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Contents	Page
Falls in Elderly - a "Clinical Syndrome" and a Public Health Issue .....	13
Oral Health Survey of Hong Kong Population .....	18
News in Brief .....	23
Number of Notifications of Infectious Diseases .....	24
AIDS/HIV Surveillance .....	24
Contact Numbers for Prompt Notification .....	24

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## FALLS IN ELDERLY - A "CLINICAL SYNDROME" AND A PUBLIC HEALTH ISSUE

Dr K S Ho<sup>1</sup> Dr W M Chan<sup>2</sup>

### *Fall as a Public Health Issue*

Falls are not uncommon events for elders. In the Elderly Health Services (EHS), Department of Health (DH), all enrolled elders are routinely asked for a history of falls within the last six months. Among a cohort of 12 920 clients followed up in 2000 and 2001, about 16% reported at least one fall during the previous six months. Among them, 32% had fallen more than once.<sup>1</sup> In a local study of 997 men and 1 035 women aged 70 and above, 18% reported a history of fall during the past 12 months.<sup>2</sup> Among these, about one-third resulted in soft tissue injuries while about 4% of the men and 8% of the women sustained fractures.

Fracture of femur is a major reason for being in hospital in Hong Kong. In 2001, it was the fourth major cause for bed occupancy in general wards in the Hospital Authority, totalling some 150 000 bed days, after stroke, chronic obstructive airway disease and pneumonia. It affected 4 750 individuals, with 92% being elders over the age of 65.

Complications of fracture of femur are well known and can include death, immobility, pneumonia and deterioration of pre-existing co-morbid conditions.

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A local study revealed that fracture of femur is a major predictive factor for mobility decline and subsequent institutionalization.<sup>3</sup>

Apart from physical problems as a result of injuries, falls can have other undesirable effects. Even without serious injury, up to 50% of elders may experience difficulty in getting up after falling.<sup>4</sup> Such inability to get up after falling could pose hazards such as dehydration, pressure sore, pneumonia and rhabdomyolysis. Falls significantly affect the confidence of the elders especially those with repeated falls. Some 40% of those who sustained a fall could have subsequent self-imposed restriction in their daily activity and recreational activities leading to social isolation. It also increases dependency and lowers the quality of life.

### ***Risk Factors for Fall***

Fall is not a new problem. However, it is only within the last decade that fall itself is being viewed as a “geriatric syndrome” with more attention being paid on “situation” factors, so that the focus of attention is broadened from the conventional emphasis on prevention of osteoporosis to fall itself. Studies on falls have attempted to classify risk factors for fall which could be intrinsic or extrinsic.

Intrinsic factors include age-related decline in physiological functions such as muscle weakness, poor balance, gait problem, dizziness and impaired vision, and the presence of disease conditions such as arthritis, depression, cognitive disorder, stroke, epilepsy, diabetes mellitus, peripheral neuropathy, hypertension and heart diseases. Urinary incontinence, especially urge incontinence, which is common among

elders, also increases their risk of falling as they have to rush to the toilet.

Extrinsic factors refer to environmental hazards and activity-related factors like participation in sports. Examples of adverse environmental factors are poor lighting, slippery or irregular floor surfaces and too much clutter leading to trip over objects. In general, frail elders are more likely to fall in home environment when engaged in routine daily activities, while the well elders are more likely to fall outdoors, e.g. during activities that challenge the balancing ability.

In most cases, there would be complex interaction among the intrinsic and extrinsic factors. For example, elders have increased difficulty in depth perception and have need for greater contrast for detection of objects in the environment. Therefore, stairs are particularly hazardous especially if lighting is poor. Elders with urinary incontinence are at increased risk of fall especially if they are on diuretics, and the risk is even higher if the toilet floor is slippery.

In the study on falls among community dwelling ambulatory elders in Hong Kong, half of the falls occurred outdoors and “slipped, tripped /kicked over things” was the major reason for fall.<sup>2</sup> Among falls occurring at home, 30% were related to slippery shoes. Other important risk factors include dizziness, slow gait velocity, history of stroke, infrequent exercise, and the use of skin preparations, probably leading to weakened grip due to the slipperiness. In another study among patients with fracture of femur, 77% of those who fell were walking on ground level, 20% were falling from stairs or height, and only 3% were running or walking on slope.<sup>5</sup>

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In the study among EHS clients, the most important risk factors for fall include: female gender, history of repeated falls, musculoskeletal problems, urinary incontinence, depressive mood and poor financial condition.<sup>1</sup>

### ***Fall Assessment***

As most falls are a consequence of the interplay between intrinsic and extrinsic factors, a thorough assessment of an elder presenting with fall includes exploring for the circumstances of fall, the medical, cognitive and functional status, and identification of the underlying risk factors for intervention. As many elders may not volunteer the history of fall, primary care providers should actively ask elderly patients periodically for such history for identification of risk and timely intervention. The elders should also be checked for difficulties with balance or gait through simple “get-up and go” test, which involves observing the elder how to get on and off a chair and walk.<sup>6</sup>

### ***Fall Prevention and Management***

Reports on study on falls have demonstrated that falls are preventable and the approach must not be just “be more careful”. Irrespective of history of fall in the elderly, modifiable risk factors should be identified and addressed. This could be incorporated as part of the “physical check up” that is to be performed for the elder on a regular basis. This includes aspects such as visual impairment and hearing impairment which can be corrected, and postural hypotension, cardiac arrhythmias and unstable diabetes with hypoglycaemic attacks which can be treated.

Elders with balance problems should be persuaded to use reliable walking aids

instead of umbrellas for support. Moreover, all walking aids like canes and wheelchairs need to be properly maintained and used or they may actually become sources of risk. Likewise, the use of restraints for frail or demented elders to help prevent falls in institutions, has been reported to lead to serious injuries.<sup>7</sup>

Interventions for other modifiable risk factors include reducing medications, increasing awareness for environmental hazards, and prescribing exercise to improve muscle strength and balance. Although screening of high-risk elders for osteoporosis can help predict the risk of fractures, it is not recommended as the best preventive approach, in view of the treatment costs involved and related issues, as compared with the screening for risks of fall.<sup>8</sup> In any event, the correction of modifiable risk factors like smoking, heavy alcohol consumption, low calcium intake and lack of weight-bearing exercise should receive greater attention than drug treatment for osteoporosis.

For those elders who are prone to repeated falls, in addition to the above measures, specific protective devices like hip protectors or hip pads can be considered to reduce the impact of fall. As timely assistance is important for elders with difficulty in getting up after fall, other assistive devices such as alarms for those elders living alone should form part of the multifactorial intervention strategy.

### ***Reducing Medications***

Drugs for treatment of common chronic diseases increase the risk of fall: diuretics can cause electrolyte imbalance, antihypertensives cause postural hypotension, psychotropics reduce mental

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alertness, and hypoglycaemic drugs can cause dizziness. Studies have shown that the use of four or more drugs increased the risk of recurrent fall.<sup>9</sup> It is therefore important for doctors to carefully balance the risk and benefit before prescribing drugs to any elderly patient. In Hong Kong, where doctor-shopping behaviour prevails, it is not uncommon for elders to be taking similar, or even the same drugs from different doctors, which greatly increases the risk of adverse reactions and falls. Detailed questioning into the drug history and patient education are paramount to help reduce medication-related falls, among other iatrogenic problems.

### *Environmental Improvement*

Environmental hazards in the home such as slippery floor and clutter can be reduced through greater awareness and attention to safety. This includes the use of appropriate footwear and proper lighting especially in the toilet. Home assessment by professionals and appropriate home modifications proved to be effective in preventing further falls.

Designers of public buildings should bear in mind the needs of elders and watch out for hazards from loose carpets, poor colour contrast or difficult stair turns. Although handrails may have been installed at high risk areas such as stairs, steps and toilets, the site and height of the handrail as well as signages need to be appropriately planned in order to achieve the desired effects.

### *Exercise*

Exercise has been widely studied and advocated as a preventive measure for fall and fractures. Weight-bearing exercise

helps retard the progress of osteoporosis and can be in the form of daily activity like walking and climbing stairs. Tai Chi (太極) improves balance and has been shown to be the most protective structured exercise to prevent falls.<sup>10</sup> Individually tailored exercise for those with history of fall helps reduce the incidence of future falls, and hence injuries due to falls. Such exercise would need to address the area of deficiency, e.g. gait and lateral sway and could include other elements like upper extremity strengthening as a coping strategy in case of fall. To be effective, all such exercise needs to be sustained.

Currently, many types of structured exercise are being advocated for regular practice by elders to achieve beneficial effects. The EHS has developed the “Nine Steps Exercise” in which balance, strength, co-ordination and flexibility are emphasized. It also includes advice for elders with specific musculoskeletal problems. To cater for the more frail elders, another set of “Simple Exercise” has also been developed. Both are available for sale to the public in the form of video tapes or VCDs. Details of health education resources can be found on the EHS website at <http://www.elderly.gov.hk>.

### *Conclusion*

As a public health problem, fall tends to receive inadequate attention as it is often under-reported and also because the traditional view of injuries as (unpreventable) “accidents” has resulted in historical neglect.<sup>11</sup> As a clinical syndrome, fall is a difficult problem to tackle because of its multifactorial nature. Nonetheless, increased awareness, proactive identification of risk factors and a comprehensive review of the elder’s

circumstances would help the clinician formulate individualized plan for each elderly patient so as to minimize the threat of fall and improve the quality of life.

The local population will be ageing rapidly within the next two decades to reach the ratio of one elder to every four persons in Hong Kong by 2031. We must all join in the efforts in promoting healthy lifestyle practices which must cover the entire life course so as to help reduce the risk factors for, and the future disease burden due to fractures, osteoporosis, and fall.

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<b><i>Four A's to Reduce Falls</i></b>	
<b>Ask</b>	<ul style="list-style-type: none"> <li>• History of fall and syncope; circumstances of fall</li> </ul>
<b>Assess</b>	<ul style="list-style-type: none"> <li>• Vision</li> <li>• Cognition</li> <li>• Postural hypotension</li> <li>• Balance and gait</li> <li>• Depression</li> </ul>
<b>Advise</b>	<ul style="list-style-type: none"> <li>• Exercise to improve strength and balance</li> <li>• Calcium-rich diet</li> <li>• Reduction of environmental hazards</li> <li>• Appropriate walking aids and hip protectors</li> </ul>
<b>Address</b>	<ul style="list-style-type: none"> <li>• Use of medications</li> <li>• Arthritis or foot problems</li> <li>• Anaemia, hypokalaemia, hyponatraemia and cardiac problems</li> </ul>

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# ORAL HEALTH SURVEY OF HONG KONG POPULATION

Dr Elizabeth L Kwan<sup>1</sup> Dr Frankie So<sup>2</sup>

## ***Introduction***

The Department of Health conducted a territory-wide oral health survey in 2001. The objective of the survey was to ascertain the oral health status and oral health related behaviour of the community. The survey focused on the two most common, yet much overlooked dental diseases, i.e. tooth decay (*dental caries*) and gum disease (*periodontal disease*), affecting the people of Hong Kong, and oral health related behaviour. The complete report is available at [http://www.info.gov.hk/tooth\\_club/survey\\_eng.htm](http://www.info.gov.hk/tooth_club/survey_eng.htm). This article highlights the main findings.

## ***Survey Method***

The survey followed the criteria and recommendations of the World Health Organization<sup>1</sup> of using index age groups to represent Hong Kong population. The following index age groups were surveyed: (a) 5-year olds - the practical age at which to evaluate the status of the primary dentition; (b) 12-year olds - the age at which the change from primary dentition to permanent dentition is completed, when all permanent teeth, except third molars (wisdom teeth), will have erupted, and the age group in most countries at which a reliable sample may be obtained through the school system; (c) 35 to 44-year olds - the standard monitoring group for health conditions of adults, where the full effect of tooth decay, severe gum

conditions and the general effects of care provided can be assessed; and (d) 65 to 74-year olds - an age group which has become more important with the increasing life-span. For the last group, we studied both the active (non-institutionalized) older persons aged 65 to 74 (NOP) and the housebound (institutionalized) older persons aged 65 or above (IOP).

The sampling frames for the respective age groups were the kindergartens and child care centres list for the 5-year olds, the local secondary schools list for the 12-year olds, the residential care homes lists for the IOP, and the Thematic Household Survey samples for the 35 to 44-year old adults and the NOP. Subjects were selected by scientific sampling schemes from the respective sampling frames, and 5 870 persons were studied. Data were collected through clinical examination and specially designed questionnaires.

In the clinical examination, the extent and severity of tooth decay were measured using the DMFT index, which is the internationally adopted index in the measurement of tooth decay in a population. The visible state of a decayed tooth can be: decayed and left untreated (DT), missing (i.e. extracted due to previous decay) (MT), or filled (FT). The sum of DT, MT and FT in an individual is the DMFT value, representing the total number of permanent teeth with decay experience. Small letters (dt, mt, ft and

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dmft) are used to denote decay experience in the primary teeth.

The main concern on gum condition was the presence of gum pocket. Gum pocket is an irreversible stage of gum disease, with the formation of a pocket-like structure as a result of the destruction of the periodontal (tooth supporting) tissues.

### ***Survey Findings***

The main findings on the oral health status of the five age groups are summarized in Table 1.

#### *Tooth Decay*

Half of the 5-year olds had history of tooth decay (i.e. dmft >0). The mean dmft value was 2.3 and most of the teeth with history of decay were untreated (mean dt value = 2.1). In the 12-year olds, 37.8% had history of decay in their permanent teeth (i.e. DMFT > 0). The mean DMFT value was 0.8, and most of the teeth with history of decay had been treated. A great majority of adults and older persons had DMFT >0: 97.5% of the 35 to 44-year olds, 99.4% of the NOP and 99.8% of the IOP; and the mean DMFT values were 7.4, 17.6 and 24.5 respectively. Untreated decayed teeth were found in about one-third of the 35 to 44-year olds and in about half of the NOP and IOP. None of the 35 to 44-year olds was edentulous (had total tooth loss). Almost all the IOP and NOP had some tooth loss, with about half of the NOP and less than a quarter of the IOP had 20 or more teeth.

#### *Gum Condition*

Gum pocket was found in 46.0% of 35 to 44-year olds and 55.3% of the NOP.

Among the 54.0% of adults and 44.7% of the NOP with no gum pocket found, 49.9% and 43.0% respectively had calculus deposits. Destructive gum disease existed among about half of the adult and older persons population, and majority of those without destructive gum disease had the risk of such development. The risk of developing gum disease appeared as early as 12-year old, as 59.5% of students at this age had calculus deposits.

#### *Oral Health Related Behaviour*

Daily toothbrushing was generally a common habit but daily flossing was not common at all (23.9% for 12-year olds, 10.7% for 35 to 44-year olds, 1.6% for the NOP, and 0.0% for the IOP).

Snacking habit was common especially among the 5 and 12-year olds. Smoking habit was reported by 17.0% of 35 to 44-year olds, 21.1% of the NOP and 9.6% of the IOP. Snacking and frequent intake of sugar-containing food or drinks are risk factors to dental caries, and smoking habit is a risk factor to periodontal disease and oral cancer.

The habit of seeking regular dental checkup was also not common (10.4% for 5-year olds, 20.9% for 12-year olds, 26.3% for adults, 9.1% for the NOP, and 2.8% for the IOP). Moreover, people also tended to ignore or manage any perceived oral health problems by themselves.

There were also inadequacies in oral health knowledge and common misconceptions prevailed. People in general were able to point out “*too much candies and sweet food*” as related to tooth decay and “*proper cleaning of teeth*” as the main preventive method for tooth decay and gum disease.

**Table 1 Oral Health Status of the Hong Kong Population by Age Group Based on Common Oral Health Indicators**

<b>Oral Health Indicator</b>		<b>5-year Old Children</b>	<b>12-year Old Students</b>	<b>35 to 44-year Old Adults</b>	<b>65 to 74-year Old Non-institutionalized Older Persons (NOP)</b>	<b>Institutionalized Older Persons Aged 65+ (IOP)</b>
<b>Tooth Decay</b>	Mean number of teeth with history of decay (dmft/DMFT)	2.3	0.8	7.4	17.6	24.5
	% of people with history of decay	51.0	37.8	97.5	99.4	99.8
	Mean number of teeth with untreated decay (dt/DT)	2.1	0.1	0.7	1.3	2.6
	% of people with untreated decay	49.4	6.9	32.0	52.9	55.2
<b>Tooth Loss</b>	% of people with total tooth loss (edentulous)	NA	NA	0.0	8.6	27.2
	% of people with ≥ 20 teeth	NA	NA	99.2	49.7	24.1
<b>Gum Condition</b>	% of people with calculus	NA	59.5	49.9	43.0	49.8
	% of people with gum pockets	NA	NA	46.0	55.3	49.9

Note : NA - Not Applicable

However, very few could point out “*frequent intake of food or drinks*” as relevant to tooth decay and “*dentalplaque / bacteria*” as the causative agent of tooth decay and gum disease. To 41.2% of adults, 62.7% of the NOP and 70.0% of the IOP, tooth loss was considered as a part of ageing.

### **Discussion**

From a global perspective, the oral health of the Hong Kong population was found to be in the same ranking if not better than most developed countries. The tooth decay

level of the Hong Kong population as compared to some developed or neighbouring countries is shown in Table 2. With a global mean DMFT of 1.7, Hong Kong’s 12-year olds ranked as among the world’s lowest at 0.8.<sup>2</sup> The DMFT and gum condition of Hong Kong’s 35 to 44-year old adult population had the same ranking if not better than the counterparts from most developed countries.<sup>2</sup> In fact, of the countries with geographical proximity and similar economic development, only Hong Kong’s 35 to 44-year old adults boasted a 0.0% in terms of total tooth loss.

**Table 2                      Tooth Decay Level of the Hong Kong Population by Age Group as Compared to Selected Economies<sup>2</sup>**

<b>Economy</b>	<b>Mean dmft Value</b>	<b>Mean DMFT Value</b>		
	<b>5-year Old Children</b>	<b>12-year Old Students</b>	<b>35 to 44-year Old Adults</b>	<b>65 to 74-year Old Older Persons</b>
<b>Hong Kong</b>	2.3	0.8	7.4	17.6
<b>Singapore</b>	NA	1.0	9.8	17 - 18
<b>Australia</b>	1.4	0.8	17.3	21.0
<b>UK</b>	1.5	0.9	16.6	23.5
<b>USA</b>	1.8	1.4	13.3	NA

Note : NA - Not Available

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However, both tooth decay and gum disease are still imminent threats in Hong Kong, as evidenced by the following:

- ⊗ tooth decay and gum disease had continued to increase with age.
- ⊗ risk in the development of gum disease was already noticeable at age 12.
- ⊗ presence of calculus and gum pockets were commonly found in adults and older persons.

The survey findings from both the oral health indicators and the oral health related behaviour perspectives highlighted the fact that appropriate life-style practices as recommended by the dental profession world-wide have to be reinforced and conveyed to the public at large, i.e.

- Perform proper toothbrushing with an effective method preferably twice everyday with fluoride-containing toothpaste.
- Complete teeth cleaning everyday by appropriate interdental cleaning such as flossing.
- Make use of oral health care services by seeking regular dental checkup.
- Adopt a good dietary habit by reducing snacking frequency, especially sugar-containing snacks.
- Refrain from smoking, and quit smoking if one is already a smoker.

This survey showed that the perception “*brush better and consume less candies are effective in preventing dental diseases*” was rather common. This is a clear indication that the knowledge on prevention of dental diseases was inadequate. Teeth cleaning is incomplete

and ineffective without proper interdental cleaning (e.g. flossing). Tooth decay is related to any sugar-containing food or drinks, not only candies and sweets. It is the frequency of intake of sugar-containing food / drinks that is more important, and not the total quantity consumed. Hence the more appropriate messages should be “*perform interdental cleaning in addition to toothbrushing*”, and “*reduce the frequency of snacking outside normal meals*”.

The belief “*tooth loss is a part of ageing*” may be the biggest challenge to attaining desirable behavioural change. To motivate the population to act early to prevent tooth loss, the population has to be convinced first that the possibility of tooth loss at old age can be minimized.

The oral health related life-style is in fact also conducive to general health. The impact to the general public will no doubt be enhanced if the core messages can be relayed by medical practitioners in their clinical practices. Some people with perceived oral health problems seek care from doctors as their first action. It is advisable for doctors to recommend such clients to seek dental consultation as early as possible, in addition to the provision of sound medical advice.

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### ***Two Cases of Influenza A (H5N1) Infection in 2003***

During February 2003, the Department of Health (DH) confirmed two cases of influenza A (H5N1) in Hong Kong affecting a 33-year-old man and his 9-year-old son. Both of them had good past health. The son travelled to Fujian, China with his mother and two sisters (aged eight and ten) during 25 January and 9 February 2003. The man departed from Hong Kong on 30 January to join them and came back on 9 February 2003.

The man and his son had onset of influenza-like illness (ILI) on 7 and 9 February 2003 respectively. They were admitted into hospital on 11 and 12 February respectively. The man's condition deteriorated and he passed away on 17 February. The son recovered completely and was discharged from hospital. The nasopharyngeal aspirates of both cases were positive for influenza A (H5N1) virus by culture on 19 and 20 February. Genetic sequencing revealed that the two viruses isolated were essentially similar, no human influenza genes segments were present and none of the internal genes of these viruses were similar to those of the strains found in 1997.

The 8-year-old daughter in the family developed an acute febrile illness with cough on 28 January 2003. She died on 4 February 2003 and the cause of death could not be confirmed. Further laboratory tests are being conducted to determine whether the man's wife and 10-year-old daughter have also been exposed to the H5N1 virus.

The avian influenza virus A (H5N1) was first known to infect humans in 1997 when 18 cases (including six deaths) were identified in Hong Kong. In-depth studies showed that the main mode of transmission of influenza A (H5N1) was from bird to man, and man-to-man transmission was very ineffective. After that outbreak, there has not been any isolate of influenza A (H5) virus in human specimens prior to the recent two cases. The initial clinical presentation of influenza A (H5N1) infection was similar to that of other influenza viruses, typically with high fever, malaise, myalgia, sore throat and cough. However, the disease may be complicated by viral pneumonia, respiratory distress syndrome, multi-organ failure and even death.

The DH operates a sensitive influenza surveillance system comprising hospitals, laboratories and clinics in the public and private sectors. Sentinel surveillance on ILI is carried out by some 50 private doctors and 64 general outpatient clinics. Laboratory surveillance did not show any unusual increase in influenza activity over the months of January and February nor detected any other H5 virus. The DH is also stepping up surveillance for severe pneumonia cases admitted to public and private hospitals.

For more update information on ILI in Hong Kong, please visit the homepage of the DH at <http://www.info.gov.hk/dh/>.

### ***Surveillance of Viral Hepatitis in Hong Kong - 2001 Update Report***

The Department of Health has published the "Surveillance of Viral Hepatitis in Hong Kong - 2001 Update Report". The Report can be downloaded from <http://www.hepatitis.gov.hk>.

## Number of Notifications of Infectious Diseases\*

Disease	Dec 2002	Jan 2003	2001	2002
1) Cholera	-	-	38	4
2) Plague	-	-	-	-
3) Yellow Fever	-	-	-	-
4) Acute Poliomyelitis	-	-	-	-
5) Amoebic Dysentery	-	-	6	4
6) Bacillary Dysentery	15	9	390	285
7) Chickenpox	1577	1384	16472	16795
8) Dengue Fever	1	5	17	44
9) Diphtheria	-	-	-	-
10) Food Poisoning : <i>Outbreak</i>	35	42	671	671
<i>Persons Affected</i>	124	146	2707	2647
11) Legionnaires' Disease	1	-	3	4
12) Leprosy	-	2	10	6
13) Malaria	8	2	47	54
14) Measles	-	4	179	61
15) Meningococcal Infections	-	1	10	6
16) Mumps	8	9	67	90
17) Paratyphoid Fever	1	3	21	21
18) Rabies : <i>Human / Animal</i>	-/-	-/-	1/-	-/-
19) Relapsing Fever	-	-	-	-
20) Rubella	-	4	51	36
21) Scarlet Fever	11	15	147	121
22) Tetanus	-	-	4	2
23) Tuberculosis	613	453	7262	6665
24) Typhoid Fever	9	10	67	67
25) Typhus Fever	-	-	7	13
26) Viral Hepatitis :	11	21	677	431
- A	4	3	494	269
- B	5	13	134	118
- C	-	-	-	4
- E	1	1	26	28
- Unclassified	1	4	23	12
27) Whooping Cough	2	-	15	23

\* The first two columns are numbers of two latest months whilst the other two columns are totals of previous two years.

### AIDS/HIV Surveillance

Cumulative Number of Cases	as at 30.9.2002	as at 31.12.2002
AIDS	603	613
HIV	1941	2015

### Contact Numbers for Prompt Notification

Infectious Diseases other than Tuberculosis	Fax No. (Form DH1(s))	Tel.No.	Tuberculosis	Fax No. (Form DH1 A(s))
Hong Kong Regional Office	2572 7582	2961 8791	Tuberculosis and Chest Service	2834 6627
Kowloon Regional Office	2375 8451	2199 9149		
New Territories East Regional Office	2699 7691	2158 5107		
New Territories West Regional Office	2439 9622	2615 8571		
Duty Medical Control Officer, Department of Health (for urgent notification during weekends, public holidays or after office hours.)	-	71 16 3300 call 91 79		