
State of Hong Kong Children

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1. Childhood Injury in Hong Kong

CB CHOW

2. Behavioural Problems in Infancy, Childhood and Adolescents

SF HUNG

3. Health Services for Mother and Children in Hong Kong

S LEUNG

4. Oral Rehydration Practices: Hong Kong

EAS NELSON

Childhood Injury in Hong Kong

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1. Overview

During the last two decades, injury and poisoning have surpassed diseases as the leading cause of death and disability in children and youth in Hong Kong.¹ It is also the leading cause of childhood disability. Since 1961, the rate of injury deaths among children under 15 years of age declined by 75% whereas death rates for other diseases declined by 95%. (Table 1)

Injuries are not random and uncontrollable events of fate. They can be studied in an organized fashion using the three methods of scientific investigation: epidemiology, biomechanics and behavioural science. By understanding injuries, interventions can be developed and implemented to prevent or limit the extent of a given injury. In fact, more than 90% of these injuries are predictable and preventable.

2. Injury Epidemiology

Mortality statistics on injuries are accurate and readily available in Hong Kong. Each mortality arising from injuries is certified by a coroner and duly recorded. During the period 1990 to 1996, about 50-80 children under 15 years of age died as a result of injuries each year. In 1996, injury and poisoning causes about 2% of the deaths among 0-1 years, 25% of the deaths among children aged 1-4 years and 30% of all deaths of children aged 4 to 14 years of age.¹ Road traffic accidents, drowning and submersion and accidental falls accounted for 30%, 20% and 20% respectively of all deaths from unintentional injury in children aged under 15 years of age. Accidental poisoning is a uncommon cause of death. (Table 2) The average annual mortality rates for the period 1990 to 1995 were 4.8 per 100,000 for boys and 3.0 per 100,000 for girls. The highest risk group was in children under 5 (5.4 per 100,000) and lowest in children aged 5-9 (3.3 per 100,000) and rise to 3.9 per 100,000 in the 10-14 years of age. Boys predominated with male to female death ratio of 3:2.² However, mortality figures are just "tip of the iceberg" and will not give a complete picture of the injury problem.

Injury morbidity data are much more difficult to obtain

Table 1

Age-specific mortality rate (ranking according to 1991 data)

	Number of deaths						Percentage of deaths						Rate per 100,000 total population					
	1961	1981	1991	1994	1995	1996	1961	1981	1991	1994	1995	1996	1961	1981	1991	1994	1995	1996
0 years																		
All causes	4098	846	456	346	302	257	100	100	100	100%	100%	100%	3841	994.3	665	465.5	408.7	382.2
1. Congenital anomalies	157	221	154	119	111	72	3.8	26.1	33.8	34%	37%	28%	147.1	259.7	224.6	160.2	150.2	107.1
2. Hypoxia, birth asphyxia and other respiratory conditions	142	276	89	35	28	41	3.4	32.6	19.5	10%	9%	16%	133.1	324.4	129.8	47.1	37.9	61.0
3. Immaturity	1142	82	67	80	59	52	27.9	9.7	14.7	23%	20%	20%	1070	96.4	97.7	107.7	79.8	77.4
4. Haemolytic disease, perinatal jaundice & other causes	204	83	60	46	39	25	5	9.8	13.2	13%	13%	10%	191.2	97.5	87.5	61.9	52.8	37.2
5. Pneumonia all forms	1166	67	18	12	13	9	28.5	7.9	3.9	3%	4%	4%	1093	78.7	26.2	16.2	17.6	13.4
All other causes	1287	117	68	54	52	58	31.4	13.8	14.9	16%	17%	23%	1206	137.5	99.2	72.7	70.4	86.3
1 - 4 years																		
All causes	1805	177	99	88	76	69	100	100	100	100%	100%	100%	427.5	53.7	29.4	25.5	29	22.3
1. Injury and poisoning	107	55	23	17	13	17	5.9	31.1	26.1	19%	17%	25%	25.3	16.7	7.7	5.7	4.3	5.5
2. Congenital anomalies	14	22	13	11	15	9	0.8	12.4	14.8	13%	20%	13%	3.3	6.7	4.3	3.7	4.9	2.9
3. Malignant neoplasms	18	16	10	9	8	5	1.0	9.0	11.4	10%	11%	7%	4.3	4.9	3.3	3.4	3.0	1.6
4. Diseases of nervous system	18	13	10	8	8	4	1.0	7.3	11.4	9%	11%	6%	4.3	3.9	3.3	2.7	2.6	1.3
5. Pneumonia, all form	603	31	9	9	12	9	33.4	17.5	10.2	10%	16%	13%	142	8.9	3.0	3.0	4.0	2.9
All other causes	1045	40	23	22	32	21	57.9	22.6	26.1	25%	42%	30%	247.5	12.1	7.7	7.4	8.9	6.8
5 - 14 years																		
All causes	587	230	149	112	94	121	100	100	100	100%	100%	100%	77.7	26.7	17.8	13.7	11.5	14.8
1. Injury and poisoning	177	95	55	39	23	36	30.2	41.3	36.9	35%	24%	30%	23.4	11	6.6	4.8	2.8	4.4
2. Malignant neoplasms	40	39	35	27	25	35	6.8	17	23.5	24%	27%	29%	5.3	4.5	4.2	3.4	3.7	4.9
3. Disease of nervous system	29	16	11	7	7	9	5.0	7.0	7.4	6%	7%	7%	3.8	1.9	1.3	0.9	0.9	1.1
4. Pneumonia, 1.0 all forms	83	14	7	3	3	8	14.1	6.1	4.7		3%	3%	7%	11	1.6	0.8		0.4
5. Heart diseases	33	12	6	5	4		5.6	5.2	4.0	4%	4%		4.4	1.4	0.7	0.6	0.5	
All other causes	225	54	35	29	29	25	38.3	23.5	23.5	28%	31%	21%	29.8	6.3	4.2	3.5	3.5	3.1

Source: Annual Statistical Reports, Hong Kong Hospital Authority

Table 2

Number of external causes of injury and poisoning deaths in children aged 0-14 years of age 1979 to 1996

	1996	1995	1994	1993	1992	1991	1990	1989	1988	1987	1986	1985	1984	1983	1982	1981	1980	1979
All accidents, poisoning and violence	56	44	61	57	80	89	79	78	92	87	102	118	141	139	145	185	220	217
Transport accidents	10	11	11	10	25	22	15	28	21	25	18	24	39	34	31	44	51	51
Accidental poisonings	1	1	3	1	0	1	0	0	1	1	0	1	1	2	1	5	2	4
Other accidents, misadventures & adverse effect	16	16	30	29	36	43	45	44	51	52	71	68	83	90	95	110	152	150
Suicide and self inflicted injury	11	5	8	7	9	4	2	2	2	0	5	0	5	3	1	6	2	1
Homicide and injury purposely inflicted by other persons	16	9	6	4	6	12	15	4	16	5	7	15	12	8	16	14	12	9
Other violence	2	2	3	6	4	6	2	0	2	4	1	7	5	1	2	6	1	2

Sources: Departmental Reports (1976-97), Medical & Health Department, Department of Health, Hong Kong

and accurate morbidity figure on injury and poisoning is not available in Hong Kong. Although all public and private hospital discharges are assigned ICD codes, external causes (E-code) are frequently not coded and breakdown by age is not available in hospital statistics. A study in one regional hospital reported that trauma accounted for 65% of surgical and orthopaedic admissions of children under 12 years of age and 15% required operation under general anaesthesia.³ With computerization of hospital records, these data may be available in the near future.

There is some indication that most childhood injuries were treated at Accident & Emergency Departments (A&E) rather than by private practitioners.⁴ Thus A&E attendance might be an indicator on the prevalence of childhood injuries. Statistics from Hospital Authority indicated each year about 60,000 children under 15 years of age attended A&E for trauma.⁵ Injuries account for about 30% of paediatric attendance at Accident and Emergency Department of a regional hospital and 20% of all hospitalisation among children.⁶ It has been estimated that about 2.9% of children will be admitted to hospital for injuries at least once before their fourth birthday.⁷ A recent survey conducted in Prince of Wales Hospital indicated that about 55/1000 children per year attended A&E for injury.⁸

However, territory-wide data on the nature of injuries in children per se is not available. Data from a prospective study at the Accident and Emergency Department in a regional hospital indicated that accidental falls accounted for 44% (falls from beds or furniture 10.6%), traffic accidents 7.3%, sports injury 6.0%, foreign body to eyes or other orifices 5.6%, bicycle injuries 3.8%, burns and scalds 1.1%, poisoning 0.55 and other injuries 31.7%. A recent study showed similar results. (Table 3, 4)^{6,8} More than half of injuries in children occurred at home (52%) followed by road (19%), school (12%) and playground (9%).⁶ Majority of the injuries were not serious and 99% had abbreviated injury scale of 2 or less.⁸ About a third needed hospitalisation.

2.1 General

Hong Kong, being a small, highly urbanized and very densely populated place, the pattern of injuries shows some special characteristics. The very over-crowded environment leads to preponderance of high-rise buildings, the use of double-decked beds, camp beds, folding chairs and folding tables by many families to save space. Hong Kong is having the highest death rate from accidental falls but lowest death rate from accidental poisoning compared with other developed countries.⁸ From 1985 to 1989, 8 children suffocated to death because of being trapped in folding tables. Many children are left unattended at home due to the increasing number of working parents. In a

recent survey (1997) 58.7% and 34.2% of domestic households had left one and two children aged 12 and below unattended at home in the past 7 days for a period of 2-4 hours.⁹ Coroners statistics indicated that from 1989-1994 a total of 113 unattended children died in Hong Kong most of them in horrible circumstance. Poisoning is relatively uncommon in Hong Kong. Some types of injuries show clear seasonal patterns - fractures are more common during summer holidays and burns at mid-autumn festival.^{10,11} There are several hospital based studies on different aspect of childhood injuries e.g. head, eye, sport injuries and foreign body ingestion etc. but most are descriptive in nature. Pre-event or event risk factors were not analysed.¹⁰⁻¹⁷

2.2 Traffic accidents

Traffic accident is the major cause of death in children. The number of cars is increasing rapidly in the past decade while casualty rate from traffic accidents declined by 13%

in children. On average about 6-7 children are reported injured on the road every day. Boys aged 10-14 years are at the highest risk of traffic injuries. The peak period for traffic accidents in children occur around 1 pm and 4-6 pm coinciding with school dispersal hour. Over half (56%) of childhood traffic injuries occur in pedestrians. Pedestrian casualties were in general associated with higher percentage of fatalities and serious injuries (31%) compared to vehicle occupant injuries (16%). Bicycle riding is more a recreational activities than mean of transport in Hong Kong. However, children are more prone to bicycle injuries. It is a common cause of fracture and about 36% is serious.

2.3 Drowning and submersion

Swimming is Hong Kong's most popular pastime during summer. Each year some 13 million people visited the beaches and another 6 million enjoyed the numerous public swimming pools managed by the two municipal councils.

Table 3

Substanced exposures in Hong Kong children

	1963-1969(Chung et al) (1)		1989-1991 (Chow et al) (2)		1988-1992 (ChanYK et at) (3)	
Medications	133	40.1%	54	61.4%		37.2%
salicylate	51		sedatives/hypnotics	10	Paracetamol	7.1%
phenothiazine	18		antihistamine	8	Vitamins & minerals	4.7%
belladonna	10		analgesics	7	Hypnotics/anticonvulsants	4.3%
barbiturate	8		herbs	6	Topical preparations	3.9%
contraceptive	4		multivitamins	5	Antihistamine & cough	3.5%
					Others	13.7%
Household products	163	49.0%	33	37.5%		35.9%
kerosene	74		cleaning agents	14	Insecticides/rodenticides	8.2%
alkali	27		cosmetics	7	Cleaning agents	6.6%
toilet articles	15		kerosene	3	Desiccants	4.3%
					Mercury in thermometer	3.1%
					Others	13.7%
Insecticide	19		0			2.8%
					Vegetable borne	1.6%
					Agriculture source	1.2%
Lead arsenic	8		0			
Others	9		0			
Unknown	0		3	3.1%		
					Chemicals	
					Food-borne	1.6%
					Non-food-borne	10.2%
					Herbal/traditional	
					Medicine	4.3%
					Others	3.9%

(1) Accidental poisoning of children in Hong Kong, Chung CM & Angeline Chan. Far East Med J 1971;7:221-4

(2) Poisoning and drug overdose in Hong Kong Children. Chow CB, Cheung MW, Lul KC, Leung NK. Hong Kong Journal of Paediatrics, 1993; 10: 113-7

(3) Childhood poisoning In Hong Kong: experience of the Drug and Poison Information Bureau from 1988 to 1992. Chan TYK, Critchley JAJ, Chan JC et al. J Paediatr Child Health 1994; 30:681-2

Table 4a

The number, crude and standardized suicide rates of people aged 24 or below by gender

Year	NUMBER				Percent	Method of suicide			
	Male	Female	Person	All ages		Poisoning	Hanging	Jumping	others
1981	46	27	73	494	15%	12%	29%	58%	1%
1982	26	25	51	407	13%	8%	33%	55%	4%
1983	28	28	56	460	12%	14%	25%	43%	18%
1984	35	20	55	553	10%	7%	22%	56%	15%
1985	45	38	83	684	12%	11%	8%	63%	18%
1988	41	40	81	641	13%	14%	9%	69%	9%
1987	34	18	52	604	9%	12%	17%	63%	8%
1988	34	32	66	569	12%	9%	21%	62%	8%
1989	30	27	57	609	9%	0%	23%	72%	5%
1990	34	28	62	679	9%	13%	13%	73%	2%
1991	34	26	60	689	9%	2%	15%	73%	10%
1992	52	27	79	727	11%	11%	4%	78%	6%
1993	39	29	68	638	11%	3%	4%	85%	7%
1994	41	38	79	741	11%	6%	8%	78%	8%
1995	56	26	82	714	11%	0%	9%	83%	9%
1996	42	31	73	640	11%	10%	10%	74%	7%
Total	617	460	1077	9849	11%				

RATE (crude and standardized)

Year	Male	Female	M/F ratio	Total	All ages
1981	3.6	2.3	1.6	3.0	9.5 (9.5)
1982	2.1	2.1	1.0	2.1	7.7 (7.6)
1983	2.2	2.4	0.9	2.3	8.6 (8.3)
1984	2.9	1.7	1.7	2.3	10.2 (9.7)
1985	3.7	3.4	1.1	3.6	12.5 (11.8)
1986	3.5	3.6	1.0	3.5	11.6 (10.7)
1987	2.9	1.7	1.7	2.3	10.8 (9.7)
1988	3.0	3.0	1.0	3.0	10.1 (9.1)
1989	2.7	2.6	1.0	2.6	10.7 (9.5)
1990	3.1	2.7	1.1	2.9	11.9 (10.4)
1991	3.2	2.6	1.2	2.9	12.0 (10.4)
1992	4.9	2.7	1.8	3.8	12.5 (10.8)
1993	3.7	2.9	1.3	3.3	10.8 (9.3)
1994	3.9	3.8	1.0	3.8	12.2 (10.4)
1995	5.3	2.6	2.0	4.0	11.5 (9.8)
1996	4.1	3.2	1.3	3.6	10.3 (8.7)
Total	3.6	2.9	1.2	3.2	10.9 (0.7)

Table 4b

Suicide rates* among young people, 1988-1994

Age	1988	1989	1990	1991	1992	1993	1994
10-14	0.46	0.46	0.47	0.94	2.11	1.64	1.89
15-19	4.12	3.19	4.11	3.72	7.16	4.40	7.93
20-24	8.63	8.40	9.43	9.04	9.06	7.77	10.09
25-29	9.23	7.94	12.06	13.97	13.36	10.47	12.02

* per 100,000 population within the age group

Source : The Samaritan Befrienders Hong Kong (1993,1994,1995)

Drowning is the second largest cause of deaths in children dying from injuries. Boys aged 5-9 years of age are most vulnerable. Data on the places and circumstances in which drowning occurred is lacking. Recently children had been drowned in public swimming pools. Poor design or inadequate warning had been incriminated as contributing factors. More information and study on this is required.

2.4 Falls

Falls are third commonest cause of childhood injury deaths. It is the commonest cause of injury deaths in children under 5 years of age. Most of deaths are from falls from high buildings (60%). Falls accounted for about half of injuries seen at Accident and Emergency Department. Most of them occurred at home in children under 5 years of age. Falling off from beds especially from double-decked ones is a common cause of head injury.¹⁴

Many of the falls involved infants sleeping in beds without guards.

2.5 Burn and scald

Though not a common cause of death, burn and scald in children often involve face and extremities resulting in permanent disability or disfigurement. Each year about two thousands children are seen at A&E for burn or scald. About 90% are due to scald by hot liquid and majority occurs in children under 4 years of age.¹¹ Every year during the mid-autumn festival, many children are burnt on face or extremities from playing with boiling wax.

2.6 Fire

Hong Kong, being very densely populated with high-rise buildings, fire is a major risk to lives. The number of fire calls is increasing over the years, while the number of people injured and died remained rather steady. Each year there are about 50-60 major fires at No. 3 alarm and over. The major causes of fires were careless handling or disposal of smoking materials, overturned cooking stoves and electrical faults. In 1994, 183 cases of fire were due to children playing with matches. Of the deaths from fire, most were children under 5 years of age occurring in private dwellings.

2.7 Accidental poisoning

Deaths due to poisoning are uncommon in Hong Kong probably due to crowded environment and children could be observed more closely. The pattern of poisoning is changing - in the 1960s, salicylate, kerosene and pesticides were major agents involved. Now, drugs taken by parents or relatives are the main causative agents (table 3).^{12,13}

2.8 Playgrounds

Figures on playground injuries are not available from

the Urban and Regional Councils. In a one-year surveillance performed at the Accident and Emergency Department revealed that about 8.7% of childhood injuries occurred at playground, mostly due to falls from height or on level grounds.

2.9 Sports injury

Data on sports injuries are lacking. A recent study at the Sports Injury Clinic in Prince of Wales Hospital and the Sports Medicine Department in the Hong Kong Sports Institute indicated that gymnastic and track events were the two sports with the highest number of injuries. Lack of warm up exercise and protective aids were common factors associated with injuries.¹⁸ In A&E setting, it accounted for 7.4% of childhood injuries and ball games and skating were the major causes.⁶

Population-based injury statistics are ideal but are often difficult to obtain. To obviate very high cost in getting an accurate estimate of prevalence of childhood injuries and yet be able to identify most, if not all of risk factors a "event enumerative approach" using social research principles towards a numerical convergence to complete exhaustiveness can be adopted. In an ongoing large-scale hospital-based research, a list of event descriptors was derived through a "saturation" process from more than 400 actual injury cases reported to an accident and emergency department in Hong Kong. The events were grouped basing on age, sex and the six causative factors - (1) physical hazards (2) behaviour hazards of carer (3) behaviour hazards of peer (4) child in dangerous state (5) own dangerous act of the child (6) mere accident. A list of 150 event descriptors had been developed for use in prevention programme.¹⁹

2.10 Suicide

Suicide deaths had shown little significant change over the past decade across the various age groups (table 4)²⁰ In a survey of 563 school students aged 11 to 20 years, 36.4% and 7.7% indicated had ever thought about committing suicide and ever attempted to commit it respectively.²¹

2.11 Drug abuse

Exact estimate on the prevalence of drug abuse is lacking. From the available data, the number of young drug abusers in Hong Kong probably is small. In the study by Education Department, of the 452,267 primary student studied, 1,054 (0.23%) were estimated to be in the at-risk group, 153 (0.03%) in the occasional drug abuser group and 76 (0.02%) in the habitual drug abuser group. Whereas of the 439,414 secondary school students, 9,194 (2.1%) were estimated to be in the at risk group, 2,197 (0.46%) in the occasional drug abuser group, and 588 (0.12%) in

the habitual drug abuser group.²¹ However, according to the 38th report of the Central Registry of Drug Abuse of the Narcotic Division, an upward trend was noticed in the number of newly reported drug abusers since 1989 in the youth population (table 5).²² Heroin continued to be the most popular drug of abuse, followed by Cannabis and cough medicine. Friends and drug-pushers were the main source of drugs.²²

3 Injury preventive measures undertaken in Hong Kong

The identification of causal factors and high risk groups are important for designing appropriate preventive interventions - to focus on important/serious injuries problems and high risk groups. Such measures should aim at preventing the injury from occurring (pre-event) in the first place, diminishing the damage caused by the injury event once it occurs (event) or limiting the long-term sequel of the injury (post-event).

Good epidemiological data on childhood injuries are not available in Hong Kong. Preventive measures undertaken are fragmented and reactive and most have not been evaluated.

3.1 Child product-related injuries

The Toys and Children Products Safety Bill has been passed in 1993. The bill does introduce an element of protection, that toys and children products must conform to certain standards or face penalty. But penalty will only be forthcoming when some injuries have occurred to a child and the product happen to be found to be unsafe by the Custom and Excise Department. Many of the beds for young children, baby walkers, pushchairs and prams available and on sale in Hong Kong have been found by the Consumer Council to be not up to safety standard!

There is no figure on child product-related injuries in Hong Kong.

3.2 Children left unattended at home

Many children are left unattended at home due to the increasing number of working parents.

On October 1991, the Government published a public Consultation Paper on Measures to Prevent Children from being left unattended at home. After a 3-months consultation the government concluded that childcare facilities, supportive services, public education needed to be increased and mutual help group encouraged. Nevertheless, it was considered neither desirable nor feasible to introduce any legislation to protect unattended children.

Since then, plans were introduced to increase the number of childcare centres. At present a total of 135 occasional child care units, each with three places, were provided to take care of children for brief periods during the day, allowing their families to attend to urgent business. A recent General Household Survey indicated that the utilisation rate of these centres is still low and children are often left unattended at home for prolonged period.⁹

3.3 Road safety

Every year there is a 5% increase in registered vehicles; the competition for road space became increasingly acute. The number of traffic accidents remained quite constant over the past few years despite increasing vehicle population. Traffic accident is the major cause of traumatic deaths in children. About half occurred with pedestrians.

Accident records are regularly collected and analysed by police for black spot and road safety strategy formulation since 1991. Speeding and jumping red lights continued to be major problems. More advanced speed detection equipment and red light cameras are also introduced recently. Red light camera scheme - introduced

Table 5

Newly reported drug abusers by sex and age 1987-1996

Sex/Age	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996*
Male										
<16	101	135	127	124	182	242	324	512	298	169
16-20	434	444	546	530	603	913	1472	1655	1252	622
Female										
<16	54	49	78	78	89	103	168	254	166	89
16-20	134	142	125	152	161	179	290	429	392	174
Both										
<16	155	184	205	202	271	345	492	766	464	258
16-20	568	586	671	682	764	1092	1762	2084	1644	796

* For 1996 January to June only

Source : Narcotic Division 1996

in 1994 showed encouraging results in reducing the number of accidents and red light violations at signal-controlled junction. The project will be expanded to cover more locations in 1995. Road Safety Council is an advisory body to co-ordinate all road safety matters in the territory. Legislation has been introduced to empower police officers to require a suspected drunk driver to be tested on the road-side starting December 15 1995. At present it is mandatory to wear seatbelt at the front seats. Legislation has been introduced for the mandatory fitting and wearing of rear seatbelt in private cars in June 1996. However, the legislation and enforcement on the infant seats is unsatisfactory.

The recent few reports of injuries/death to children sustained during travelling by school transportation has aroused considerable public concern. A Consultation Paper on Safety Provision of School Transport was released in September 1995. After the consultation, the Transport and Education Departments recommended that:

1. With effect from February 1997, all school buses with over 16 seats are required to have compulsory provision of escorts to take care of children.
2. With effect from August 1996, bus operators are required to provide details of their clients' information to Transport Department for application of an annual permission of bus service.
3. With effect from August 1996, all school bus must display a sign on the back of the vehicle to warn motorist that they are carrying children.
4. With effect from February 1997, all school buses and nanny vans are required to install alarm system at the front sliding doors and emergency doors.
5. With effect from February 1997, a standard bright colour will be assigned for all nanny vans.
6. With effect from February 1998, provision of sound system on buses for communication between driver and passengers (nanny and pupils) is mandatory.
7. All schools are encouraged to set up School Bus Service Committee for the monitoring of school bus services.

The Student Road Safety Patrols was founded in 1983. At the end of 1995, there are 241 teams under Road Safety Association of Hong Kong in operation for over 200 schools. The patrols give an alarming record of having no accidents during the 32 years' operation. 558 schools have

organised school staff road safety patrols.

3.4 Recreation and sports

3.4.1 Beaches and swimming pools

Swimming is Hong Kong's most popular pastime during summer. At present there are 42 gazette bathing beaches, 28 public swimming pool complexes. Regular lifeguard services are available in all public beaches and swimming pools. Regular campaigns are conducted to put forward water safety message to public.

3.4.2 Playgrounds

Most playgrounds in Hong Kong are of good standards and well maintained. The Committee on Safety in Outdoor Pursuits of the Council for Recreation and Sports keeps under constant review matters relating to safety in sports and recreational activities. Each year two major publicity campaigns, one on land sports and another on water sports are being organised. Greater expertise and care in the layout design of playgrounds would also be helpful in injury prevention.

3.4.3 Cycling

Injuries due to bicycling are not very common, as bicycling is mainly a recreation activity in Hong Kong. The present legislation is that children under the age of 11 are not allowed to ride on the road unless accompanied by an adult. However, this is rarely enforced. Wearing of bicycle helmets is uncommon. Several campaigns have been launched to alert public awareness but without much success. Also, conflict and danger exist wherever pedestrian traffic and cycling are mixed, as in some older housing estates and on offshore islands and the New Territories.

3.4.4 Safety education

The various departments of the Government provide a wide range of publicity and education programmes on home safety. However, there is no territory-wide surveillance system nor preventive programme for childhood injuries. Injury prevention is still not one of the health agenda in Hong Kong.

4 Conclusion and recommendations

In the 1998 Public Health Report on Unintentional Injuries in Children, the Department of Health of Hong Kong has made 27 recommendations and to achieve the following targets by the year 2005²:-

- § Deaths from unintentional injuries to no more than 3 per 100,000 children (1990-95 baseline 4.1 per 100,000 children).
- § Annual childhood deaths caused by motor vehicle crashes to no more than 10 on average (1990-95 baseline 15 per year).
- § Annual reported childhood road casualties to no more than 2000 (1990-95 baseline 2700 per year).
- § Annual death rate from falls to no more than 0.6 per 100,000 children (90-95 baseline 0.8 per 100,000 children).

Injury is a major health problem in Hong Kong children. Information on the extent of the problem and their contributing factors are scarce and scattered. Preventive measures are reactive in nature, piecemeal and usually not subjected to evaluation. It is thus important that: -

1. Childhood injury prevention must be accorded high priority and child safety is given prime consideration in all policies involving children.
2. A "Childhood Injury Information System" should be set up to (1) collect, collate and generate timely and accurate information concerning the incidence, circumstances and contributing factors, severity and long term outcome of childhood injuries; (2) interpret and analyze these information to identify problems, hazards, risk groups and injury-producing behaviours; and (3) disseminate the information to relevant authorities and agencies for appropriate action.
3. Injury prevention should be recognized as major public health issue and adequate resources be allocated for research and control programmes.
4. Effective injury control requires multi-disciplinary approach and community participation. It should be evidence-based.²⁴ A "Child Safety Council" should be established to steer and coordinate all activities related to childhood injury prevention.
5. Health care professionals should contribute towards injury control and support safe environment scheme by providing expertise,

information and communicating the problem, public education and training of professionals.

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Behavioural Problems in Infancy, Childhood and Adolescents

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Behavioural problems are quite common in the young population. Indeed, it is one of the commonest presentation to the practicing Paediatricians. Parents are often worried about different problem behaviours as their child grows. In the early years, they worried about feeding, sleeping, sphincter control, then about aggression, overactivity, fears, peer relationship, balance between dependence and independence, and in Hong Kong, a particular concern on their school performance once they started school. Most of these problems are transient and self remitting and are amenable to common sense advice. More recently, the phenomenon of behavioural inhibition in infants are noted to predict emotional problems later. However, it is those that are severe, persistent, with multiple problems, cause distress in the child and/or their parents, and impairing their development which merit special attention. These are referred to as behaviour disorders. They tend not to be transient nor self-remitting and predict problems in the future. These disorders are often associated with a number of risk and protective factors such as prematurity, temperament, infant-caregiver attachments, psychopathology in parents, parents' marital quality and interactions, etc. which could either aggravate or ameliorate the problem.

There have been relatively few epidemiological studies of behaviour disorders in children in Hong Kong. To this author's knowledge, there has not been a good epidemiological study on infants in Hong Kong. For Preschoolers, Luk et. al.² reported a two stage epidemiological study on a representative sample of 855 Hong Kong Chinese children aged 36-48 months, using parent and teacher questionnaire and interview as stage 1 screening and a semistructured clinical interview of teachers, parents and child as stage 2 assessment. They found that the prevalence of behaviour disorders was mild

18.0%, moderate 4.5% and severe 0.7%. The result is fairly similar to those reported by Richman et al (1975) in U.K. Considering the likely differences in child rearing practices in the two culture, the similarity is interesting. Leung et al.¹ in another two stage epidemiological study of hyperactivity in Hong Kong, screened a representative sample of 3069 primary one boys followed by semistructured clinical interview. They found that the prevalence of hyperkinetic disorder as defined by ICD-10 is around 0.78%. The prevalence is lower than the finding in United Kingdom (1.7%). It is noteworthy that the two sites share the same methodology which makes the comparison particularly meaningful. They discussed that both biological and cultural explanation apply. The Chinese may be constitutionally less vulnerable to hyperactivity. Culturally, the Chinese child rearing practice, school environment, and social expectation all encourage discipline, conformity and inhibition of impulses. They also noticed that using Questionnaire alone, our teacher's rating yielded a higher rate of hyperactivity. The phenomenon probably reflected a lower tolerance for disruptive behaviours amongst teachers. They also concluded that a disorder of hyperactivity do exist in the Chinese, displaying the same kinds of symptomatology and external correlates as in the West. Wong & Lau³ reported a two stage study of 718 Chinese primary two and four pupils in a school and found the total prevalence of definite psychiatric case to be 16.3%. They also reported that boys have more problems than girls. Leung et al (personal communication), in a recent study conducted to renorm the Child Behaviour Checklist(CBCL), Teacher Report Form(TRF), and Youth Self-report Form(YSR) in a representative sample of primary and secondary students had found that the local norm is very similar to their American counterparts. Any differences found are small. The School Health Services of Hong Kong (personal communication) had used the same instrument in screening in the student population and had similar finding. Judging from this finding, we may again infer that the youth in Hong Kong are more similar than different in their problem behaviours when compared with other countries. However, this study uses self-administered questionnaire only and may be less accurate than those quoted above.

More recently, there is a worrying trend of a possible increase of suicide amongst the young. Ho et al⁴ reported that the overall pattern and associated risk factors (except methods of suicide) is quite similar to the West. The suicide rate was lower in Hong Kong and so are the associated risk factors such as drug abuse. In a recent study (Hung et al.⁵) of 10 secondary schools, the estimated lifetime prevalence of suicidal idea, communication, plan, and act are 23%, 9%, 7% and 4.5% respectively. They are comparable to those reported in the West. It appears that