounters
  - Snake
  - Bee and wasp stings
  - Centipede
  - Marine envenomation
    - Venomous fishes
    - Invertebrate marine envenomation
  - Rove beetle (new comer which never bites or stings)

Statistics in A&E QMH

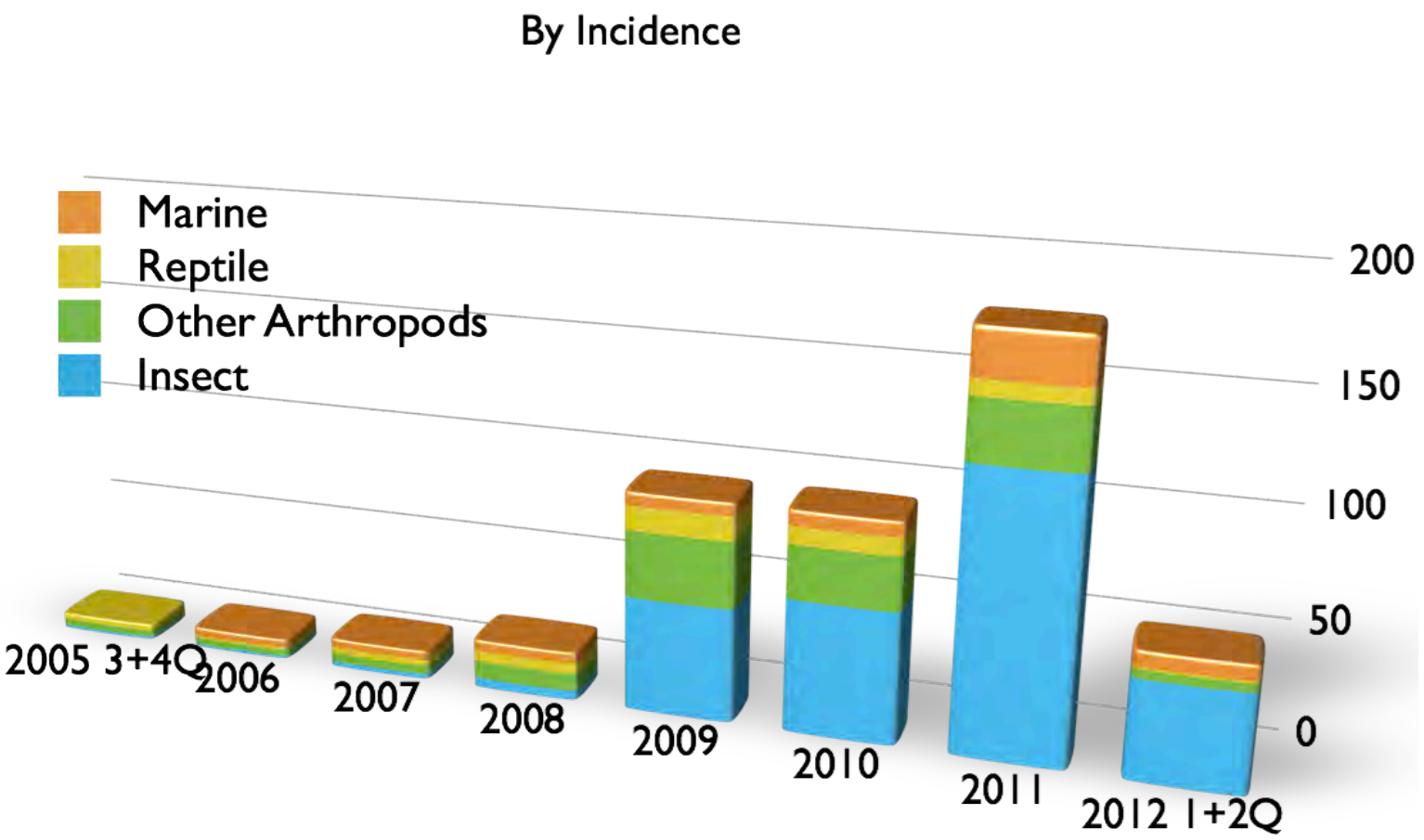
- Review of data July 2005 to May 2012
- All patients labelled to have bites and stings in self reported in-house toxicology information system in A&E
- 489 visits, 6 doubtful cases excluded, 483 valid visits

Statistics in A&E QMH for bites and stings

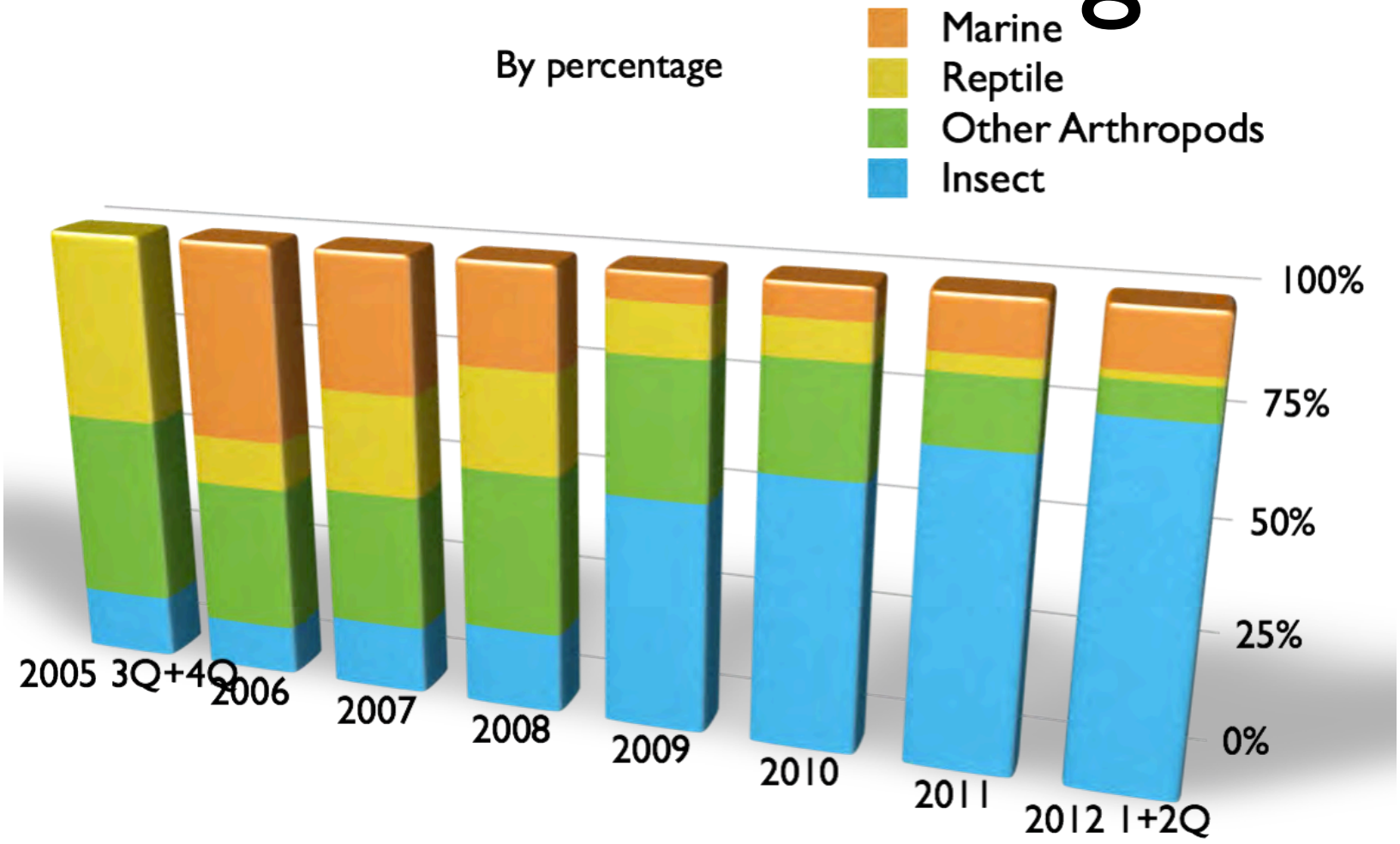
BY ATTENDANCE									
	2005	2006	2007	2008	2009	2010	2011	2012	TOL.
Visit	7	9	13	22	98	98	180	56	483

	2005	2006	2007	2008	2009	2010	2011	2012	TOTAL
INSECT	1	1	2	4	51	59	125	44	287
OTHER ARTHROPOD	3	3	4	8	30	24	27	4	103
REPTILE	3	1	3	5	11	8	7	1	39
MARINE	0	4	4	5	6	7	21	7	54
TOTAL	7	9	13	22	98	98	180	56	483

Statistics in A&E QMH for bites and stings



Statistics in A&E QMH for bites and stings

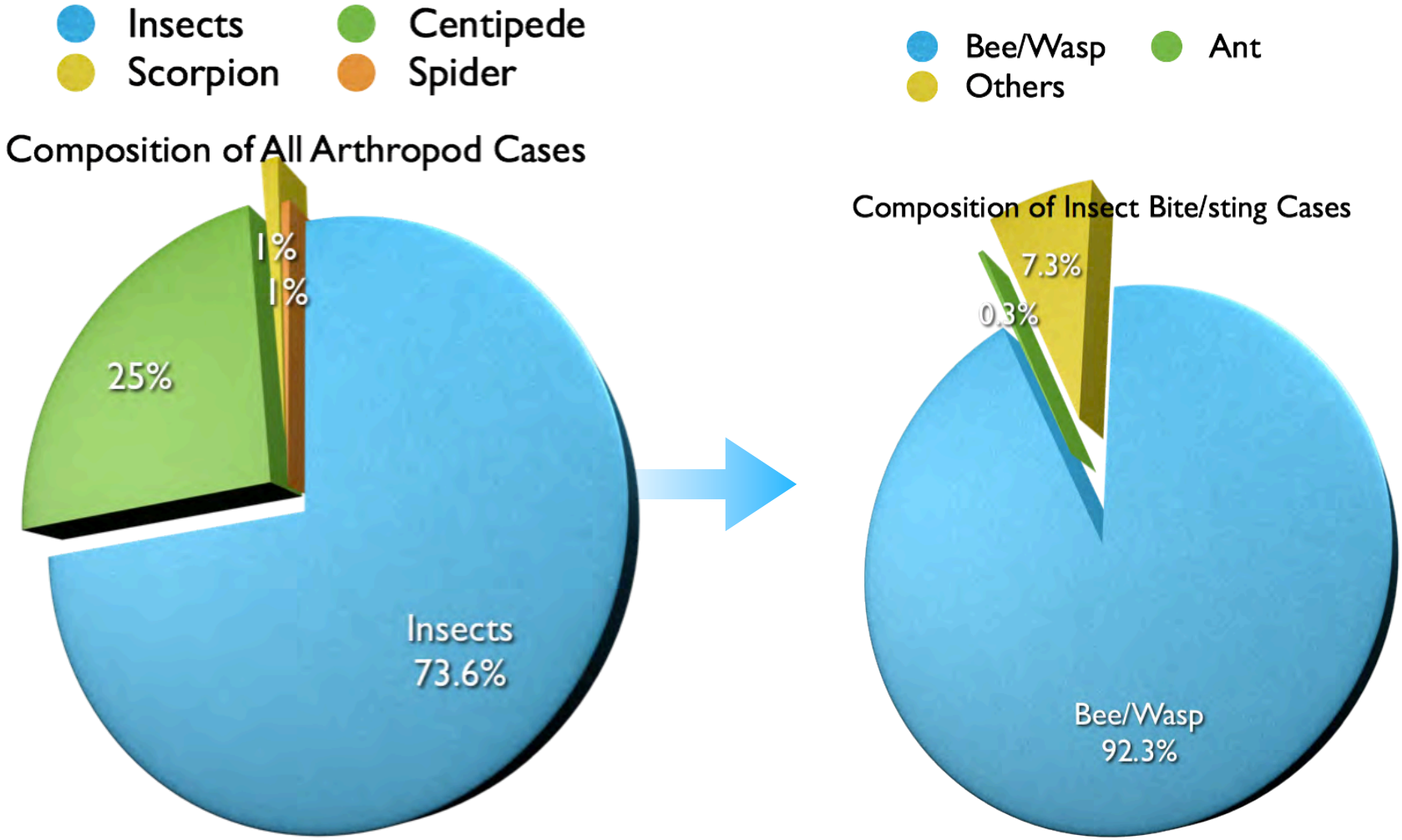


Statistics in A&E QMH for arthropod/ insect bites

INSECT BITES									
	2005	2006	2007	2008	2009	2010	2011	2012	TOTAL
BEE/WASP	0	1	2	4	48	54	116	40	265
ANT	0	0	0	0	0	0	1	0	1
OTHERS	1	0	0	0	3	5	8	4	21
TOTAL	1	1	2	4	51	59	125	44	287

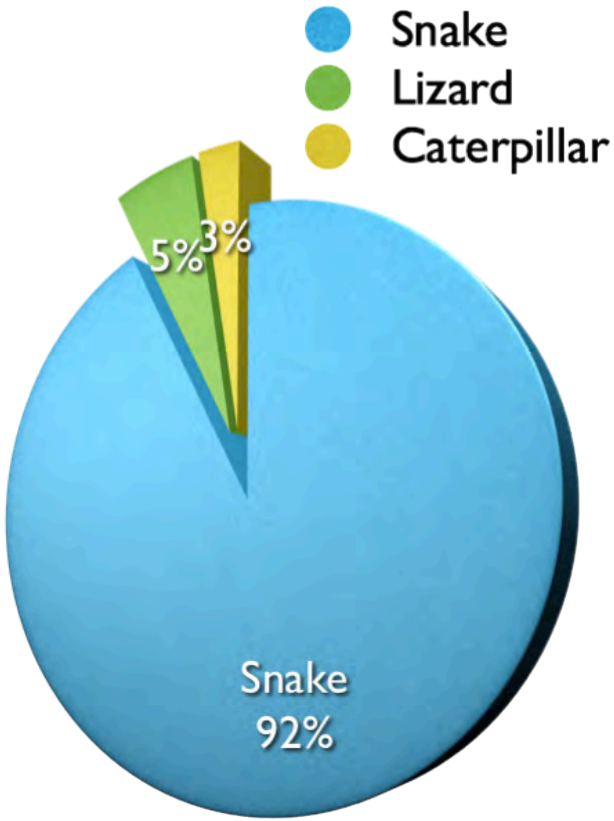
OTHER ARTHROPOD BITES/STINGS									
	2005	2006	2007	2008	2009	2010	2011	2012	TOTAL
CENTIPEDE	3	3	4	7	28	22	26	4	97
SCORPION	0	0	0	1	1	2	0	0	4
SPIDER	0	0	0	0	1	0	1	0	2
TOTAL	3	3	4	8	30	24	27	4	103

Statistics in A&E QMH for insect bites



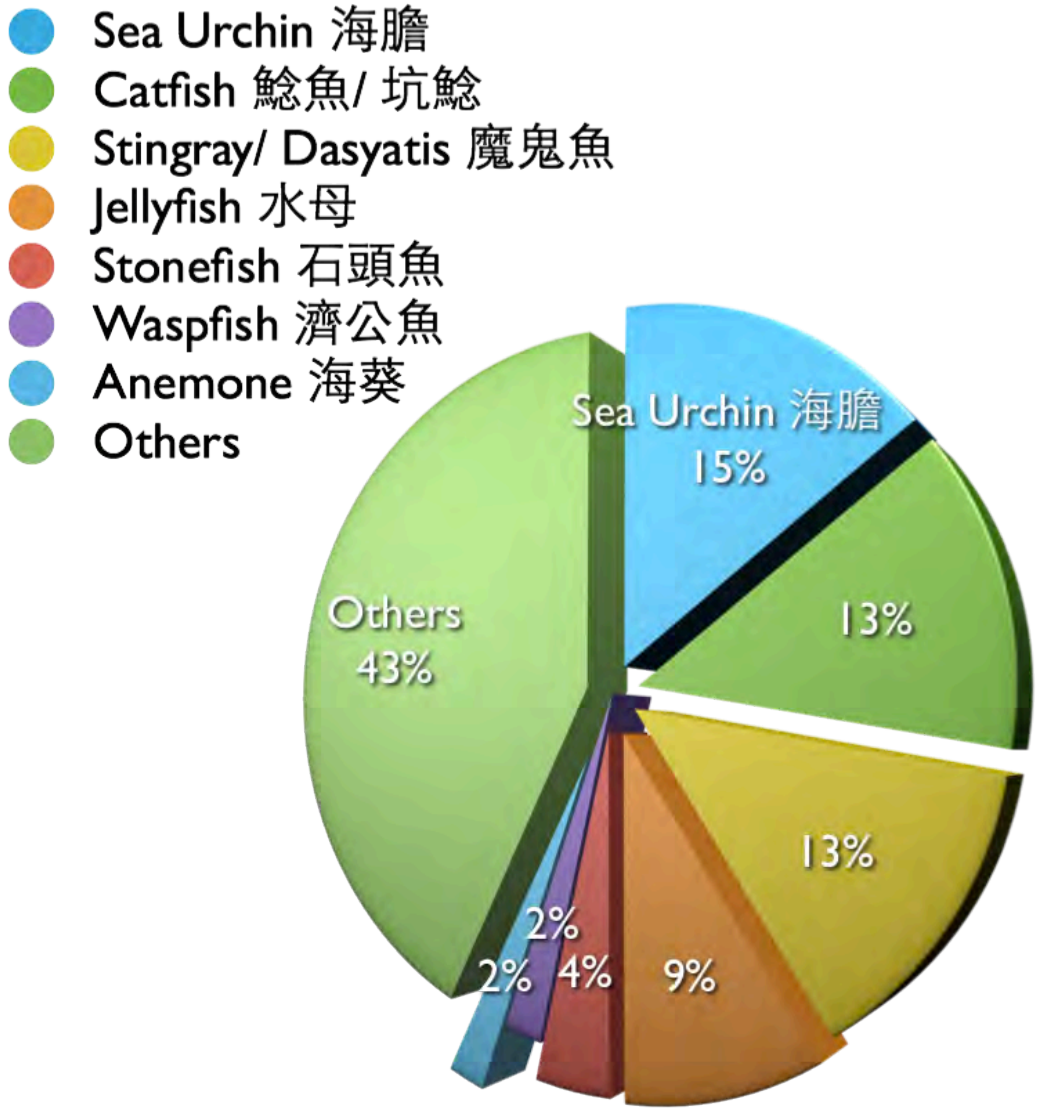
Statistics in A&E QMH for reptile bites/stings

REPTILE BITES/STINGS									
	2005	2006	2007	2008	2009	2010	2011	2012	TOTAL
SNAKE	3	0	3	5	10	8	7	0	36
LIZARD	0	1	0	0	1	0	0	0	2
CATERPILLAR	0	0	0	0	0	0	0	1	1
TOTAL	3	1	3	5	11	8	7	1	39



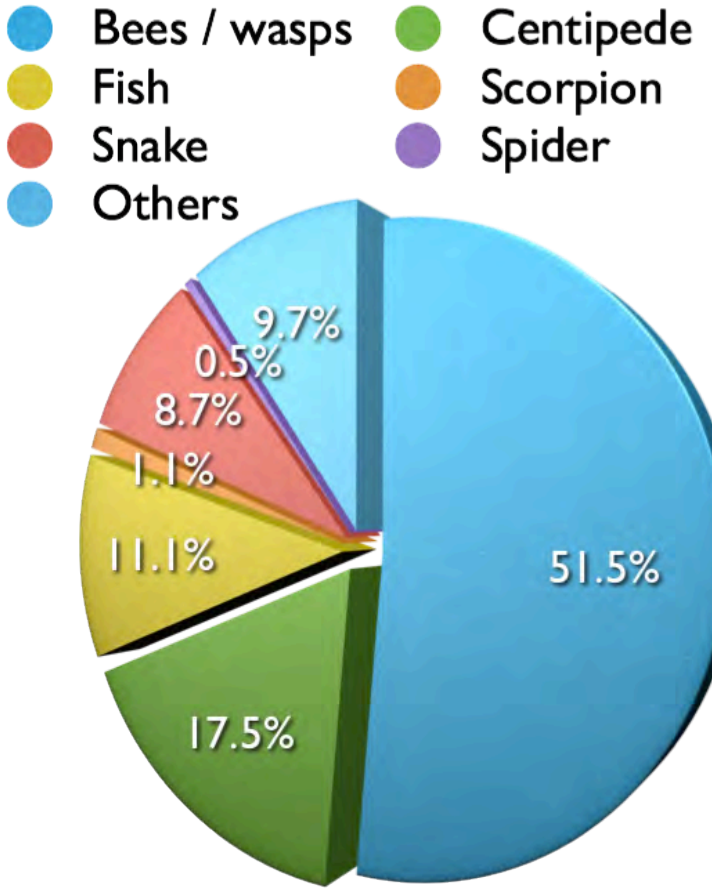
Statistics in A&E QMH for marine bites/stings

MARINE BITES/STINGS									
	05	06	07	08	09	10	11	12	TOTAL
SEA UR.	0	0	0	2	0	1	4	1	8
CATF.	0	0	3	0	0	1	1	2	7
STINGR.	0	2	0	1	1	1	1	1	7
JELLYF.	0	1	0	0	3	0	1	0	5
STONEF.	0	0	0	0	0	0	0	2	2
WASPF.	0	0	0	0	1	0	0	0	1
ANEM.	0	1	0	0	0	0	0	0	1
OTHER	0	0	1	2	1	4	14	1	23
TOTAL	0	4	4	5	6	7	21	7	54



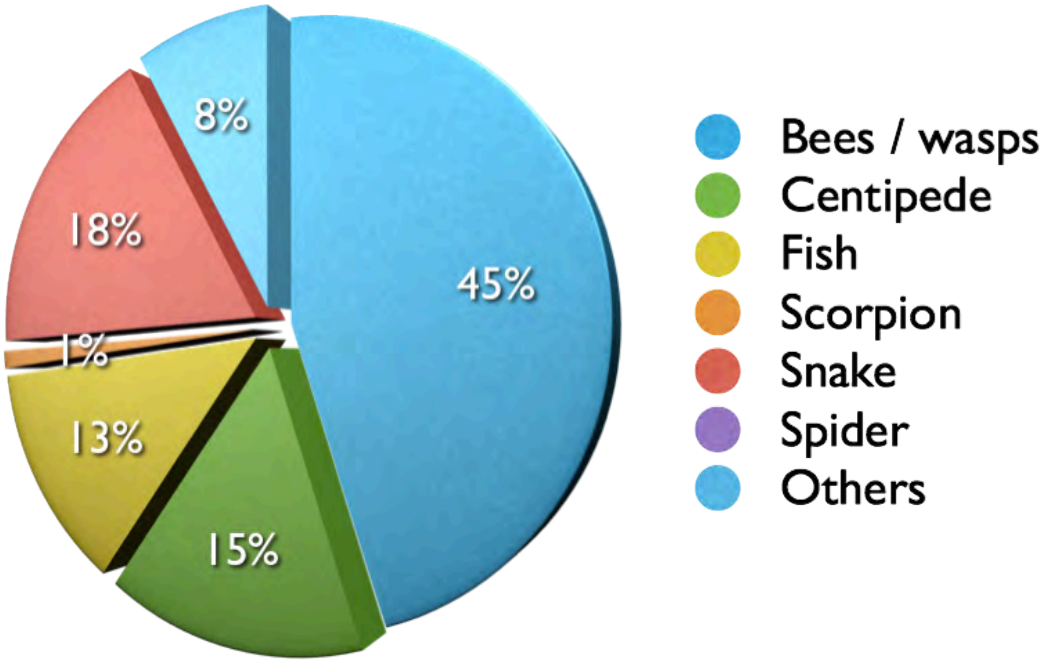
Data from HKPIC (2010-2012 2Q)

Hospital	Poison Category	2010	2011	2012 1+2Q	Total
QMH	Bees / wasps	51	107	50	208
	Centipede	19	23	9	51
	Fish	3	15	7	25
	Scorpion	2	0	1	3
	Snake	7	8	1	16
	Spider	0	1	0	1
	Others	6	16	11	33
QMH sub-total		88	170	79	337
Other AED	Bees / wasps	28	68	29	125
	Centipede	22	34	6	62
	Fish	22	17	8	47
	Scorpion	0	3	1	4
	Snake	11	16	13	40
	Spider	0	2	0	2
	Others	9	18	3	30
Other AED sub-total		92	158	60	310
Total		180	328	139	647

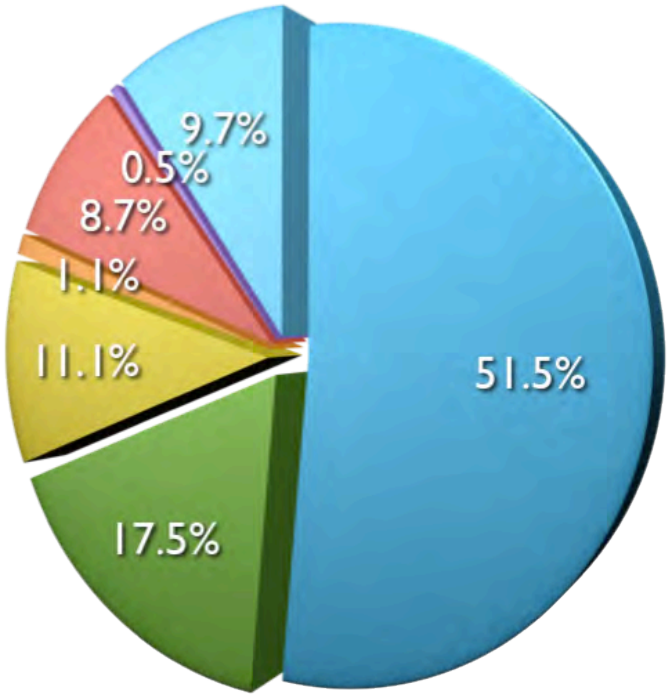


HKPIC Data

2006



2010-2012 2Q



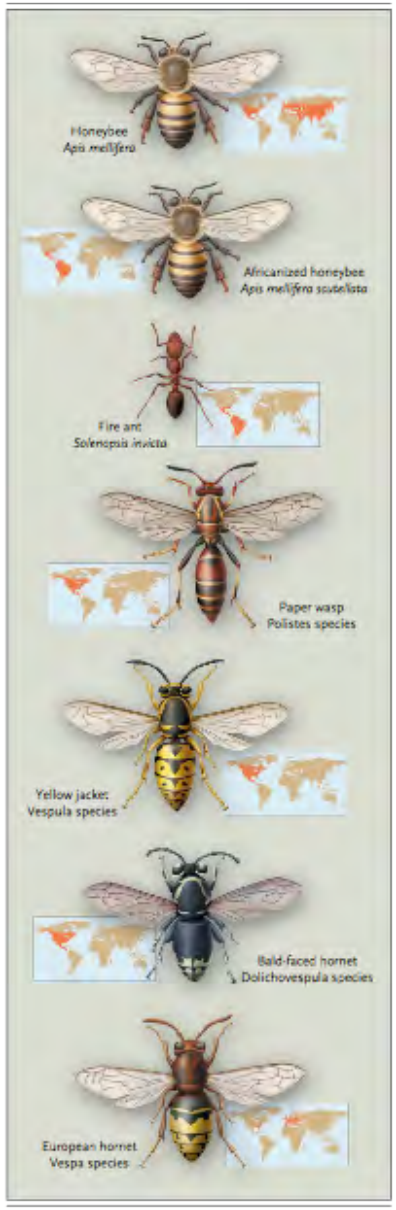
QMH case series of bee sting possibly associated generalised systemic allergic reaction

Sex/ Age	Time lapse	Features	Vitals	ECG	Lab tests	Treatment at A&E	Outcome
M/59y	Sx: n/a ED: 1 hour	Gen. rash, SOB, congested conjunctivae	BP 122/71 p112 afebrile, SpO2 95% RA	SR, PR 156, QRS 98 QTc 484	WCC 14.4 (Neu), K 3.1, Alb 40 Glo 39 LDH 251, others N	O2, Piriton iv, hydrocortisone iv	d/c from medical D2
M/59y	Sx: n/a ED: 2 hours	Local reaction, syncope for 1 min, vomiting	BP 150/92 p82 afebrile. GCS 15/15	SR, VEB, PR 156 QRS 92 QTc 397	WCC 14.2 (Neu), H'Stix 9.3, L/RFT normal	Nil	d/c from medical D2
F/21y	Sx: 40 min ED: 1hr	4-limb numbness, weakness after 1 hour+/- SOB, slurred speech	BP 137/68 p63 afebrile, SpO2 100% RA, RR16	SR, PR 144 QRS 83, QTc 427	pH 7.356, pCO2 6.58, pO2 3.5, BE+2, HCO3 27.6, Na 140 K 4.1 iCa 1.26	piriton iv, NS	d/c from EMW same day
F/54y	Sx: n/a ED: 30 min	Gen. urticaria, tongue and throat swelling	BP 158/95 p78 afebrile, SpO2 99% RA	SR, TWIV1-3. PR 142 QRS 98 QTc 470	CBC, L/RFT normal	Hydrocortisone, piriton	d/c from EMW same day
M/52y	Sx: n/a ED: 45 min	Gen. MP rash, dizziness, SOB	BP 100/64 p98 SpO2 94% RA RR 18 afebrile	Nil	WCC 12.95 (Neu); R/LFT, clotting normal	O2, Piriton im, Adrenaline 0.3mg sc	d/c from EMW next day
F/42y	Sx:1-2 min ED: 50min	Gen. MP rash, congested throat +/- SOB	BP 121/65 p95 SpO2 94% RA afebrile RR 16	SR, PR 162 QRS 77 QTc 403	Nil	O2, NS, piriton iv, hydro-cortisone iv, panadol	d/c from EMW same day

Hymenoptera sting associated anaphylaxis

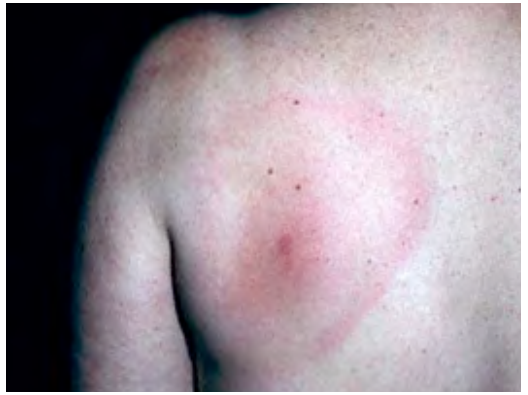
Insect bites / stings

- Stinging insects of the order Hymenoptera are the main cause of insect related anaphylaxis
- 3 families with clinical importance: the bees (honeybees, bumblebees), vespids (yellow jackets, hornets, wasps), and stinging ants (genus Solenopsis "imported fire ant" and others)
  - Allergic reactions - variable severity
  - Can trigger multiple cardiovascular and cerebrovascular complications



Insect bites / stings

- Normal reaction: edema < 15cm diameter, resolve in 24 hours
- Manifestations of allergic response:
  - Large local reactions (>15cm)
    - Peak at 48-72 hours after a sting and last 5-10 days
    - IgE-mediated late-phase reaction
    - Easily misdiagnosed as cellulitis
  - Cutaneous systemic reactions
    - Generalized skin manifestations, e.g., urticaria, angioedema
  - Generalised Systemic reactions
    - Dermatologic, cardiovascular, respiratory, gastrointestinal systems involvement



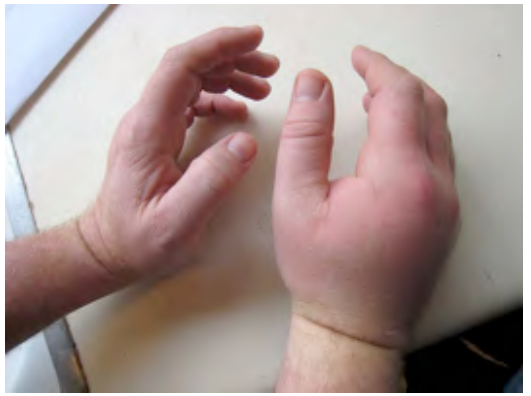


Photo courtesy of: thebeelady.wordpress.com, bee-stings.net

Anaphylaxis associated cardiovascular compromise

- "Vasovagal-like" picture
  - Catecholamines and prostaglandins sensitise cardiac mechanoreceptors: bradycardia
  - Serotonin and nitric oxide potentiate central reflexes: peripheral vasodilatation
- Kounis syndrome (coronary vessels)
- Direct effect of anaphylactic mediators on myocardium
  - Arrhythmia, bradycardia, angina, heart failure, myocardial infarction

Golden DBK. Insect sting anaphylaxis. Immunol Allergy Clin N Am 2007;27:261-72.
Brown SGA et al. Insect sting anaphylaxis; prospective evaluation of treatment with intravenous adrenaline and volume resuscitation. Emerg Med J 2004;21:149-54.

Kounis syndrome

- Type I - normal coronaries
  - coronary vasospasm as part of hypersensitivity response
  - endothelial dysfunction
- Type II - atheromatous coronary artery disease
  - hypersensitivity reaction induces plaque erosion and rupture
  - mast cells release vasoconstrictors and collagen degrading compounds e.g. histamine, platelet activating factor and neutral proteases (tryptase and chymase) which activates metalloproteinases in plaques

Taggar JS et al. Kounis syndrome presenting as ST-segment elevation myocardial infarction following a hymenoptera (bee) sting. International J Cardiology 2009;136:e29-30.

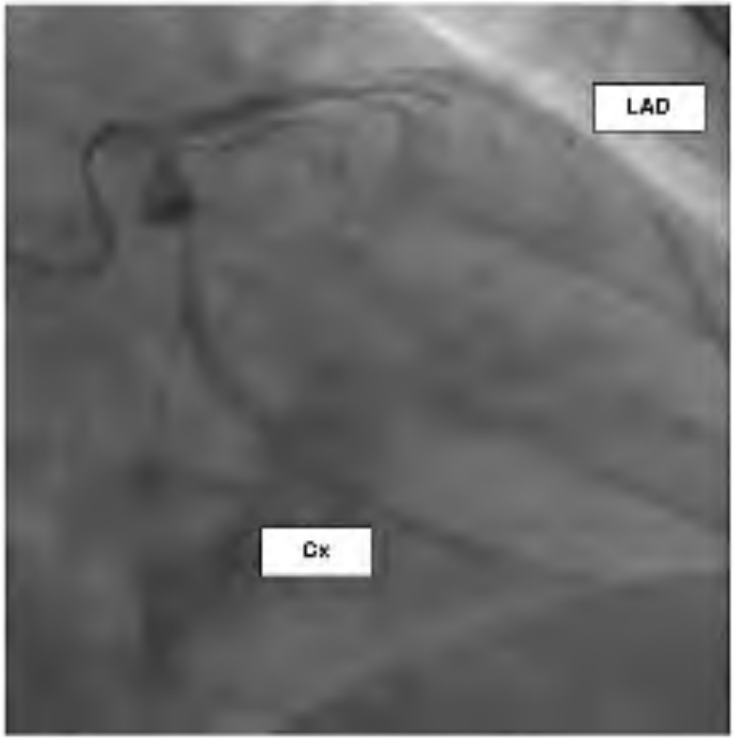


Fig. 1. Right anterior oblique (RAO) view of left coronary system. Unobstructed flow of contrast seen down left main stem (LMS) and circumflex (Cx) coronary arteries. Extensive thrombus visible within the left anterior descending (LAD) coronary artery.

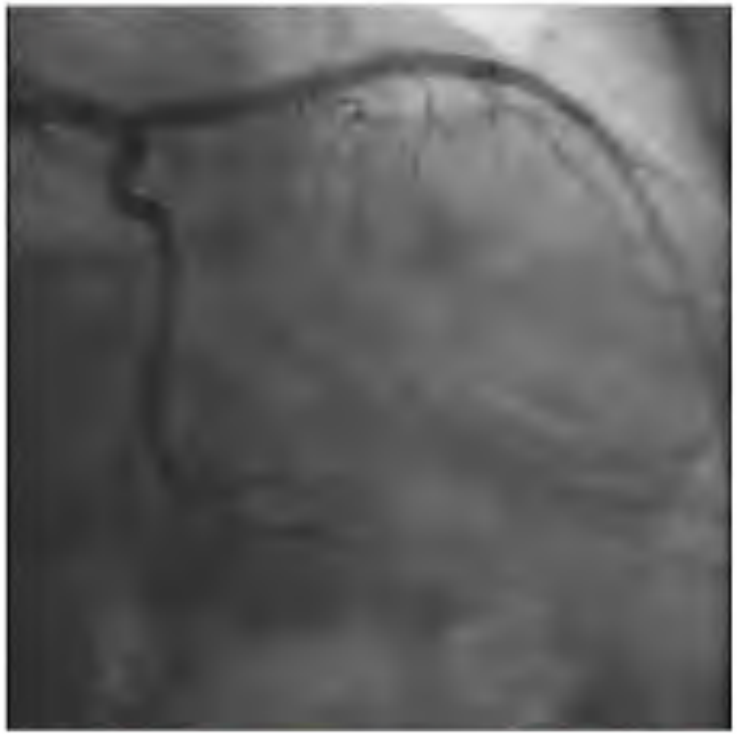


Fig. 2. Right anterior oblique (RAO) view of left coronary system following coronary angioplasty demonstrating excellent angiographic result.

Stroke after Hymenoptera sting

- Bee venom itself contains vasoactive substances: histamine, thromboxane, leukotrienes, and other vasoactive and inflammatory mediators
- Vasoconstriction secondary to mediator release, aggravated by exogenous adrenaline, and platelet aggregation, "a prothrombic state"
- Reported neurological complications of bee sting include seizure, hemiparesis, aphasia, apraxia, dysarthria, ataxia, and coma
- Acute to subacute onset of symptoms, moderate to severe visual loss followed by significant recovery resulting in oedematous and haemorrhagic optic discs, and central or caecocentral scotomata

Rajendiran C et al. Stroke after multiple bee sting. J Assoc Physicians India. 2012;60:122-4.

Table 1 : Case reports of neurological manifestations after bee/wasp sting

Author/ Reference	Age/ Sex	Type of stings: location	Onset of neurological deficit	Examination findings and symptoms	Eye examination	MRI/CT findings	Treatment	Recovery
Day[1]	36/M	Wasp: multiple on neck, face, and arms	<1 hour	Headache, seizure, right hemiplegia, coma	Equal and reactive pupils	NR; necropsy showed left haemorrhagic cortical infarct	Cortisone, antihistamines phenobarbital	Deceased
Crawley et al[4]	30/F	Wasp: left arm	<1 hour	Facial and arm swelling, widespread urticaria, acute pulmonary oedema, visual loss.	Right homonymous superior quadrantanopia	Left occipital ischaemic infarct	SQ adrenaline, IV gelofusine, IV hydrocortisone, IM chlorpheniramine, IV furosemide	Full recovery from quadrantanopia
Riggs et al[5]	38/M	Wasp: multiple on left face and neck	2 days	Right hemiplegia, dense global aphasia	NR	Ischaemic infarction in the distribution of the left MCA; angiogram: left ICA occlusion	NR	NR
Riggs et al[6]	52/M	Wasp: single, location NR (previous history of wasp sting allergy)	A few hours, with worsening 24 days later	Anaphylactic shock with respiratory arrest, slurred speech and left hemiparesis initially, then 24 days later, acute obtundation and quadriparesis	NR	Initially, three small focal ischaemic infarcts, two in the right centrum semiovale and one in the right temporal lobe. After worsening, diffuse bilateral ischaemic white matter lesions.	IV adrenaline, methylprednisolone, diphenhydramine	NR
Starr and Brasher[7]	37/M	Wasp: 3 stings on arms	<1 hour	Seizure, right hemiplegia	NR	Left cerebral infarction (CT done 14 months later)	Barbiturates, corticosteroids, adrenaline	Partial right hemiplegia, one seizure
Speach et al[8]	30/M	Bee: single, location NR	<1 hour	Decerebrate posturing, extensor plantar reflexes, left hemiparesis, hyporeflexia; after coma, patient had motor apraxia and left sensory neglect.	NR	Normal MRI and CT	IV diphenhydramine, steroids and nebulised β2 agonist and anticholinergic medications	Residual ideomotor apraxia
Bhat et al[9]	35/M	Bee: multiple "all over the body"	<1 day	Multiple swellings all over the body, vomiting, dysarthria, tinnitus, vertigo and swaying gait, hypertension, bilateral cerebellar signs, rhabdomyolysis with acute renal (respiratory?) failure.	No papilloedema	Bilateral cerebellar haemorrhagic infarct	Dexamethasone, antihistamines, mannitol, insulin, haemodialysis.	Deceased
Present case report	25/M	Bee sting in back of neck and body	1 day later	Left upper limb monoparesis, blurring of vision.	No papillodema	MRI Brain- Infarct in right frontoparietal region, right occipital region. CT Brain-Right frontoparietal, right occipital hypodensities	Dexamethasone, antihistamines, mannitol, Aspirin,	Full recovery of monoparesis.

NR (Not-Reported).

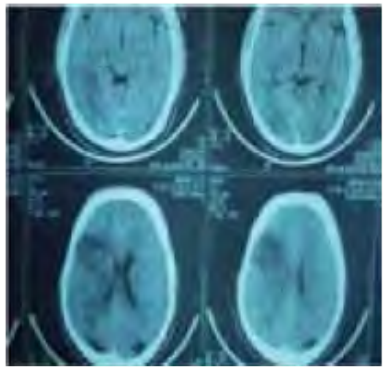


Fig. 1 : CT-brain of the patient taken immediately demonstrating right parieto- temporal infarct and bilateral occipital infarct

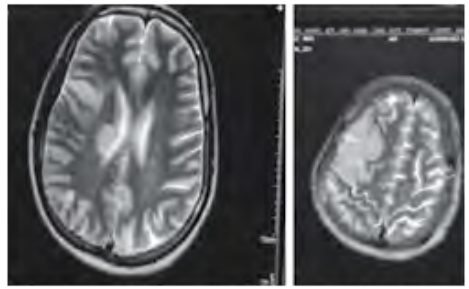


Fig. 2 : MRI –brain taken next day, demonstrating right parietal and right ganglio capsular infarct

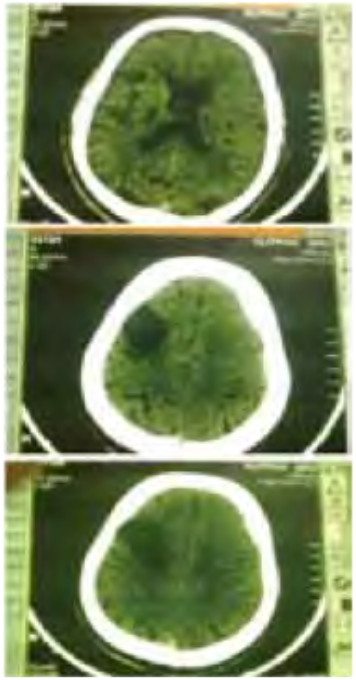


Fig. 3 : Repeat CT- brain taken 8 months later reveals old infarct with gliotic changes in right high parietal and occipital region

Mortality of insect sting associated systemic anaphylactic reactions

- Data from US and European countries: 0.03-0.48/1M inhabitants per year[i]
- 3% adults and 0.4-0.8% children experienced life threatening systemic reactions to stings. At least 40 yearly deaths in the US.
- Probably underestimated
- Extrapolated percentage of fatal sting associated anaphylaxis ~20%[ii]
- Death commonly resulted from shock 10-15min after the sting and upper airway angioedema
- Higher risk if > 40yo[ii], male > female[iii]

i. Bilo MB, Bonifazi F. The natural history and epidemiology of insect venom allergy: clinical implications. Clin & Experimental Allergy 2009;39:1467-76.
ii. Pumphrey RS. Fatal anaphylaxis in the UK, 1992-2001. In: Bock G, Goode J, eds. Anaphylaxis. Novartis Found Symp 257. Chichester, UK: John Wiley and Sons, 2004;116-28.
iii. Simon MR, Mulla ZD. A population-based epidemiologic anaphylaxis of deaths from anaphylaxis in Florida. Allergy 2008;63:1077-83.

Risk factors of systemic reaction after Hymenoptera stings

- History of prior systemic sting reaction (with respiratory or cardiovascular symptoms)
- Systemic reactions during venom immunotherapy
- Older age
- Insect type (honeybee, European hornet)
- Pre-existing disease: cardiovascular, asthma
- Drugs: particularly beta-blockers (also eye drops), ACEI
- Sting over the head and neck regions (not confirmed)
- Mast cell diseases, elevated baseline serum tryptase concentration
- Frequent unavoidable exposure to stinging insects

Bilo MB, Bonifazi F. The natural history and epidemiology of insect venom allergy: clinical implications. Clin & Experimental Allergy 2009;39:1467-76.
Golden DBK et al. Stinging insect hypersensitivity: A practice parameter update 2011. J Allergy Clin Immunol 2011;127:852-4.

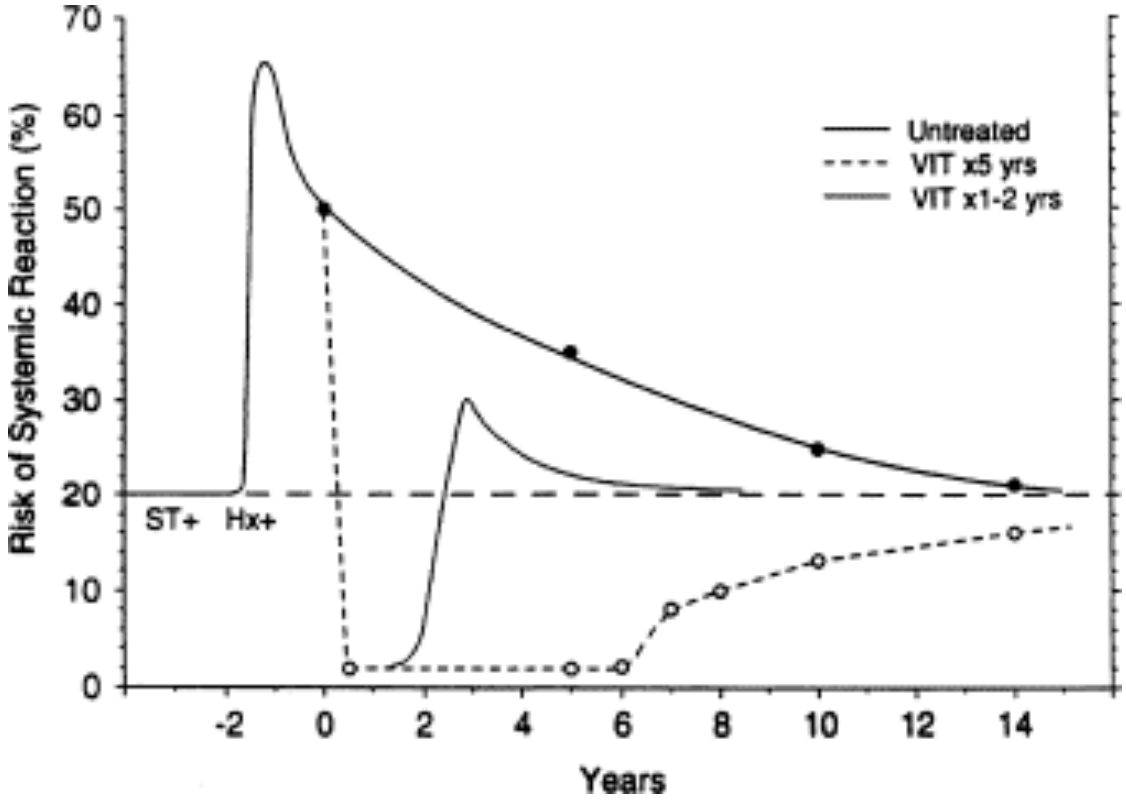
Practice parameter update 2011 on stinging insect hypersensitivity

American Academy of Allergy, Asthma and Immunology
J Allergy Clini Immunol 2011;127:852-4.

Addressed substantial risk of insect sting / bite associated anaphylaxis

Practice parameter update 2011 on stinging insect hypersensitivity

- Half of deaths from allergic reactions to insect venom are from **first-time** stings
- Subjects of history of systemic reaction of an insect sting are at increased risk (25-70%) of subsequent sting reactions. This risk can be reduced to <5% with venom immunotherapy (VIT). (A)



Natural history of insect sting allergy showing the risk of systemic reaction to a sting in untreated patients *(solid line)* and in patients who received VIT *(dashed lines)* for a duration of either 1 to 2 years or for a mean of 6 years. Reprinted with permission from Golden DBK, Kagey-Sobotka A, Lichtenstein LM. Survey of patients after discontinuing venom immunotherapy. J Allergy Clin Immunol 2000;105:389.

Golden DBK. Insect sting allergy and venom immunotherapy: a model and a mystery. J Allergy Clin Immunol 2005;115:439-47.

Practice parameter update 2011 on stinging insect hypersensitivity

- Management of acute reactions to stings is symptomatic, with the following considerations:
  - Systemic reactions to insect stings should be treated like any anaphylactic reaction, with removal of stinger, injectable epinephrine (adrenaline), supportive therapy, and transport to an emergency department. (A)
  - Fatal sting reactions have been associated with delay in administration of epinephrine. (B)
  - For cutaneous systemic reactions (e.g. urticaria, angioedema), give antihistamines and close observation. (D)
  - Large local reactions: antihistamines, analgesics, cold compression +/- oral corticosteroid (evidence lacking). Antibiotics unnecessary. (D)

Practice parameter update 2011 on stinging insect hypersensitivity

- Recommended immediate treatment with epinephrine
  - Adults: 0.3-0.5mg
  - Children: 0.01mg/kg up to 0.3mg
  - Intramuscular injection in the anterolateral thigh (vastus lateralis muscle) might achieve a more rapid and higher plasma concentration than subcutaneous or intramuscular injection in the arm[i,ii]
  - Delayed use of epinephrine might be ineffective and associated with fatal and near-fatal anaphylaxis[iii-vi]
  - Repeat dose q5min prn, consider i.v. in refractory shock and cardiac arrest cases (more S/E)

i. Simons FE, Gu X, Simons KS. Epinephrine absorption in adults: intramuscular versus subcutaneous injection. J Allergy Clin Immunol 2001;108:871-3.
ii. Simons FER, Roberts JR, Gu X, Simons KJ. Epinephrine absorption in children with a history of anaphylaxis. J Allergy Clin Immunol 1998;101:33-7.
iii. Bautista E, Simons FE, Simons KJ, Becker AB, Duke K, Tillett M, et al. Epinephrine fails to hasten hemodynamic recovery in fully developed canine anaphylactic shock. Int Arch Allergy Immunol 2002;128:151-64.
iv. Bock SA, Munoz-Furlong A, Sampson HA. Further fatalities caused by anaphylactic reactions to food, 2001-2006. J Allergy Clin Immunol 2007;119:1016-8.
v. Hoffman DR. Fatal reactions to Hymenoptera stings. Allergy Asthma Proc 2003;24:123-7.
vi. Sampson HA, Mendelson L, Rosen JP. Fatal and near-fatal reactions to food in children and adolescents. N Engl J Med 1992;327:380-4.

Healthy, allergic adult

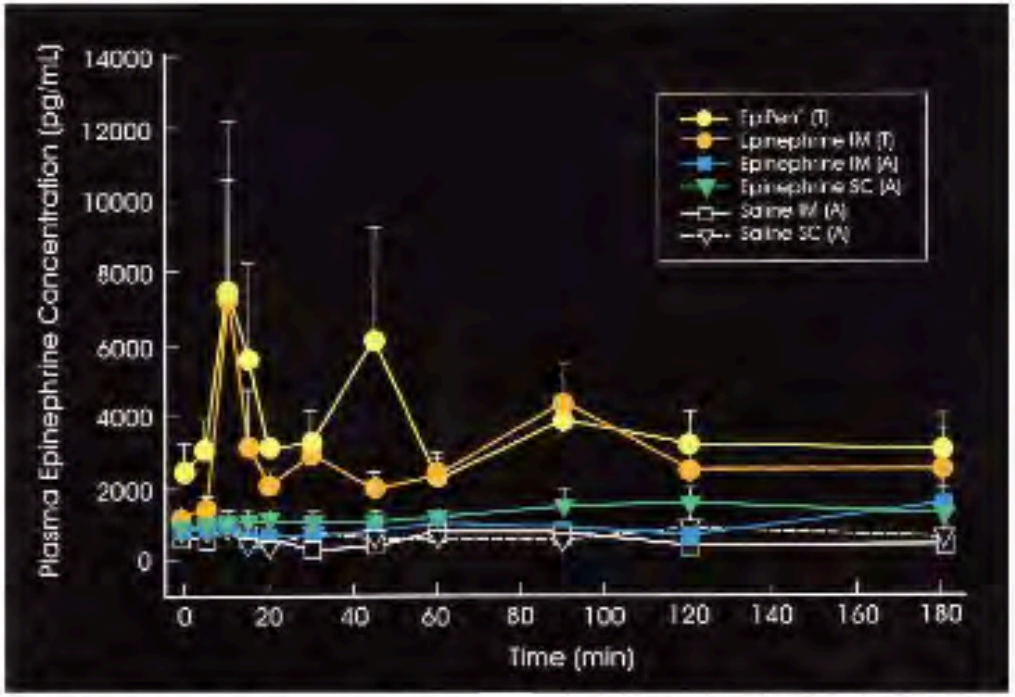


FIG 1. Mean plasma epinephrine concentrations versus time are shown after administration of an identical 0.3-mg (0.3-mL) dose of epinephrine by IM or SC injection in 2 different sites. *T*, Thigh; *A*, upper arm. Mean endogenous plasma epinephrine concentrations are shown after IM or SC injection of 0.9% saline solution (0.3 mL) in the upper arm. The plasma epinephrine concentrations shown were calculated by averaging (mean ± SEM) the epinephrine concentrations at each sampling time for each route and each site of injection.

TABLE I. Mean maximum plasma epinephrine concentrations

Injection route	EpiPen IM	Epinephrine IM	Epinephrine IM	Epinephrine SC	Saline IM	Saline SC
Injection site	Thigh	Thigh	Arm	Arm	Arm	Arm
C_{max}: mean ± SEM (pg/mL)	12,222* ± 3,829	9,722* ± 4,801	1,821 ± 426	2,877 ± 567	1,458† ± 444	1,495† ± 524

C_{max} (mean ± SEM) was obtained as follows: We selected the peak plasma epinephrine concentration measured in each participant during each visit (from 5 to 180 minutes after injection, regardless of the time at which the peak concentration occurred). We then calculated the mean peak concentration (C_{max} ± SEM value) after injection of epinephrine or saline solution by each route and at each site.

IM, Intramuscular; *SC*, subcutaneous; C_{max}, peak plasma epinephrine concentration.

*$P < .01$ from all arm values.

†Endogenous epinephrine.

Children with *history* of systemic reaction

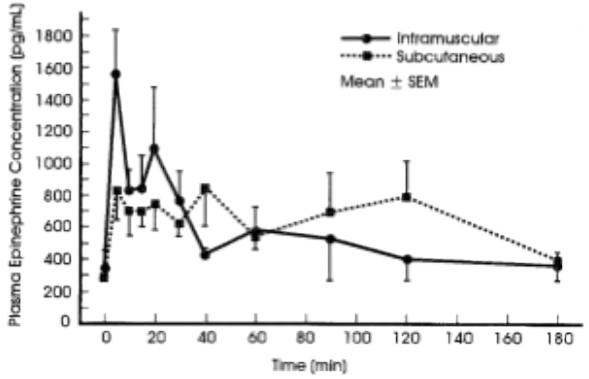


FIG. 1. Mean plasma epinephrine concentration versus time plot after injection of epinephrine subcutaneously in nine children and after injection of epinephrine intramuscularly in eight children.

TABLE II. The pharmacokinetics of epinephrine

Mean ± SEM	Epinephrine solution (subcutaneous)	EpiPen Auto-injector (intramuscular)
Epinephrine dose (mg) ± SEM	0.27 ± 0.04*	0.3
$C_{baseline}$ (pg/ml)	285 ± 32	339 ± 115
C_{max} (pg/ml)	1802 ± 214	2136 ± 351
t_{max} (min)	34 ± 14†	8 ± 2†
$t_{1/2}$ (min)	—	43 ± 15
AUC (ng/ml/min)	67 ± 13	108 ± 18
Cl (ml/min/kg)	—	147 ± 38
Vd_{ss} (L/kg)	—	2.0 ± 1.5

$C_{baseline}$, Baseline plasma concentration; C_{max}, maximum plasma concentration; t_{max}, time at which maximum plasma concentration was achieved; $t_{1/2}$, terminal elimination half-life; *AUC*, area under the plasma concentration versus time curve (t = 0 to 3hr, subcutaneous; t = 0 to infinity, intramuscular); *Cl*, total body clearance; Vd_{ss}, volume of distribution at steady state.

*Six of 9 children received 0.3 mg; 1 of 9 received 0.20 mg; 1 of 9 received 0.23 mg; and 1 of 9 received 0.24 mg.

†$p < 0.05$.

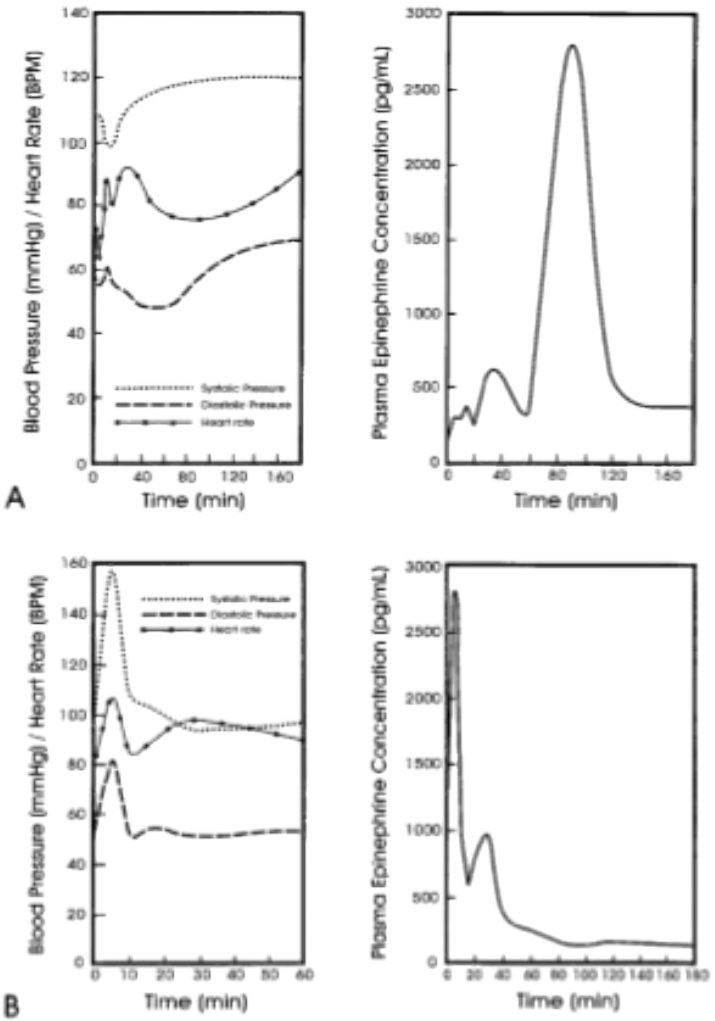


FIG. 2. A, Systolic and diastolic blood pressure, heart rate, and plasma epinephrine concentration in a child receiving epinephrine subcutaneously. B, Systolic and diastolic blood pressure, heart rate, and plasma epinephrine concentration in a child receiving epinephrine intramuscularly.

Drug interactions with adrenaline

- TCA and MAOIs potentiate adrenaline, increase risk of arrhythmia
- Cocaine sensitize the heart to catecholamines thus potentiation of adrenaline
- Beta-blockers decrease effectiveness of adrenaline and increase effects of unopposed alpha adrenoceptor and reflex vagal activity -> bradycardia, hypertension, coronary vasoconstriction and bronchoconstriction
- Dosage adjustments accordingly

Practice parameter update 2011 on stinging insect hypersensitivity

- Referral to an allergist-immunologist for patients with a suspected systemic reaction from insect sting, especially who
  - need education about the risk of another reaction if re-stung, options for emergency and preventive treatment e.g. venom immunotherapy, and insect avoidance (B)
  - have co-existing condition or medication that might complicate a potential reaction to a sting, e.g. use of beta-blockers, HT, arrhythmia (B)
  - request consultation for more detailed information or specific testing, e.g. skin test and in-vitro assays for venom specific IgE antibodies (D)

Practice parameter update 2011 on stinging insect hypersensitivity

- Subjects who have a history of systemic reactions to insect stings should:
  - be educated in ways to avoid insect stings (D)
  - carry epinephrine auto-injector for emergency self-treatment and be familiar with proper use and indications (D)
  - undergo specific IgE testing for stinging insect sensitivity and be considered for immunotherapy (A)
  - consider obtaining and carrying a medical identification bracelet or necklace (D)

Photo courtesy of laurenshope.com, shmallergy.files.wordpress.com, nps.org.au

Action plan for Anaphylaxis

Label here

Name: _____

Date of Birth: _____

Known severe allergies: _____

_____

Parent /carer name(s): _____

_____

Work Phone: _____
Home Phone: _____
Mobile Phone: _____

Plan Doctor: _____
Doctor In-Charge: _____
Signature: _____
Date: _____

How to give EpiPen® or EpiPen®Jr

1.Form fist around EpiPen® and pull off grey cap.

2.Place black end against outer mid-thigh.

3.Push down **HARD** until a click is heard or felt and hold in place for 10 seconds

4.Remove EpiPen® and be careful not to touch the needle. Massage the Injection site for 10 seconds

MILD TO MODERATE ALLERGIC REACTION

→ swelling of lips, face, eyes
→ hives (urticaria)
→ abdominal pain, vomiting

ACTION

→ stay with child and call for help
→ give medications (if prescribed) _____
_____
→ locate EpiPen® or EpiPen®Jr
→ contact parent/carer

Watch for signs of Anaphylaxis

ANAPHYLAXIS (SEVERE ALLERGIC REACTION)

→ difficulty/noisy breathing
→ swelling of tongue
→ swelling/tightness in throat
→ difficulty talking and/or hoarse voice
→ wheeze or persistent cough
→ loss of consciousness and/or collapse
→ pale and floppy (young children)

ACTION

→ Give EpiPen® or EpiPen®Jr
→ Call ambulance. Telephone: 999
→ Contact parent/carer

If in doubt, give EpiPen® or EpiPen®Jr

Additional Instructions

_____
_____
_____

This action plan is developed by Department of Paediatrics and Adolescent Medicine, HKU and QMH

過敏休克症的緊急應變措施

Label here

病人姓名: _____

出生日期: _____

已知嚴重過敏: _____

_____

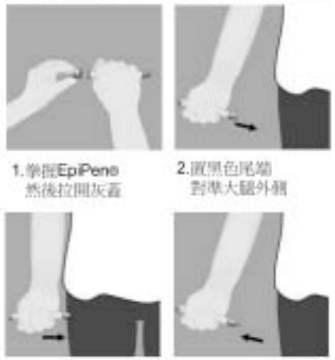
家長/監護人名稱: _____

_____

公司電話: _____
住宅電話: _____
手提電話: _____

計劃醫生: _____
主診醫生: _____
簽署: _____
日期: _____

如何施用EpiPen® 或EpiPen®Jr



1.拿起EpiPen® 然後拉開灰蓋

2.置黑色尾端對準大腿外側

3.大力按下直至聽到或感到"卡"聲, 維持動作十秒鐘

4.移除EpiPen®, 避免接觸針頭.按摩注射部位十秒鐘

輕至中度敏感反應

→ 嘴唇, 臉頰, 眼睛腫脹
→ 風疹 (蕁麻疹)
→ 腹痛, 嘔吐

採取行動

→ 留在小童身邊及致電求救
→ 給予藥物(如已處方) _____
→ 找出EpiPen®或EpiPen®Jr
→ 聯絡家長或監護人

觀察過敏症病徵

過敏休克症 (各樣敏感反應)

→ 呼吸困難/ 嘈雜
→ 舌頭腫脹
→ 喉嚨腫脹/ 收窄
→ 發音困難和/ 或聲音沙啞
→ 喘息或持續咳嗽
→ 神智不清或虛脫
→ 臉色蒼白及肌張力減退 (幼童)

採取行動

→ 施用EpiPen®或EpiPen®Jr
→ 致電救護車, 電話: 999
→ 聯絡家長或監護人

如有懷疑是嚴重過敏, 請即施用EpiPen®或EpiPen®Jr

附加指引

_____
_____
_____

本單張由香港大學瑪麗醫院兒童及青少年學系策劃制定

Practice parameter update 2011 on stinging insect hypersensitivity

- Immediate hypersensitivity skin tests with stinging insect venoms are indicated for subjects who are candidates for venom immunotherapy (A)
  - Intracutaneous skin tests rather than in-vitro assays should be used as initial measurement of venom-specific IgE (C)
  - If skin test negative and patient had severe allergic reaction, in-vitro testing, repeat skin testing, or both
  - No correlation between sensitivity of skin tests, serological IgE test and the severity of clinical symptoms (C)
  - Skin tests with imported fire ant sensitivity is performed with whole-body extracts (B)
  - Detection requires testing with all commercially available bee and vespid venoms and might include fire ant extracts if exposed

Practice parameter update 2011 on stinging insect hypersensitivity

- Venom immunotherapy (VIT) is recommended for all patients who have experienced a systemic reaction to an insect sting and who have specific IgE to venom allergens (A)
  - VIT unnecessary among children 16yo and younger with cutaneous systemic reactions without other systemic features (C)
  - Adults with only cutaneous systemic reaction are generally considered candidates for VIT, although controversial (D)
  - VIT unnecessary in patients with large local reactions to stings (risk of systemic reaction if re-stung is 5-10%) but might be considered with frequent unavoidable exposure (B)
  - Conflicting opinions regarding VIT with single or all-insect venom

Practice parameter update 2011 on stinging insect hypersensitivity

- VIT with imported fire ant whole body extracts is recommended for all patients who have experienced a systemic reaction to a fire ant sting and who have positive skin test responses or allergen-specific serologic test results with imported fire an whole body extract (B)
  - VIT may be considered for children who live in areas where fire ants are prevalent

Practice parameter update 2011 on stinging insect hypersensitivity

- VIT should usually be continued for at least 3-5 years (despite +ve skin tests, 80-90% will not have systemic reactions after discontinuation, relapse less likely for 5-year than 3-year therapies). Some high risk patients may need to continue to extended period of time or indefinitely despite negative skin tests. There is no test to identify potential relapses after discontinuation.
  - Special considerations:
  - High risk factors (near-fatal reaction before VIT, systemic reaction during VIT, honeybee allergy, increased baseline serum tryptase levels, underlying medical conditions and concomitant medications , and frequent exposure) (B)
  - Quality of life (limitation of activity, anxiety about unexpected stings) (A)
  - Duration of VIT with imported fire ant whole body extracts was less well studied (C)

Beware of atypical manifestations of anaphylaxis

- 2nd National Institute of Allergy and Infectious Disease/ Food Allergy and Anaphylaxis network symposium 2006
- Anaphylaxis highly likely if one of three criteria fulfilled

1. Acute onset of an illness (minutes to several hours) with involvement of the skin, mucosal tissue, or both (e.g., generalized hives, pruritus or flushing, swollen lips, tongue, uvula) and at least one of the following
    - Respiratory compromise (e.g., dyspnea, wheeze-bronchospasm, stridor, reduced peak flow, hypoxemia)
    - Reduced BP or associated symptoms of end-organ dysfunction (e.g., hypotonia, collapse, syncope, incontinence)

- [Note: no requirement for a history of exposure to an allergen in this definition]

Sampson HA, Munoz-Furlong A, Campbell RL, et al. Second symposium on the definition and management of anaphylaxis: Summary report- second National Institute of Allergy and Infectious Disease/Food Allergy and Anaphylaxis network symposium. J Allergy Clin Immunol 2006;117:391-7.
Mallon WK. Chapter 30: Be wary of Be wary of the atypical presentations of of anaphylaxis. (in section III: Allergy. in Avoiding common errors in the Emergency Department. Amal Mattu. Lippincott Williams & Wilkins 2010)

Beware of atypical manifestations of anaphylaxis

2. Two or more of the following that occur rapidly after exposure to a likely allergen for that patient (minutes to several hours)
    - Involvement of the skin-mucosal tissue
    - Respiratory compromise (e.g., dyspnea, wheeze-bronchospasm, stridor, reduced peak flow, hypoxemia)
    - Reduced BP or associated symptoms of end-organ dysfunction (e.g., hypotonia, collapse, syncope, incontinence)
    - ***Persistent gastrointestinal symptoms***

Mallon WK. Chapter 30: Be wary of Be wary of the atypical presentations of of anaphylaxis. (in section III: Allergy. in Avoiding common errors in the Emergency Department. Amal Mattu. Lippincott Williams & Wilkins 2010)

Beware of atypical manifestations of anaphylaxis

3. Reduced BP after exposure to known allergen for that patient
    - Infants and children: low systolic BP (age specific) or >30% decrease in systolic BP
    - Adults: systolic BP <90 mm Hg or >30% decrease from the patient's baseline

Mallon WK. Chapter 30: Be wary of Be wary of the atypical presentations of of anaphylaxis. (in section III: Allergy. in Avoiding common errors in the Emergency Department. Amal Mattu. Lippincott Williams & Wilkins 2010)

U.R. Müller severity grading of systemic allergic reactions

1. Generalised urticaria (incl. periorbital oedema) or erythema, itching, malaise, or anxiety
2. Angioedema or two of more of: chest or throat tightness, nausea, vomiting, diarrhoea, abdominal pain, dizziness
3. Dyspnoea, wheezing or stridor, or two or more of: dysphagia, dysarthria, hoarseness, weakness, confusion, feeling of impending disaster
4. Hypotension (SBP<90), collapse, loss of consciousness, urinary or faecal incontinence, or cyanosis

Müller U. Insect sting allergy: clinical picture, diagnosis and treatment. New York: Gustav Fischer Verlag, 1990.

The patient is now having anaphylaxis and a high blood pressure, should I give adrenaline?

The patient is now having anaphylaxis and a high blood pressure, should I give adrenaline?

- The definitive therapy for anaphylaxis is adrenaline by injection.
- Should be given to any patient with more than a cutaneous reaction.
- There is a (distressing) tendency by both patients and doctors to treat anaphylaxis without adrenaline.
- Anaphylaxis *per se* is associated with coronary vasospasm.
- Failure or delay to give adrenaline increases mortality in anaphylaxis.

Freeman TM. Hypersensitivity to hymenoptera stings. NEJM 2004;351(19):1978-84.

Biphasic anaphylactic reactions

- Definition
  - Any anaphylactic reaction occurring after initial treatment and complete resolution of symptoms[i]
- Comprise 3-20% of all-cause anaphylactic reactions. Probably less common among insect bite cases and generally associated with the most severe reactions[ii]
- Local study in HK showed mean time from presentation to A&E to onset of biphasic reactions was 8.22 hours (SD 5.46, range 1.4-23)[iii]
- No hard-and-fast rule in duration of observation
- 6 - 8 hours[iv] usually as most recurrences would manifest[v], but case within 24 hours also reported

i. Lee JM, Greenes DS. Biphasic anaphylactic reactions in pediatrics. Pediatrics 2000;106:762-6.
ii. Golden DB. Patterns of anaphylaxis: acute and late phase features of allergic reactions. In: Bock G, Goode J, eds. Anaphylaxis. Novartis Found Symp 257. Chichester, UK: John Wiley and Sons, 2004;101-10.
iii. Smit de V, Cameron PA, Rainer TH. Anaphylaxis presentations to an emergency department in Hong Kong: incidence and predictors of biphasic reactions. J Emerg Med 2005;28:381-95.
iv. Brown PFT. Therapeutic controversies in the management of acute anaphylaxis. J Accid Emerg Med 1998;15:89-95.
v. Tole JW, Lieberman P. Biphasic anaphylaxis: review of incidence, clinical predictors, and observation recommendations. Immunol Allergy Clin North Am 2007;27:309-26.

Resuscitation Council (UK)

Anaphylactic reaction?

↓

Airway, Breathing, Circulation, Disability, Exposure

↓

Diagnosis - look for:
- Acute onset of illness
- Life-threatening Airway and/or Breathing and/or Circulation problems [1]
- And usually skin changes

↓

- **Call for help**
- Lie patient flat
- Raise patient's legs

↓

Adrenaline [2]

↓

When skills and equipment available:

- Establish airway
- High flow oxygen
- IV fluid challenge [3]
- Chlorphenamine [4]
- Hydrocortisone [5]

Monitor:
- Pulse oximetry
- ECG
- Blood pressure

1 Life-threatening problems:

Airway:	swelling, hoarseness, stridor
Breathing:	rapid breathing, wheeze, fatigue, cyanosis, SpO_2 < 92%, confusion
Circulation:	pale, clammy, low blood pressure, faintness, drowsy/coma

2 Adrenaline *(give IM unless experienced with IV adrenaline)*

IM doses of 1:1000 adrenaline (repeat after 5 min if no better)

• Adult	500 micrograms IM (0.5 mL)
• Child more than 12 years:	500 micrograms IM (0.5 mL)
• Child 6 -12 years:	300 micrograms IM (0.3 mL)
• Child less than 6 years:	150 micrograms IM (0.15 mL)

Adrenaline IV to be given **only by experienced specialists**
Titrate: Adults 50 micrograms; Children 1 microgram/kg

3 IV fluid challenge:

Adult - 500 – 1000 mL
Child - crystalloid 20 mL/kg

Stop IV colloid if this might be the cause of anaphylaxis

	4 Chlorphenamine (IM or slow IV)	**5 Hydrocortisone** (IM or slow IV)
Adult or child more than 12 years	10 mg	200 mg
Child 6 - 12 years	5 mg	100 mg
Child 6 months to 6 years	2.5 mg	50 mg
Child less than 6 months	250 micrograms/kg	25 mg

Summary of Recommendations – Management of Acute Allergic Reaction

Assess for airway, breathing and circulation →
If necessary:
- Perform cardiopulmonary resuscitation
- Manage airway
- Administer high flow oxygen
- Administer boluses of IV fluids at a dose of 20mg/kg

Acute allergic reaction diagnosed? →
- Administer adrenaline intramuscularly into the lateral thigh at a dose of 500µg repeated every 5 minutes if necessary
- Consider slow IV adrenaline injection at a dilution of 1:100,000 only in cases of refractory hypotension or peri-cardiac arrest situations

→
- Consider serial monitoring of tryptase levels within 3 to 12 hours of the start of acute allergic reaction

Known allergen? →
- Remove allergen if possible without risk of harm to the patient

Risk of recurrence of reaction? →
- Administer chlorphenamine 10mg by slow IV or IM injection
- Monitor blood pressure

Protracted reaction? →
- Administer 100–200mg hydrocortisone IV

Wheeze? →
- Give nebulised salbutamol at a dose of 5mg repeated every 5–15 minutes if necessary

Moderate or severe reaction? →
- Observe for biphasic reaction
- Refer to allergy specialist

Acute allergic reaction diagnosed? →
- Consider 3 day course of oral antihistamines or corticosteroids
- Prescribe adrenaline auto-injector for patients with severe anaphylactic reactions to a known trigger
- Advise patient to avoid trigger in future

Special consideration: Bee sting of the cornea and conjunctiva

- Retained bee stinger
  - Triad of penetrating, immunologic, and toxic injury
  - Reactions are most often result of injected toxins rather than the stinger itself. Once venom is inactivated the stinger can become completely inert

2 groups of biologic amines in bee venom

- Non-enzymatic (toxic effects)
  - Mellitin - cataract, iris depigmentation, causes platelets to release serotonin
  - Apamin - K-channel blockade, internuclear ophthalmoplegia, sector iridoplegia
  - Others: iminimine, mast cell degranulating peptide

Table 1. Reported Complications Associated with Bee and Wasp Corneal Stings*

Cornea
Retained stinger
Central corneal edema
Corneal infiltrate
Striate keratopathy
Bullous keratitis (wasp stings)
Conjunctivae
Chemosis
Hyperemia of bulbar conjunctiva
Mucopurulent keratoconjunctivitis
Anterior chamber
Anterior uveitis
Hyphema
Hypopyon
Lens subluxation
Partial iris atrophy
Cataract formation
Iris depigmentation
Sector iridoplegia
Anterior and posterior lens capsular opacities
Posterior chamber
Optic neuritis
Papilledema
Retrobulbar neuritis
Other
Internal ophthalmoplegia
External ophthalmoplegia

The Journal of Emergency Medicine, Vol. 20, No. 2, pp. 125–128, 2001

2 groups of biologic amines in bee venom

- Enzymatic (immunologic effects)
  - Phospholipases A and B - hydrolysis of phospholipids, tissue destruction
  - Hyaluronidase - increases capillary permeability, increases penetration of more venom
  - (Highly antigenic, release of chemical mediators of inflammation, type I IgE-mediated hypersensitivity)

Management of bee sting associated eye injury

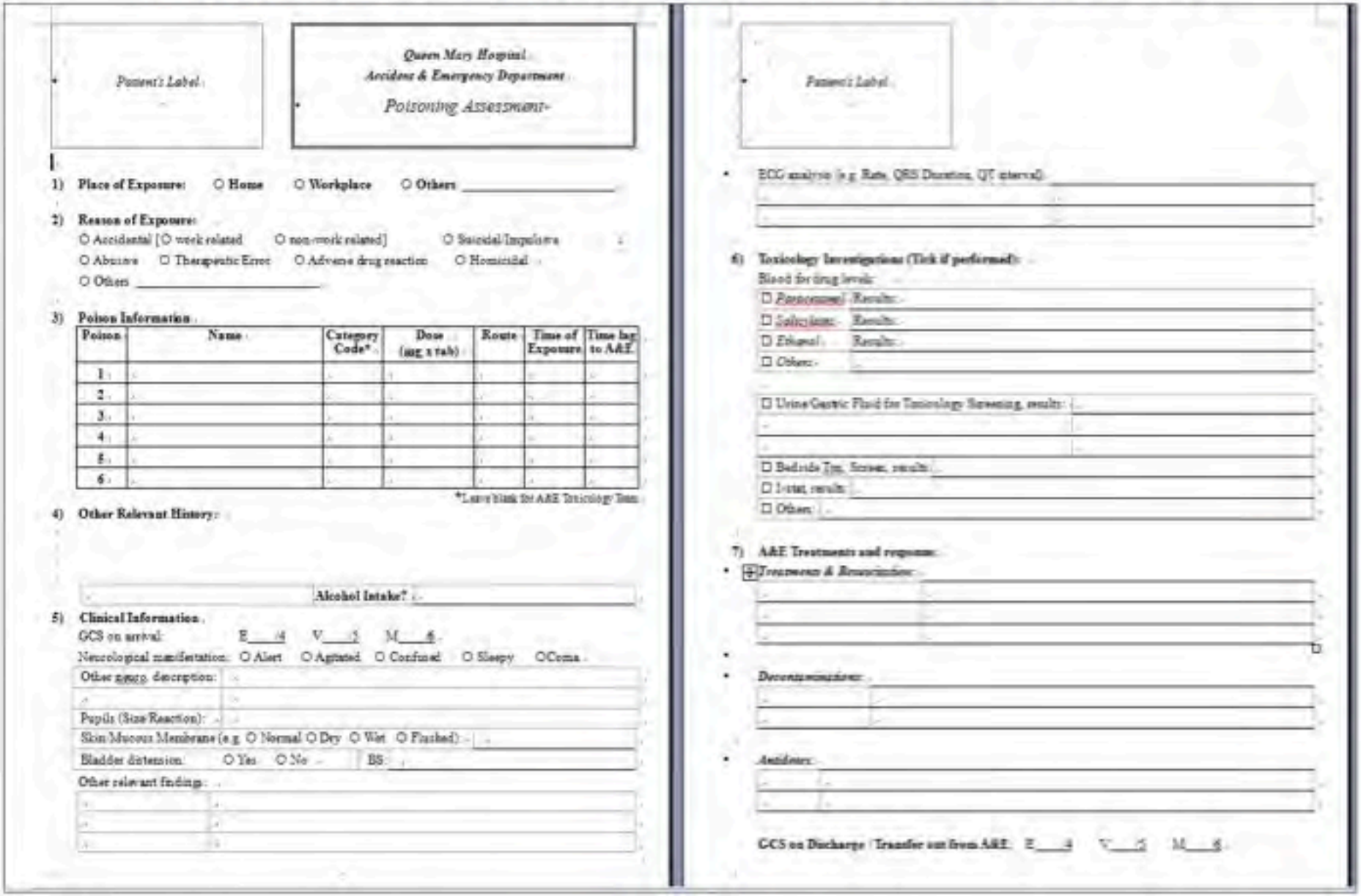
- Visual acuity before any drugs
- Topical opthalmic anaesthetic for pain
- Cycloplegic if iritis (pain, injection, reduced visual acuity) to relieve ciliary spasm
- Fundoscopy for hyphaema, hypopyon, lens dislocation. Better with slit-lamp exam
- Anti-tetanus toxoid
- Do not attempt stinger removal due to risk of retained fragments
- Analgesics, topical corticosteroid, topical / oral antibiotics
  - Commonest agent cultured: coagulase-negative Staphylococcus
  - Gentamycin or fluoroquinolone
- Topical / oral antihistamines for immunologic injury (chemosis, corneal oedema, conjunctival injection)
- Urgent ophthalmologist referral in 24 hours

Poisoning Information System

Poisoning Information System in QMH

- Special code "4" on A&E Medical Record to indicate cases known/suspected to be suffering from poisoning and overdose on presentation
- Nurses stamp a chop "Refer to CMS Poisoning Form" on Record
- CMS Poisoning Form (electronic form incorporated to CMS since 1st June 2011)
- Screening by consultant on the next day
- Dispatch of toxicology team members to patients admitted to other units. Liaison with HKPIC and TRL

QMH Poisoning Assessment Form



Patient's Label

Queen Mary Hospital
Accident & Emergency Department
Poisoning Assessment

1) **Place of Exposure:** ○ Home ○ Workplace ○ Others _____

2) **Reason of Exposure:**
○ Accidental [○ work related ○ non-work related] ○ Suicidal/Impulsive
○ Abusive ○ Therapeutic Error ○ Adverse drug reaction ○ Homicidal
○ Others _____

3) **Poison Information**

Poison	Name	Category Code*	Dose (mg x tab)	Route	Time of Exposure	Time lag to A&E
1						
2						
3						
4						
5						
6						

*Leave blank for A&E Toxicology Team

4) **Other Relevant History:**

Alcohol Intake*:

5) **Clinical Information**
GCS on arrival: E___/4 V___/5 M___/6
Neurological manifestation: ○ Alert ○ Agitated ○ Confused ○ Sleepy ○ Coma

Other neuro description:	
Pupils (Size/Reaction):	
Skin/Mucous Membrane (e.g. ○ Normal ○ Dry ○ Wet ○ Flushed):	
Bladder distension: ○ Yes ○ No	BS:
Other relevant findings:	

Patient's Label

- ECG analysis (e.g. Rate, QRS Duration, QT interval):

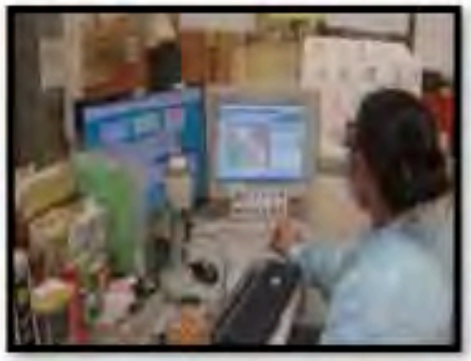
6) **Toxicology Investigations (Tick if performed):**
Blood for drug levels:
☐ Paracetamol Results:
☐ Salicylate: Results:
☐ Ethanol Results:
☐ Others:

☐ Urine/Gastric Fluid for Toxicology Screening, results:
☐ Bedside Tox. Screen, results:
☐ I-stat, results:
☐ Others:

7) **A&E Treatments and response:**
- ☐ *Treatments & Resuscitation:*
- *Decontamination:*
- *Antidotes:*

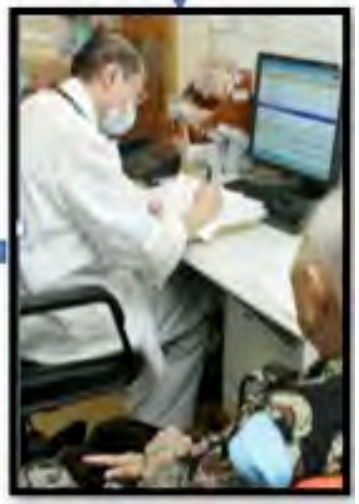
GCS on Discharge / Transfer out from A&E: E___/4 V___/5 M___/6

AED Clinical Workflow in Poisoning Case



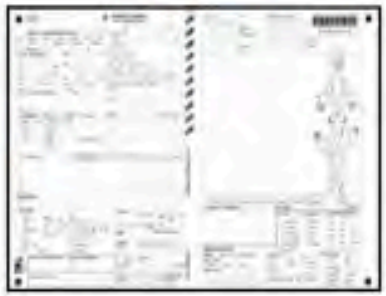
Nurse - Triage Station

Indicate in AED card



Dr - Clinical Assessment & Documentation

CMS Poisoning Case Mgt Form

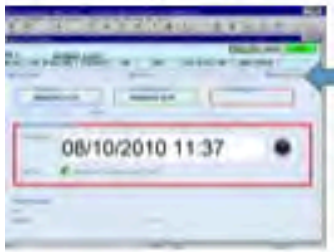


AED card (supplement)

Nurse - AED Investigation / Treatment / Discharge

View in ePR

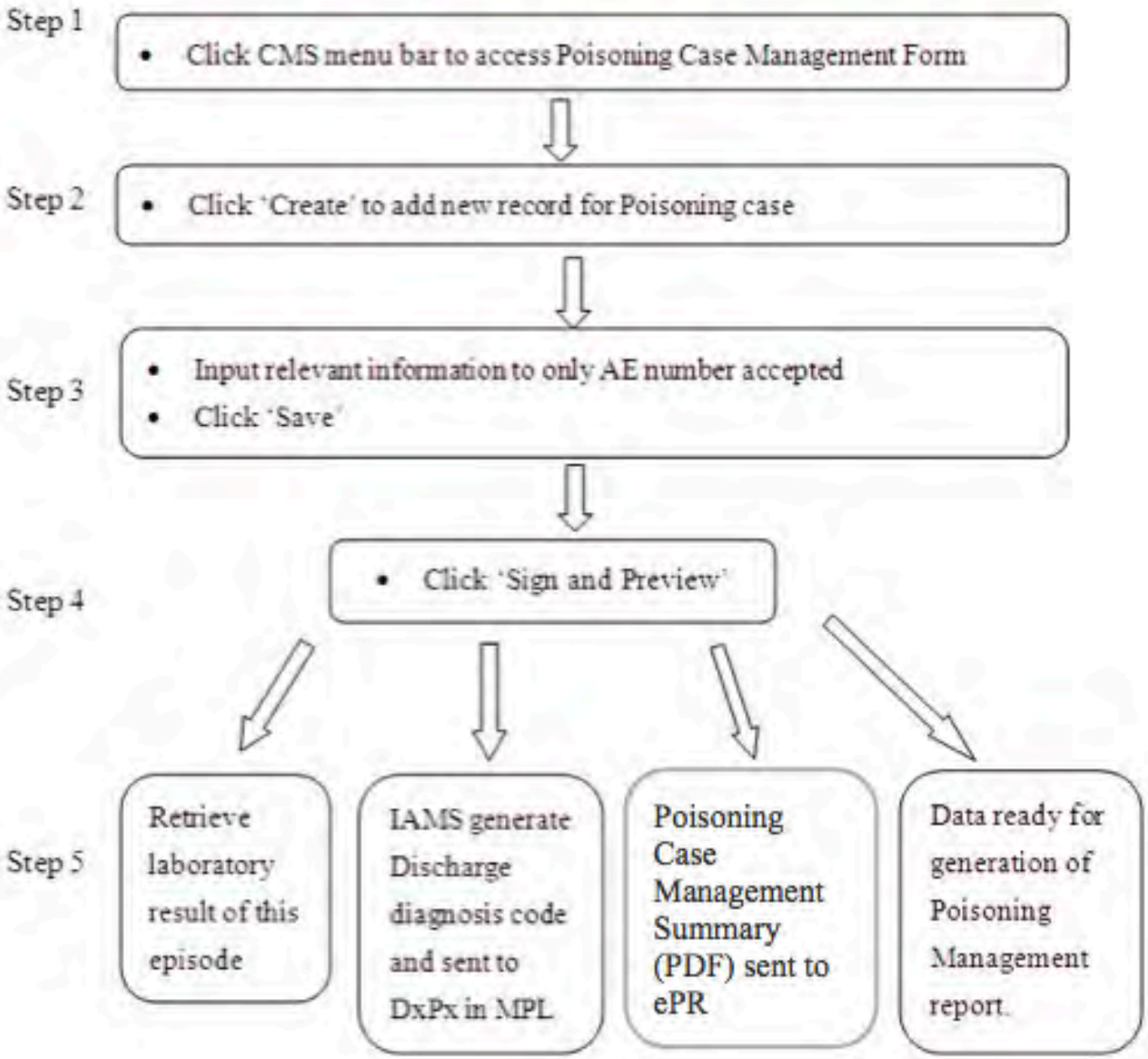
Discharge case



Benefits of CMS Poisoning Reporting Form

- Generate discharge diagnosis code
- Quick access to reference and guidelines
  - HKPIC reference page
  - Clinical guidelines
  - Antidote regimen
- Retrieval of particular lab results from ePR
- Print-out of TRL request form and HA poisoning

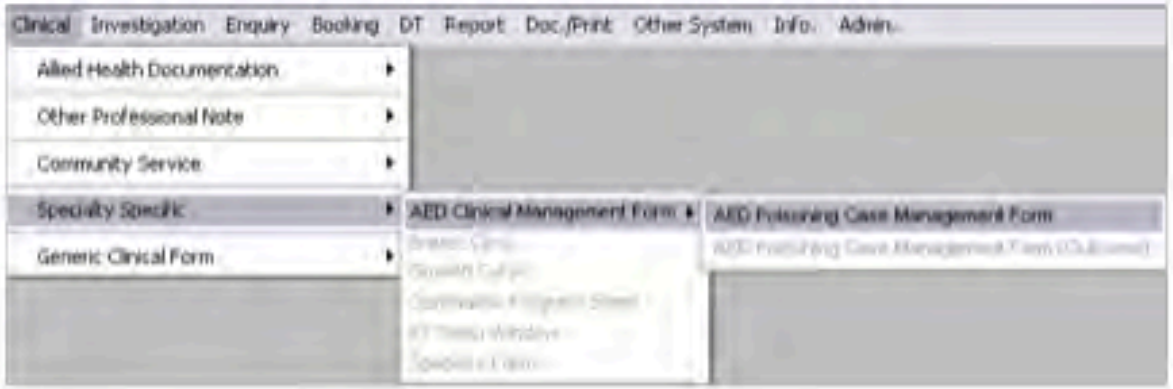
Quick Guide of using Poisoning Case Management Form



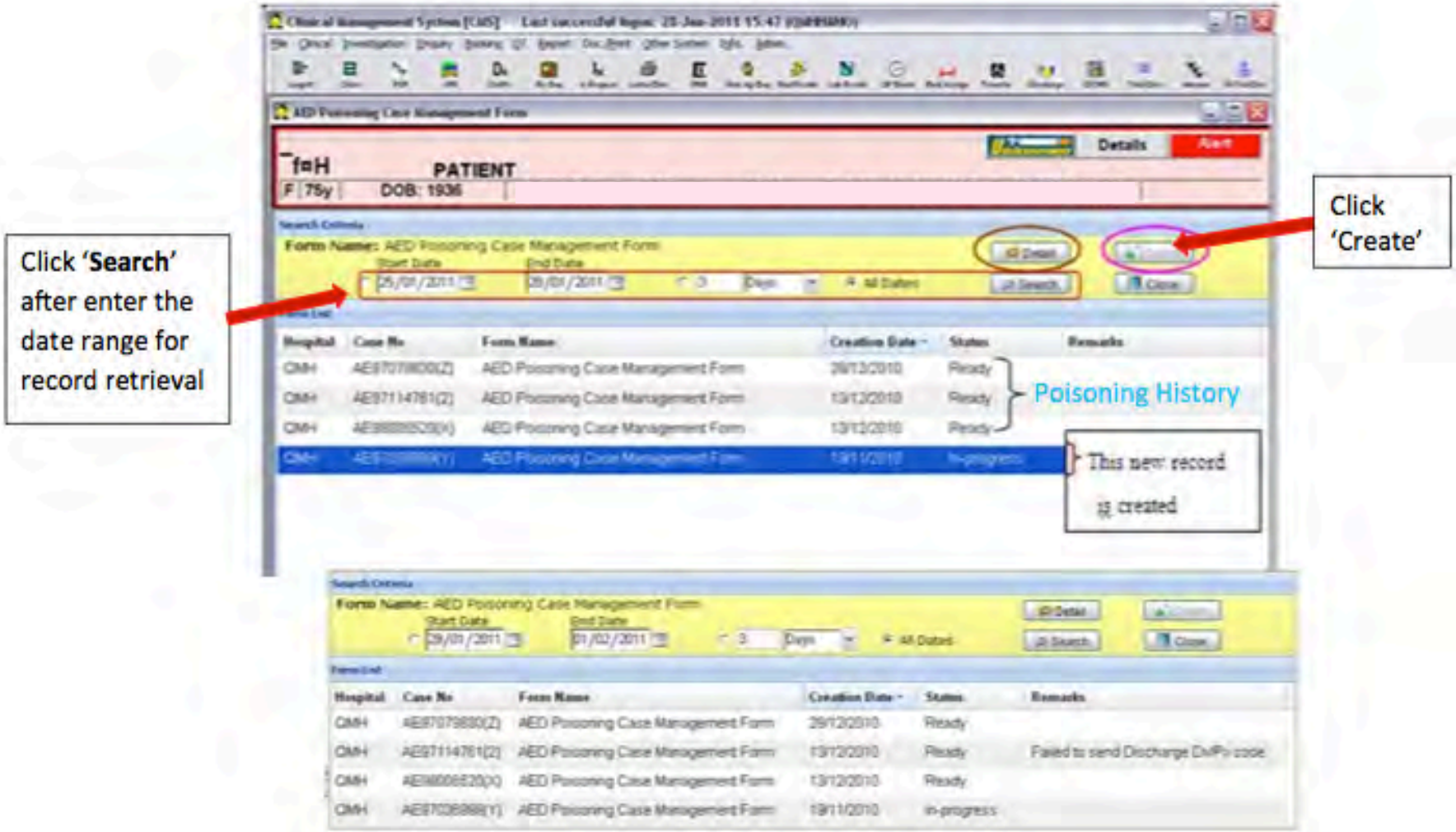
Access Poisoning Case Management Form

- Click CMS menu bar

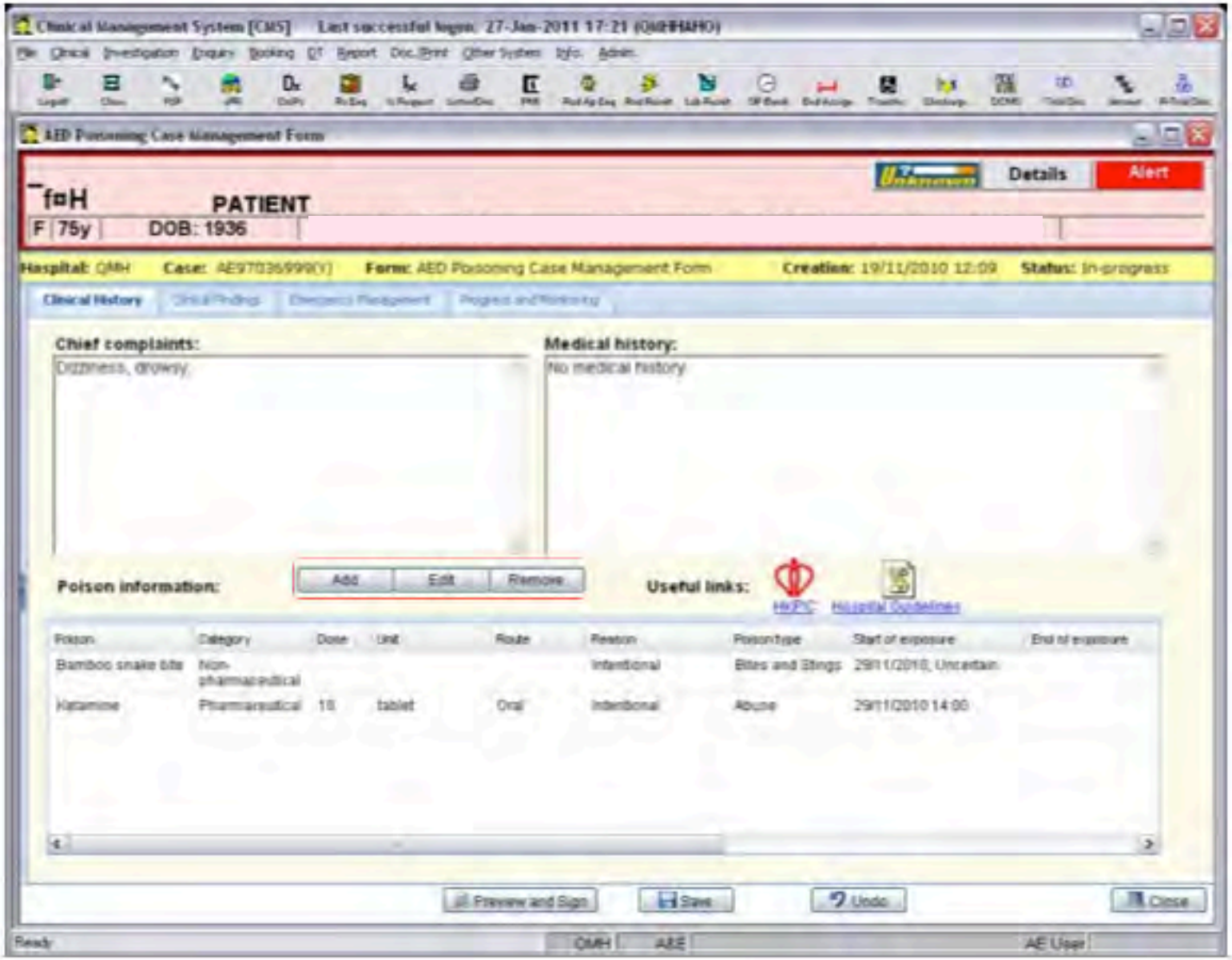
Clinical -> Specialty Specific ->AED Clinical Management Form
-> AED Poisoning Case Management Form



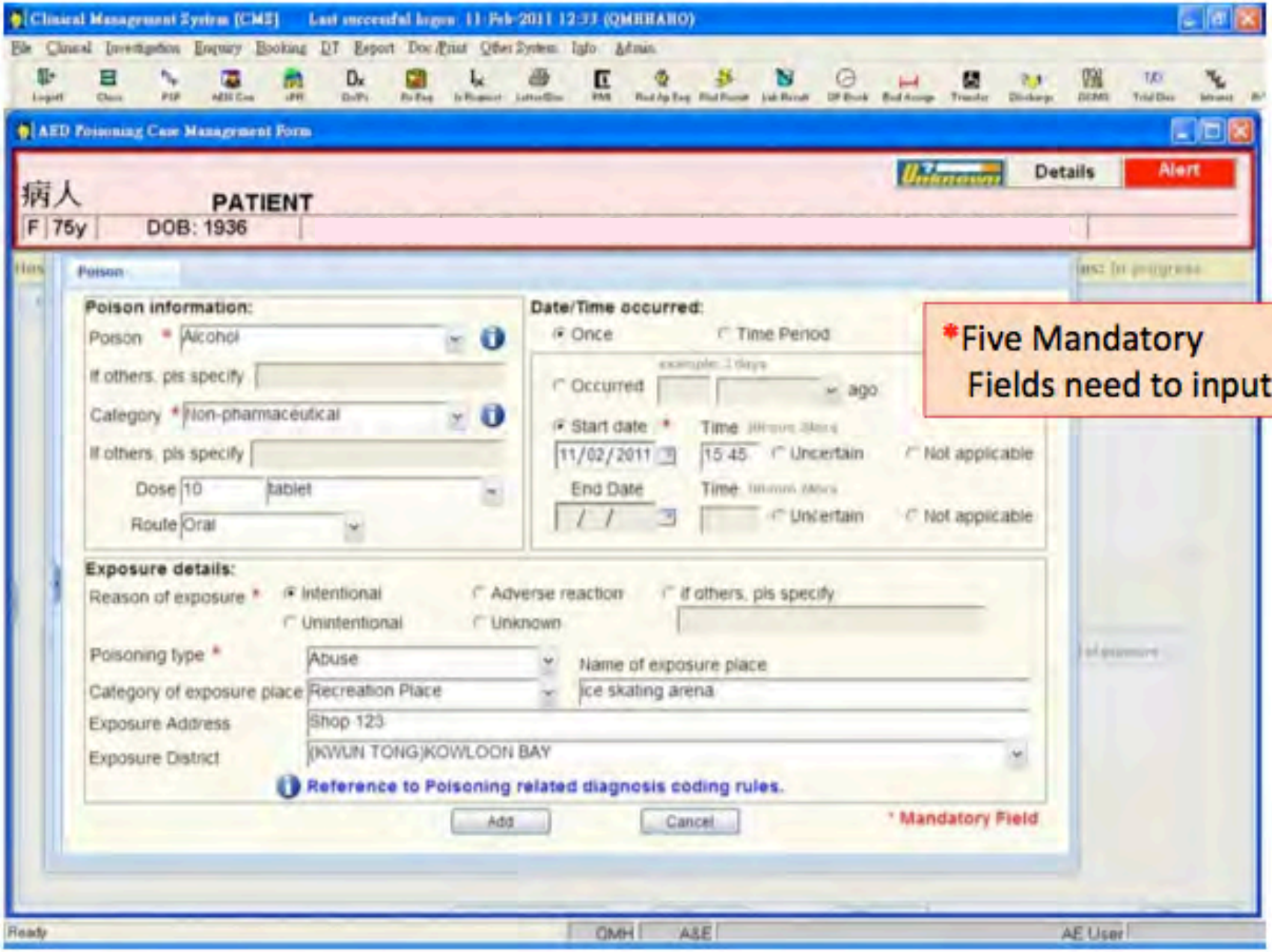
Create a new record of Poisoning Case



Chief Complaint and Medical History

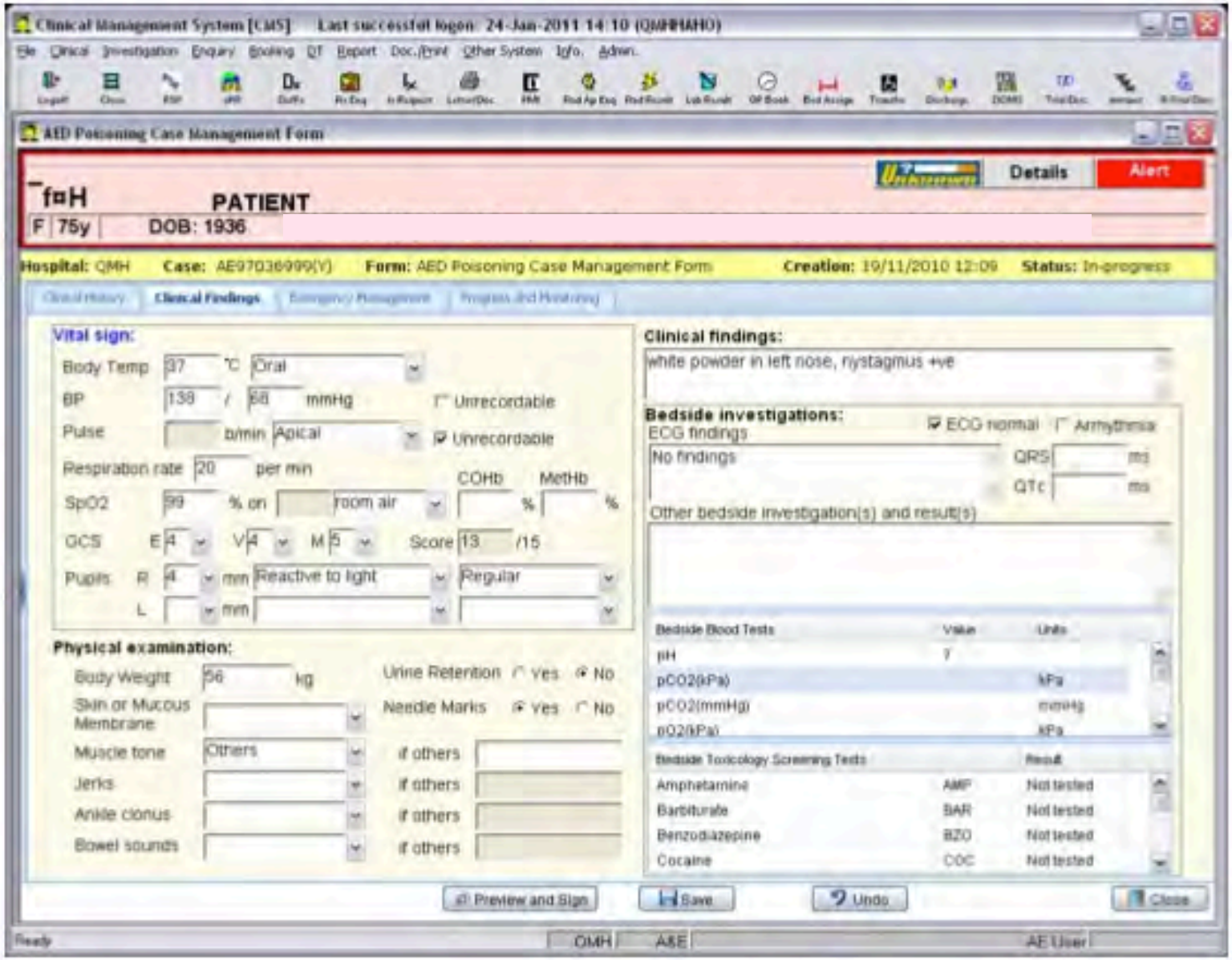


Input relevant poisoning information

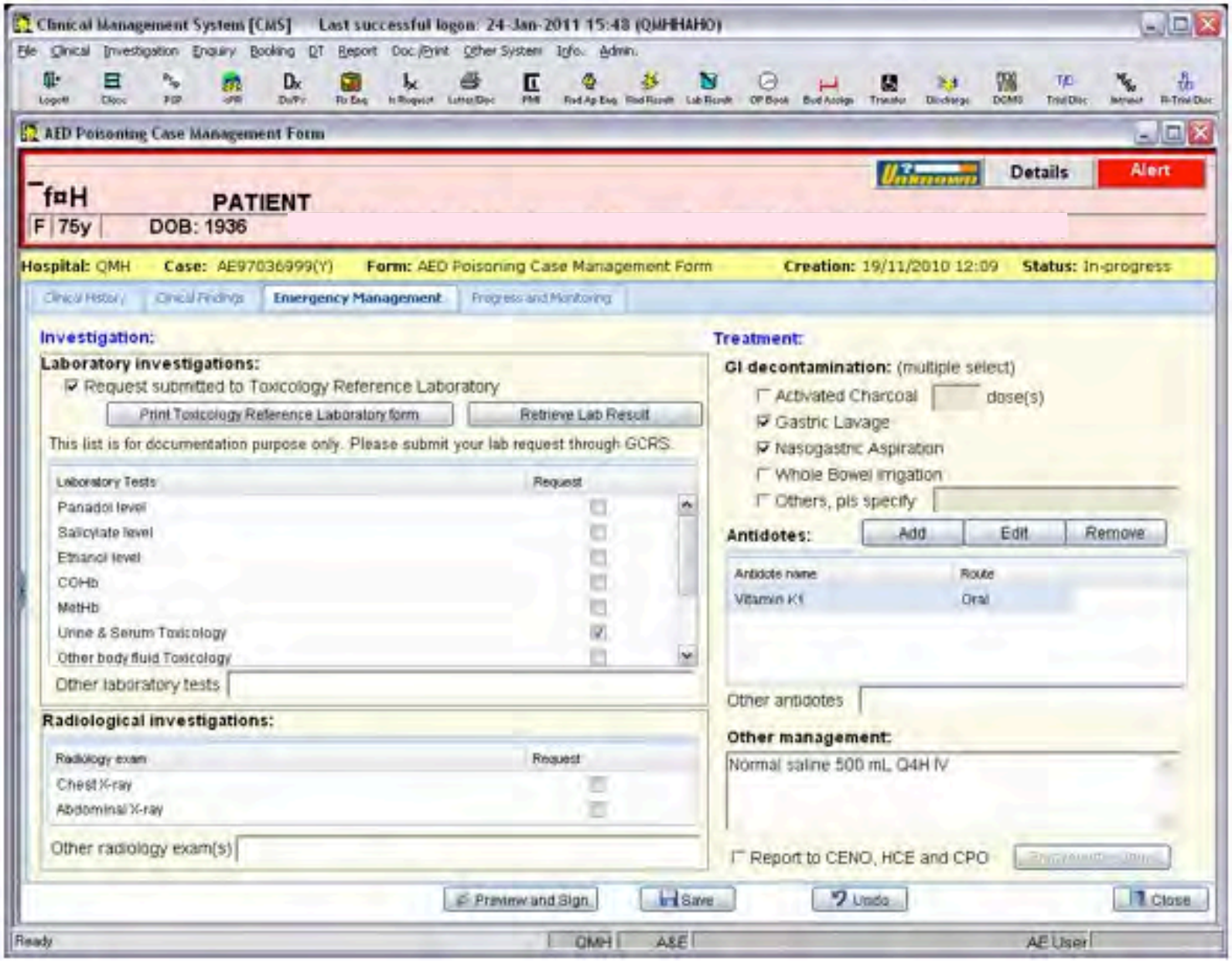


*Five Mandatory Fields need to input

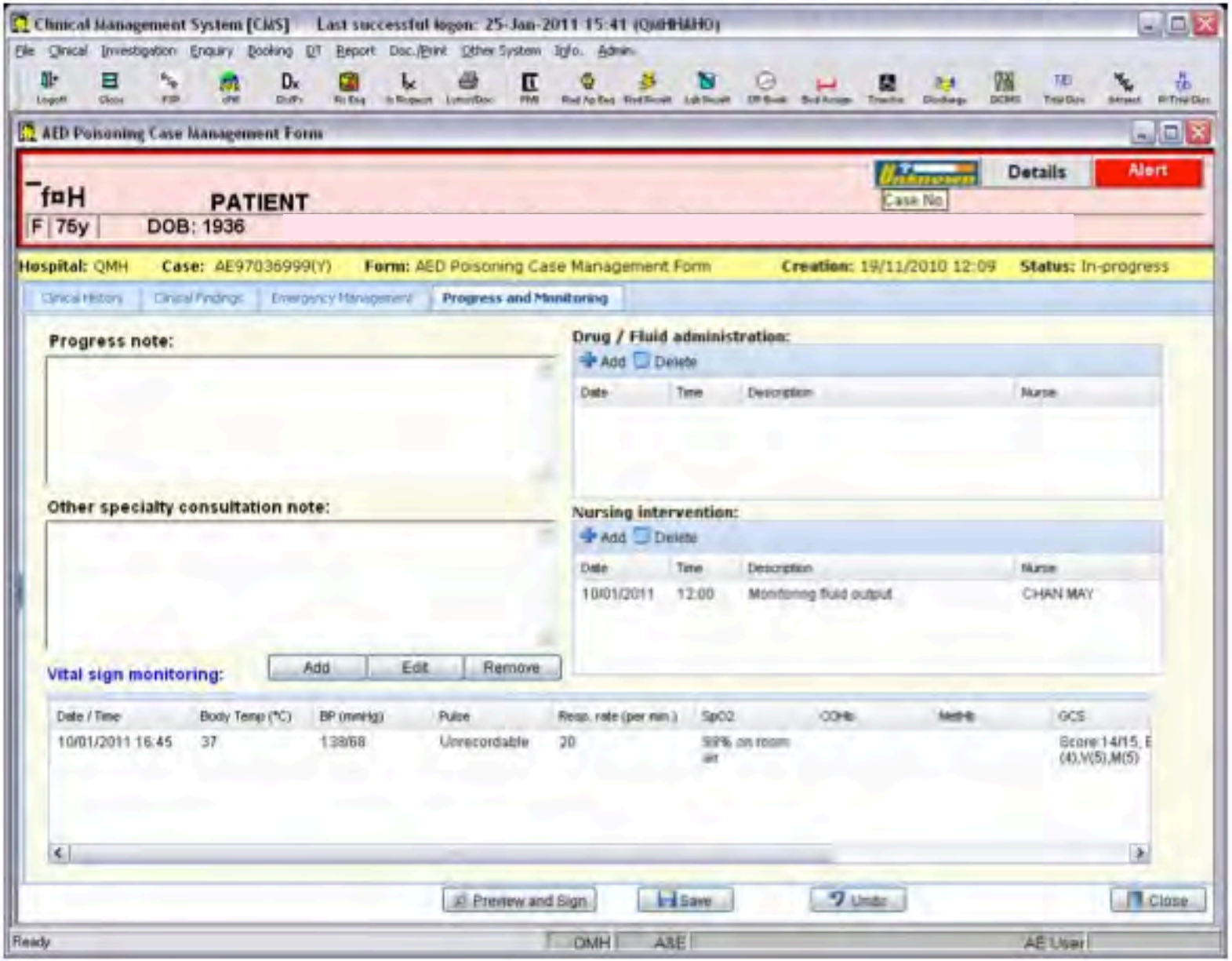
Relevant Clinical Findings



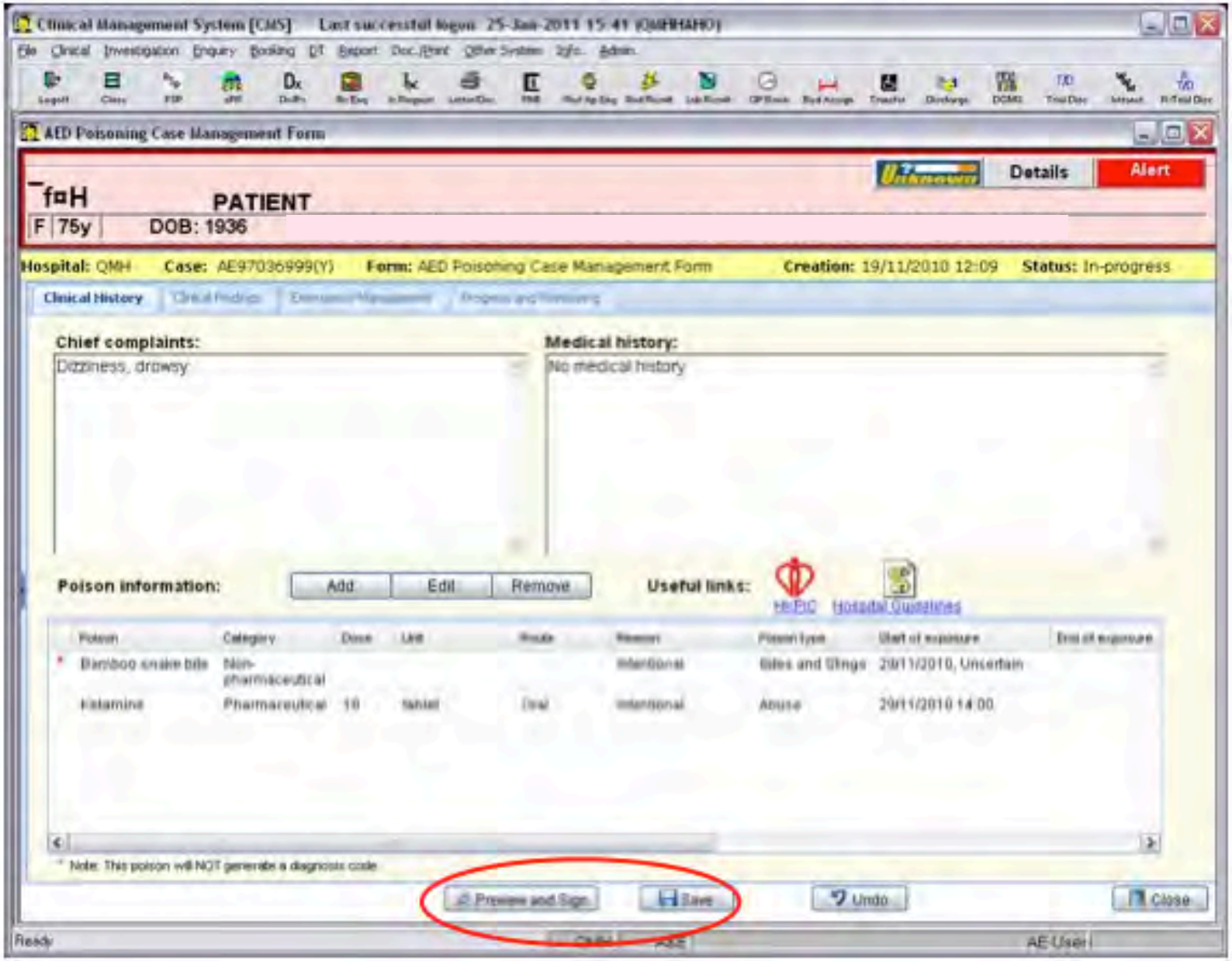
Clinical Management information



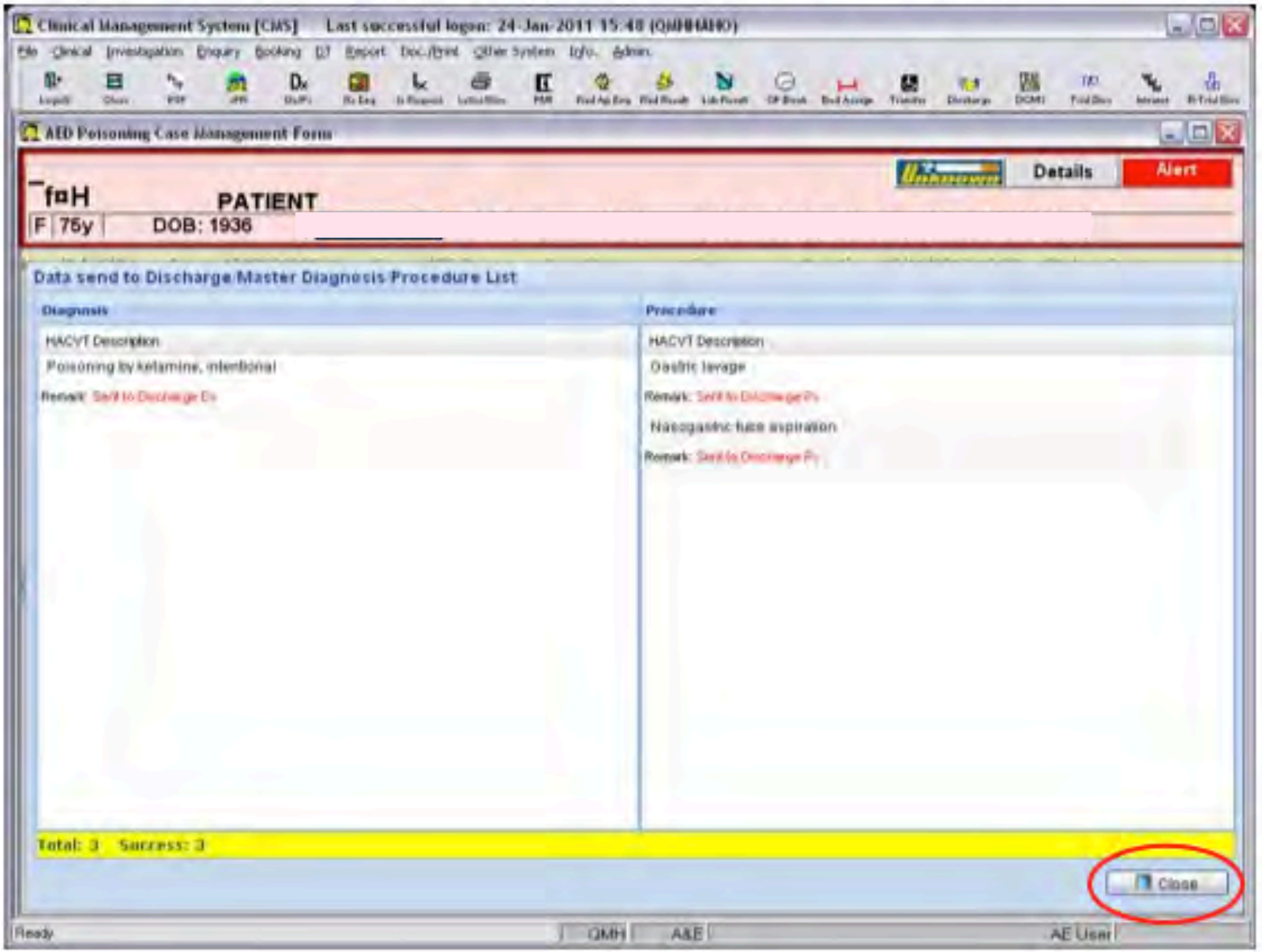
Information of progress monitoring



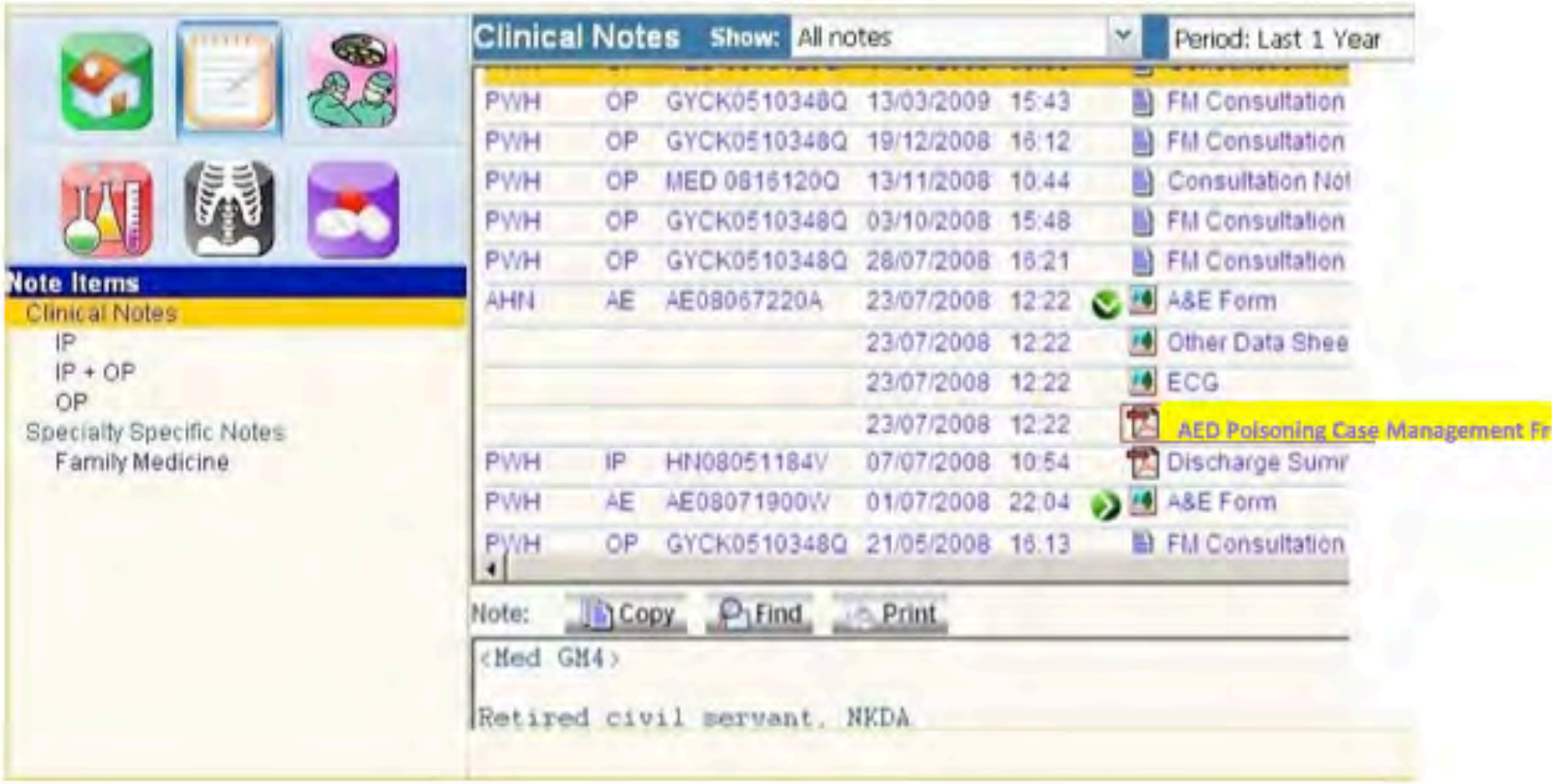
Save and confirm (Sign) the form



Generate Discharge Diagnosis Code



Share Poisoning Case Management Summary - as pdf in ePR



Hospital Authority

Queen Mary Hospital

AED Poisoning Case Management Form

Case No. AE(K)008278(4) HKID [redacted]

Name: [redacted]

DOB:

Sex: M Age:

Ward: AED1 Spec: A&E

Chief complaints:

Drowsy

Medical history:

DM, HT follow up QMH

Poison details:

Poison name: Ketamine **Category:** Pharmaceutical

Dose: 5 tablet **Route:** Oral

Start from: 03/03/2011 10:00

Poison type: Abuse **Reason of exposure:** Intentional

Place of exposure: APM Shopping Mall **Category of exposure place:** Recreation Place

Address: –

District: –

Laboratory investigations:

Request submitted to Toxicology Reference Laboratory: No

Report to CENO, CPO, HCE: No

Create by:

AE User

17/02/2011 18:32

Date / Time Signature

Signed by:

AE User

03/03/2011 12:01

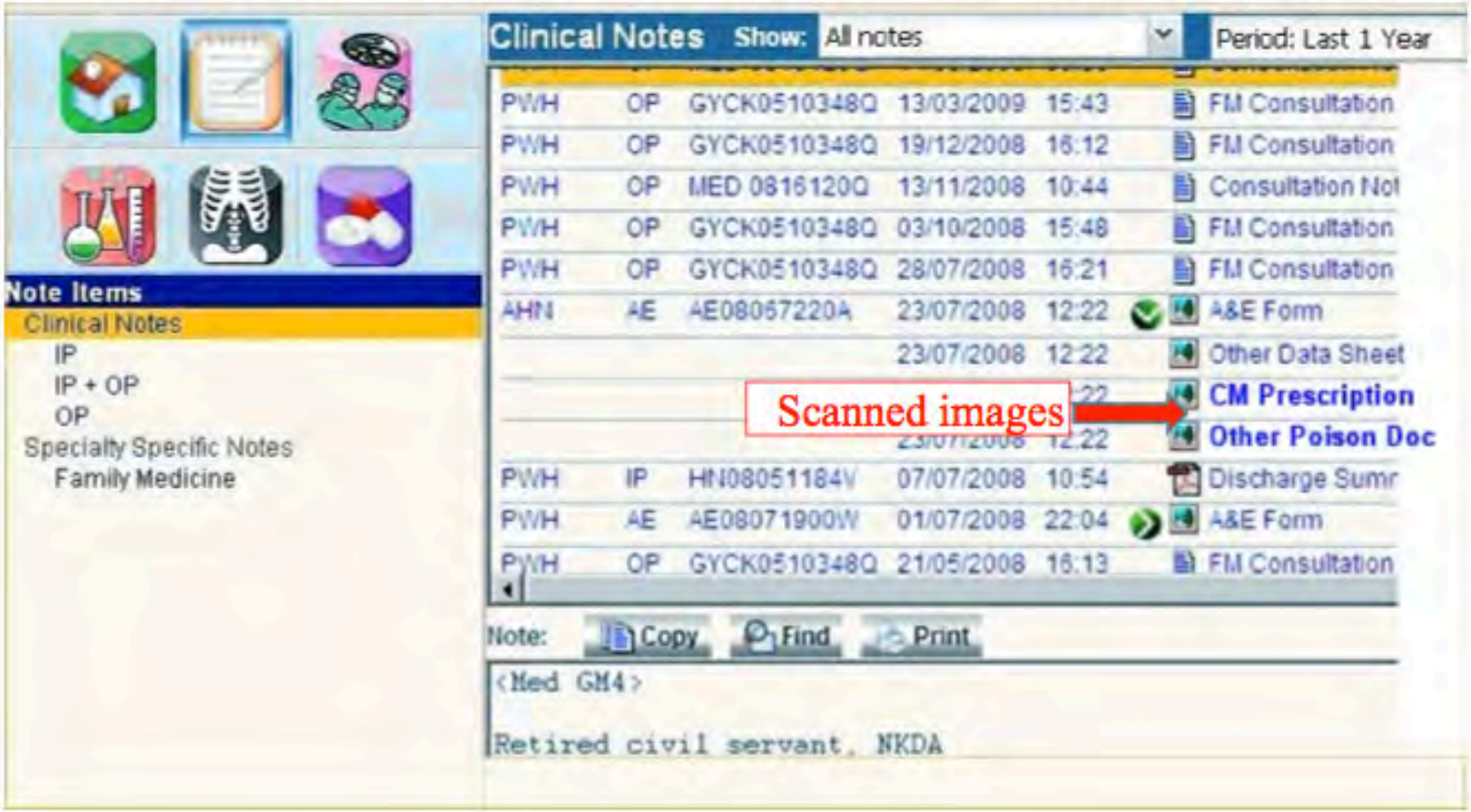
Date / Time Signature

For professional communication only

Printed on 03-03-2011 at 12:01:16 Page 1 of 1

Simple Poisoning Case Summary Management Form with five data only

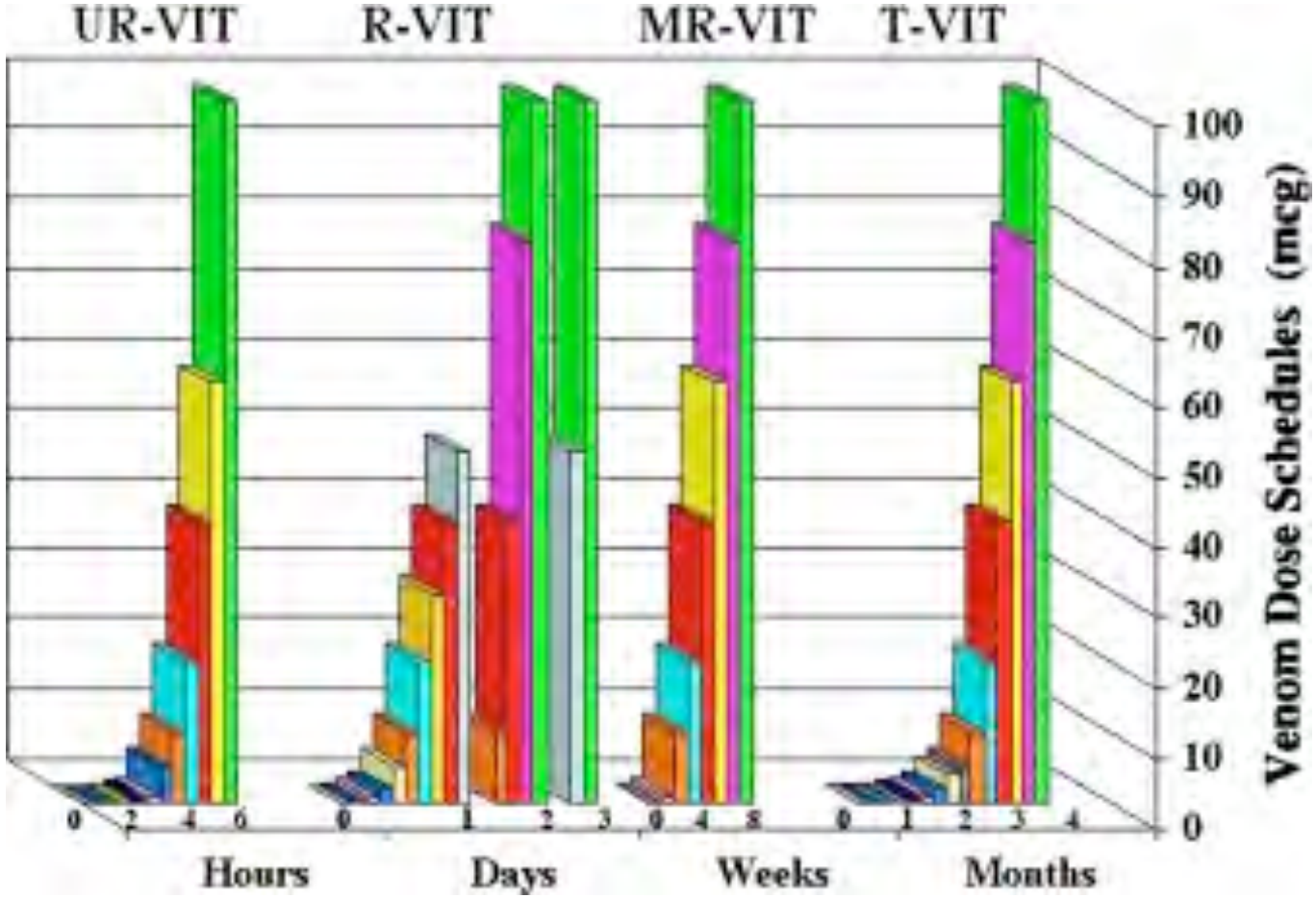
ePR lists scanned images as clinical notes



Take home messages

- Among the culprits which bites and stings, bees and wasps were big players
- Increasing incidence may be attributed to a more convenient reporting system
- Despite its low incidence, there should be high vigilance towards Hymenoptera sting associated anaphylaxis, especially atypical presentations, biphasic and protracted reactions
- Low, low threshold for adrenaline
- CMS linked electronic reporting system played a significant role in data collection

Thank you.

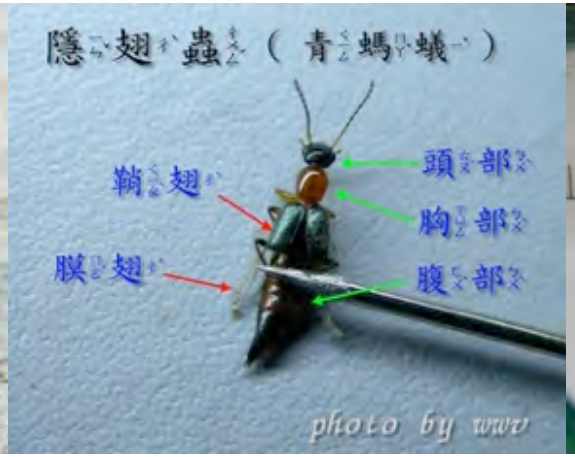


Four dose regimens reported for VIT depicting each dose given during the initial build-up stage of treatment. In the ultrarush schedule *(UR-VIT)* doses are given every 30 minutes to reach the full dose in 6 hours. In the rush schedule *(R-VIT)* doses are given every 30 minutes for 10 doses on day 1, 4 doses on day 2, and 2 doses on day 3. The modified rush schedule *(MR-VIT)* is given once weekly for 8 weeks, and the traditional schedule (T-VIT) is given weekly for 4 months or more.

Golden DBK. Insect sting allergy and venom immunotherapy: a model and a mystery. J Allergy Clin Immunol 2005;115:439-47.

Rove Beetle

Rove beetle 隱翅蟲 (Paederus spp./ “Tomcat”)

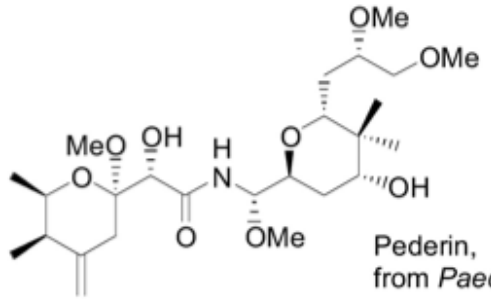


- Of clinical relevance and Hong Kong and Taiwan:
- Order: Coleoptera 鞘翅目
- Family: Staphylinidae 隱翅蟲科
- Species: Paederus fuscipes 梭毒隱翅蟲
- Active in hot and humid summer, rural areas, night time, phototaxis

Paederus dermatitis

- a.k.a. spider-lick, whiplash dermatitis, Nairobi fly dermatitis
- Usually referred to irritant contact dermatitis by a potent vesicant“paederin 隱翅蟲素” contained in haemolymph
- Other substances, e.g.“cantharidin 芫菁素” can cause blister beetle dermatitis
- Rove beetles do not bite or sting, but accidental brushing and crushing enable release of paederin to skin

Paederin



Pederin,
from *Paederus* beetles

Piel J PNAS 2002;99:14002-14007

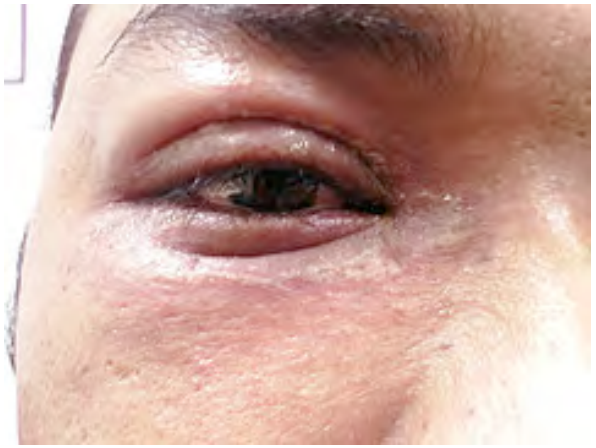
- An amide with two tetrahydropyran rings
- Production relies on activities of an endosymbiont (Pseudomonas spp.) within Paederus
- Production mainly by adult female rove beetles
- Potent vesicant
- Blocks mitosis at concentration as low as 1ng/ml by inhibiting protein and DNA synthesis
- Acantholysis (loss of intercellular connections resulting in dehiscence of keratinocytes similar to pemphigus) is probably caused by the release of epidermal proteases

Paederus dermatitis

- Irritant contact dermatitis by paederin
- Within 24-48 hours: dermatitis linearis +/- blisters +/- pustules
- 2-4 weeks: irritation, crusting and scaling, post-inflammatory hyperpigmentation
- “Kissing” lesions esp. flexor areas
- Possible complications: Post-inflammatory hyperpigmentation (1-3 months), superimposed infection, extensive exfoliative and ulcerative dermatitis requiring in-patient care
- Immediate treatment: washing areas of contact with soap and water
- Medical treatment: combined topical steroid, oral antihistamines and antibiotics

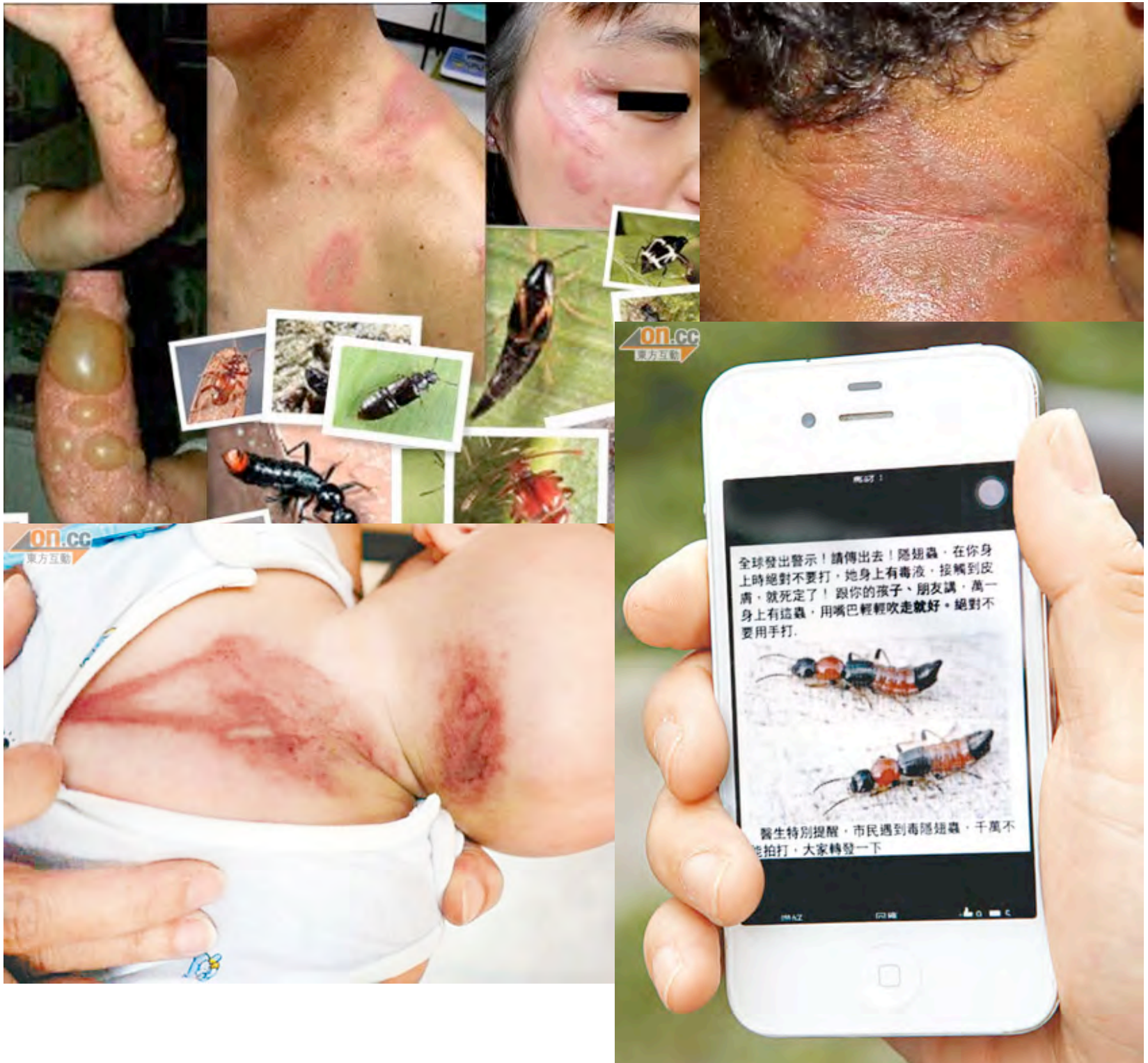
Paederus dermatitis

- Ocular and genital involvement possible due to toxin transfer with fingers
- Unilateral periorbital dermatitis
- "Nairobi eye"
- Eyewash
- Antibiotics and steroid eye drops



http://docfiles.blogspot.hk/2006/02/paederus-dermatitis.html

Gurcharan S, Ali Syed Y. Paederus dermatitis. Indian Journal of Dermatology, Venereology and Leprology 2007;73(1):13-5.


on.cc
東方互動
全球發出警示！請傳出去！隱翅蟲，在你身上時絕對不要打，她身上有毒液，接觸到皮膚，就死定了！跟你的孩子、朋友講，萬一身上有這蟲，用嘴巴輕輕吹走就好，絕對不要用手打.
醫生特別提醒，市民遇到毒隱翅蟲，千萬不
拍打，大家轉發一下

100.06.30 蘋果日報 A16 生活

隱翅蟲鑽褲襠 男LP腫痛

【南瑋瑜／台北報導】一名男子穿著寬鬆短褲踏青，突然有蟲鑽進褲襠，他搔抓後不僅左腿內側紅腫，陰囊處更是劇痛不已。就醫確診是夏季常出現的隱翅蟲皮膚炎，用藥兩周才疼癒。醫師說，隱翅蟲毒液具腐蝕性，民眾遇隱翅蟲停留身上時，應將其彈開，勿拍打，以免其毒液接觸皮膚，造成潰爛。

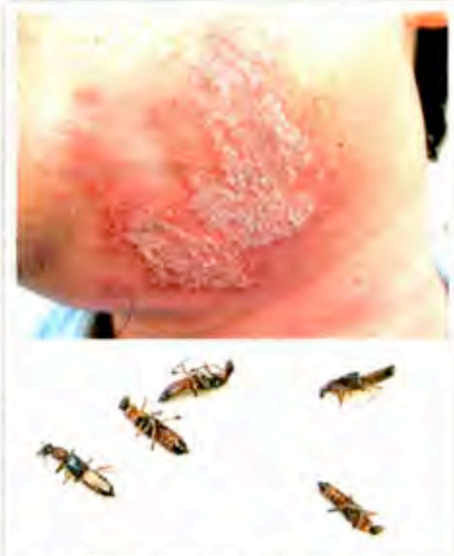
拍打後釋毒液

收治病例的彰化基督教醫院皮膚科主治醫師邱足滿說，這名二十四歲男子，就醫時先露出左腿內側紅腫皮膚，經她確診是隱翅蟲皮膚炎，接下來男子再指著下體說「裡面也很痛」，檢視才知男子左陰囊也被隱翅蟲毒液波及而紅腫、刺痛，用藥才改善。

台灣大學昆蟲系教授楊平世說，隱翅蟲身體所含的隱翅蟲素，具腐蝕性，會造成皮膚紅腫、潰爛。邱足滿說，隱翅蟲有「報復蟲」之稱，停留在人們皮膚被拍打、搔抓後，蟲體碎裂會釋放出毒液，讓皮膚在二十四小時內紅腫。

常現蹤於草叢

邱足滿提醒，即起至十月都是隱翅蟲活動期，最常出現在草叢，民眾若發現隱翅蟲停留身上，勿拍打，可將其輕輕吹開或彈開，若不慎被其毒液沾到要盡速就醫。



■隱翅蟲（下圖）毒液具腐蝕性，皮膚接觸會潰爛。上圖中患者非文中個案。 邱足滿醫師提供

隱翅蟲防治注意事項

- 裝紗窗、紗門或用蚊帳，避免蟲子爬到身上
- 在野外或草地活動，穿長袖衣物或使用驅蟲液
- 若發現身上有蟲，應將其吹開或彈開
- 若碰到毒液，以清水沖洗患部，用乾布擦乾、冰敷後盡快就醫

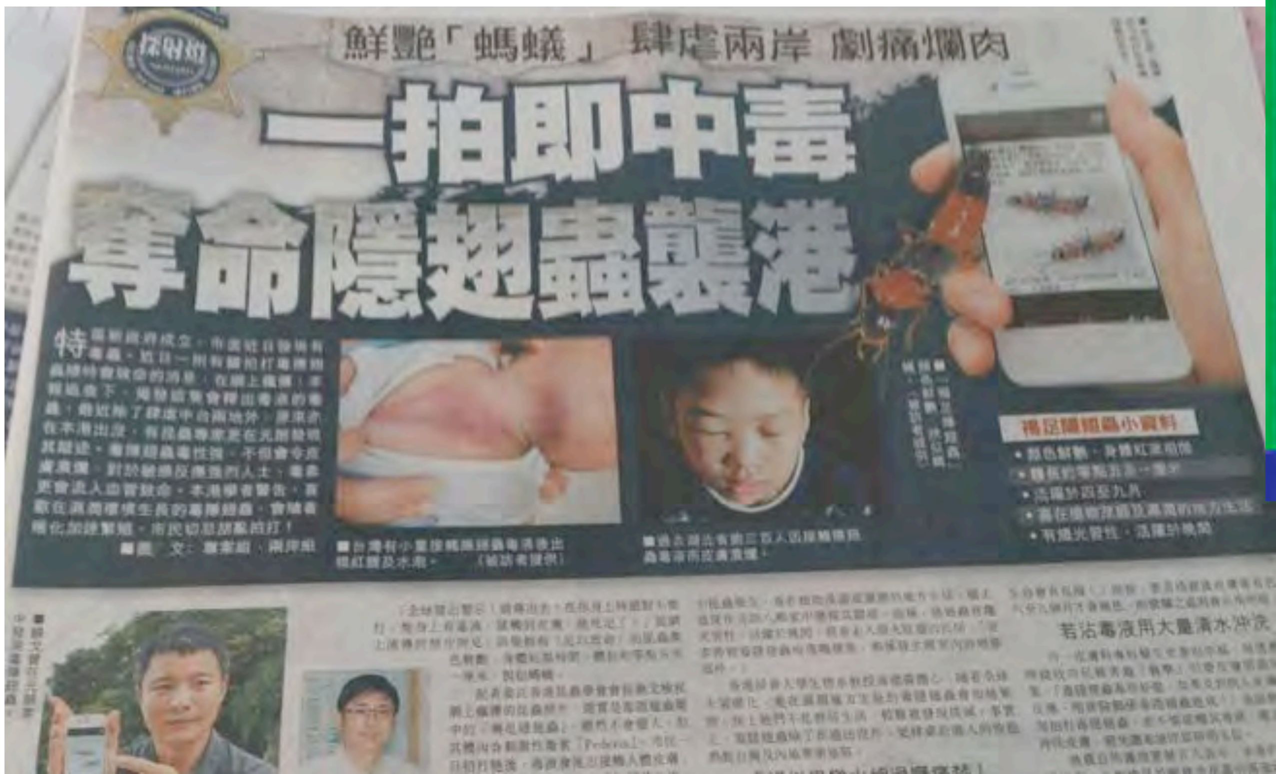
資料來源：台大昆蟲系教授楊平世、邱足滿醫師

展出時間：98.10.19 ~ 98.10.25

長腳蜘蛛撒尿－隱翅蟲

鞘翅目 Coleoptera

Rove beetle



鮮艷「螞蟻」 肆虐兩岸 劇痛爛肉

一拍即中毒 奪命隱翅蟲襲港