

# Unintentional residential child injury surveillance in Hong Kong

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**Objectives:** To provide an overall pattern of morbidity in unintentional residential childhood injuries (URCI) in Hong Kong.

**Methodology:** A cross-sectional telephone survey of caregivers of children aged under 16-years and adolescents suffering from URCI and admitted to three selected local Accident and Emergency Departments.

**Results:** Falls, cuts and scalds were the most common external causes of URCI observed, while boys predominated in the sample population. Most of the observed URCI were of moderate to mild severity. Children of new immigrant mothers were more likely to receive first aid immediately after the incidents. Parents were aware of potentially injurious behaviour and intervened on occasion, but most resorted to verbal warnings only.

**Conclusions:** Prevalence of falls among observed URCI offers evidence in support of the hypothesis that the high population density in Hong Kong plays an integral role in understanding mechanisms of morbidity. Parents show concern about URCI but often lack substantial action that modifies injury risk. Considering the local injury differentials, an active prevention effort such as behavioural intervention and education for parents may be useful.

**Key words:** accidents; childhood injuries; emergency service; epidemiology; Hong Kong; wounds and injuries.

Injury is a major health problem in Hong Kong. Between 1999 and 2000, injury and poisoning was the leading cause of death in Hong Kong among the population aged from 1 to 44 years. Among children and adolescents, injury and poisoning led to 6.8 deaths per 100 000 in the 1–4-year-old population and 3.7 deaths per 100 000 in the 5–14-year-old population. It was the fifth leading cause of death across all ages with 28.6 deaths per 100 000.<sup>1</sup> In mainland China, injury is a major cause of mortality<sup>2</sup> and morbidity.<sup>3,4</sup>

Residential childhood injury is the primary interest in this study for two reasons: (i) the relationship of the home setting with child developmental benchmarks, in particular for children aged 5 years or under, and (ii) the lack of research literature in this area. The home is the primary area of activities for young children apart from the preschool setting.<sup>5</sup> They are therefore more likely to suffer from injury in this setting. Indeed, a previous local study on childhood injuries suggested that about 50% injuries took place at home.<sup>6</sup> Despite numerous studies on the aetiologies of different injuries based on diagnostic groups<sup>7–15</sup> or mechanisms,<sup>16–21</sup> little is known about residential childhood injuries in Hong Kong.

The aim of this study was to compile a local profile of unintentional childhood residential injuries (URCI) from three local hospitals that would, at least, approximate a representation of the phenomenon in Hong Kong. It was anticipated that such a profile would: (i) provide an overall pattern of morbidity in URCI and their correlates such as socioeconomic background, demographic information, antecedent context, and (ii) facilitate injury prevention initiatives and prevention efforts.

## METHOD

### Definition of unintentional residential childhood injury in this study

Unintentional residential childhood injury is defined for this study as any episode of unintentional childhood injury that took place in the home environment, which is defined as the 'person's usual residence' and its corresponding 'parts of building' submodule under the 'place of occurrence' section of the International Classification for External Causes of Injuries (ICECI).<sup>22</sup>

### Participants

Considering the viability of random sampling in all local hospitals, participating hospitals were selected from a correspondence analysis on the proportion of 0–14 year old children and adolescents, population density and household income. Such stratification was intended to yield an optimal diversity of socioeconomic characteristics among residents of Hong Kong who subsequently participated in the present study. The Prince of Wales Hospital (PWH), Shatin, Pamela Youde Nethersole Eastern Hospital (PYN), Chai Wan, and the United Christian Hospital (UCH), Kwun Tong, were included in this study.

From each Accident and Emergency Department (AED) of the participating hospitals, children aged under 16 years, admitted for an episode of URCI, were included in the study. Ethical approvals from all participating institutions were acquired prior

to the commencement of study. Between 1 January and 31 December 2000, 18 919 paediatric trauma intakes, admitted to the AED and fulfilling the inclusion criteria, were retrieved from routine database systems. Primarily, cases classified as 'domestic' or 'unclassified' traumas were subjected to further screening for URCI. Three experienced research nurses participating in this study reviewed all under 16-year-old childhood trauma records from the local emergency registry to ensure that all URCI attended to in the participating hospitals were captured. Domestic trauma, in this context, refers to injuries that took place at home and school, or those of a nature other than industrial, sports, traffic and assault. With respect to the definition of URCI, 5078 URCI cases were filtered and identified from the data pool specified above.

### Procedure and material

Six telephone nurse interviewers, recruited from the participating hospitals, interviewed the identified URCI cases. All respondents registered their telephone numbers in the Accident and Emergency Information System database. If necessary, the interviewers made two redials, one in each of the hour zones (00:00–07:59; 08:00–15:59; 16:00–23:59 hours) different from the initial attempt. Primary caregivers of the injured child, usually the mother, were interviewed. In the absence of the primary caregiver, other caregivers such as the father, grandparents or domestic helper were interviewed instead. Verbal consents were obtained prior to commencement for all injury interviews conducted.

The protocol for the URCI interview covered the following information areas: (i) demographics of the injured child; (ii) first aid provision; (iii) description of injury episode in the form of codes according to the ICECI<sup>22</sup> and short narrative<sup>23</sup> history of injury within 6 months prior to the documented episode; (iv) parental intervention towards potentially injurious behaviour; (v) presence or absence of human interaction at the injury onset; (vi) proximity and visibility of caregiver from the injured child; (vii) medical outcome of the injury in terms of diagnosis (nature of injury<sup>24</sup>); (viii) severity<sup>25</sup>; and (viii) discharge information from AED records, as well as demographic information on co-residents of the injured child (e.g. parents, siblings, grandparents, domestic helpers).

A 5% random sample of interviewed families received a follow up home visit to validate injury coding on ICECI activity, mechanism, contributing mechanism, object, contributing object and location.

## RESULTS

### Identified and interviewed UCRI among accident and emergency department admissions

Of 18 919 records of children presenting to the AED of participating hospitals for injury or poisoning, 27.5% (5194) were identified as sustaining an URCI episode. From the pool of identified URCI, a total of 5078 cases (97.8% of all 5194 identified cases) were included and analysed in the present study. Incomplete records and refusals by respondents accounted for 18 (0.4%) and 98 (1.9%) cases, respectively (Table 1).

### Demographics of injured children

Gender ratio (M : F) in the observed URCI profile was 1.46:1. Age distribution was positively skewed, with more than 80% of children observed aged 7 years or younger (Fig. 1). The majority of injured children were locally born (92%) and resided in public housing.

### Injury classification

#### *Location of injury and activity engaged prior to injury*

Activity types were not significantly different across genders (chi-squared = 9.08, d.f. = 4,  $P = 0.06$ ), although more males were engaged in leisure activity or doing nothing particular, while more females were undertaking vital activity or were being taken care of.

#### *Mechanism of injury*

'Contact with blunt force', 'penetrating force', and 'thermal and radiant mechanisms' were the top three leading mechanisms of injury. Stratified by age groups (infants: 1, 2–4, 5–7, 8–11, 12–15-year-old), 'contact with a blunt force' was the leading mechanism across all age groups. 'Thermal and radiant mechanisms', and 'penetrating force' were the second leading mechanisms for children aged 4 years or younger and 5–15 years, respectively.

Of blunt force injuries (ICECI mechanism A1–A9), a fall from a height less than 1 metre (1321, 31.9%), slipped and fell (710, 17.2%), and tripping (195, 4.7%) were the prevalent

**Table 1** Unintentional residential childhood injuries identification

		<i>n</i>	%
URCI?	URCI interviewed, incomplete, or rejected	5194	27.5
	Others, AED intakes	13 725	72.6
	Total	18 919	100
Injuries versus other admissions	Others or unknown	3634	19.2
	Injuries (interviewed, incomplete, refusal, non-home)	15 107	79.9
	Incomplete records	178	0.9
	Total	18 919	100

AED, Accident and Emergency Department; URCI, Unintentional residential childhood injuries.

contributing mechanisms in conjunction with contact with blunt force. Older children, between 8 and 15 years were more prone to penetrating force injuries (218, 52.3%). The age difference between this type of injury and other mechanisms was statistically significant (Mann–Whitney  $U$ -statistic =  $-14.68$ ,  $d.f. = 1$ ,  $P < 0.001$ ). Contact with a hot liquid, steam or gas accounted for almost 90% of all injuries by thermal and radiant mechanisms (ICECI mechanism G1–G3.9). Two cases of threats to breathing (ICECI mechanism J1–J9) were recorded in this study: a 10-year-old girl who choked herself while undoing a knot on a scarf, and a 2-year-old girl who suffered asphyxiation from a piece of candy. Both cases were discharged home immediately after medical attention at the AED.

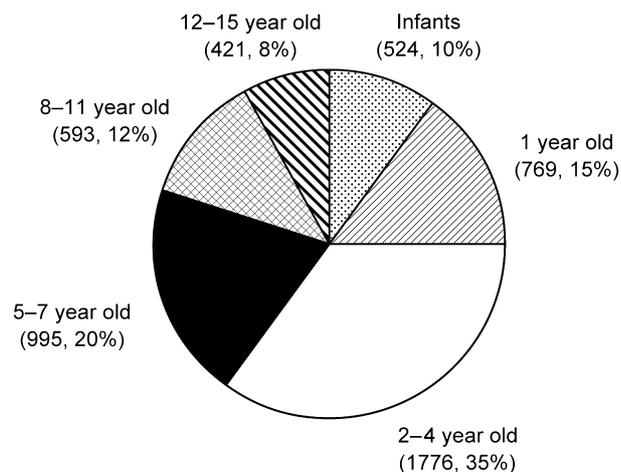
Of all observed poisonings by or exposure to chemicals or other substances (ICECI mechanism N1–N9), nearly half were induced by pharmaceutical substances with the rest by other domestic chemical substances such as insecticides. These injuries tended to be more severe, with 90.9% assigned a triage of three or higher for instant treatment at the accident and emergency facilities. All but one of the corrosion injuries involved irritation of the eyes (Table 2).

#### Injury diagnoses

Contusion (N920.0–924.9) (29.6%), open wound of the skull, neck and trunk (N870.0–879.9) (20.7%), superficial (N910.0–919.9) (12.9%), intracranial (N850.0–854.1) (6.2%), and burn/scald (N940.0–949.4) (5.7%) were the top five injuries diagnosed among the URCI recorded. They accounted for more than 75% of all injuries attended (Table 3).

#### Common mechanism–object combinations

Fall from bed (7.9%, 400), fall from sofa (3.5%, 179), fall from chair or stool (3.2%, 161), crushing by door (2.5%, 128), and slip and fell with no particular object involved (2.5%, 128) were the five leading common combinations of mechanism and objects. The top five combinations covered 19.6% (996) of injuries recorded while the top 48 combinations accounted for 49.9% (2536) of all injuries documented.



**Fig. 1** Age of children suffering unintentional residential childhood injuries.

## Medical attention received and care management

### First aid given and related information

Of all children included in this profile, 48% (2439) received first aid for the episode of injury that led to the emergency attendance. Adjusting for age and injury severity, denoted by Maximum Abbreviated Injury Scale scores with a logistic regression model, girls were slightly less likely to receive first aid in the observed sample (odds ratio (OR) = 0.86, 95% CI = 0.76, 0.96). Interestingly, children of new immigrant mothers who stayed in Hong Kong for less than 7 years were more likely to receive first aid (chi-square = 4.24,  $d.f. = 1$ ,  $P = 0.04$ ) but mothers' employment status (employed or home-maker), presence of domestic helper, or education attainment of mothers and fathers were not associated with provision of first aid treatment.

**Table 2** Injury descriptions by International Classification of External Causes of Injury

	<i>n</i>	%
<b>ICECI Activity</b>		
Leisure	2689	53.0
Nothing in particular	1055	20.8
Vital activity	832	16.4
Being taken care of	212	4.2
Other specified activity	180	3.5
Unpaid work	110	2.2
Total	5078	100
<b>ICECI Location of injury</b>		
Livingroom	2678	52.7
Bedroom	1569	30.9
Bathroom	359	7.1
Kitchen	232	4.6
Lift lobby	137	2.7
Other location	103	2.0
Total	5078	100
<b>ICECI Mechanism of injury (3-digit)</b>		
Contacting static object	3217	63.4
Cutting, tearing	307	6.1
Pinching, crushing between	288	5.7
Contact with hot liquid, steam, other gas	258	5.1
Contacting moving object	191	3.8
Struck by thrown or falling object	151	3.0
Foreign body entering into or through eye or natural orifice	99	2.0
Other mechanisms of injury	567	11.2
Total	5078	100
<b>ICECI Object involved in injury</b>		
Floor	1731	34.1
Door	425	8.4
Cabinet, rack, room divider, shelf	221	4.4
Table, desk, bench, etc.	216	4.3
Person	212	4.2
Building	182	3.6
Bed	159	3.1
Chair, stool	154	3.0
Hot food	102	2.0
Hot water, other	102	2.0
Other objects involved in injury	1574	31.0
Total	5078	100

ICECI, International Classification of External Causes of Injury.

### Priority for emergency treatment and hospitalization among UCRI

Matching the low severity of UCRI compared with other injuries, over 95% of observed UCRI were assigned 'urgent' or other lower priority by the triage systems in participating hospitals. Proportions of hospitalization between UCRI and other accident and emergency intakes, however, were similar (chi-square = 2.37, d.f. = 1,  $P = 0.12$ ; Table 4).

### Human factors related to unintentional childhood residential injuries

Approximately one-quarter (27.2%, 1382) of interviewed parents or caregivers reported attempts to intervene in the child's behaviour that led to the immediate injury documented. However, the vast majority of caregivers were limited to giving verbal warning with respect to the potentially injurious behaviour (94.7%, 1309) rather than engaging active intervention, such as, modification of care-giving behaviour (2%, 27) or the home environment (0.4%, 6). At the time of the injury episode

that led to the accident and emergency admission, the majority of injured children were out of reach (80.4%, 4085) or out of sight (62%, 3148) of their caregivers. Caregivers' proximity was significantly different across hospital profiles, with more parents from the PWH cases within reaching proximity (chi-squared = 144.32, d.f. = 2,  $P < 0.001$ ).

### DISCUSSION

One of the investigators in this study (CB) asserted in an earlier work<sup>6</sup> that 50% of childhood injuries took place at home. Results from the present study lend evidence to support such a claim, but to a more restricted population. From the tabulated accident and emergency (A&E) attendance records, the overall proportion of UCRI among all attendance was 27.4% (5189 of 18 919). However, in 50% (3138 of 6270) of all of 0–4-year-old children, A&E trauma attendances were caused by an UCRI episode.

Hospitalization rates were similar for UCRI and other intakes at local AED. Residential injuries, in spite of their mild injury severity when compared to other injury types, such as traffic-related or domestic violence, seem to constitute a comparable utilization of hospital resources for their injury types.

**Table 3** ICD-9-CM nature of Injury

ICD-9-CM 800.0–999.9 nature of injury (N-code)	<i>n</i>	%
Contusion (N920.0–924.9)	1504	29.6
Open wound of skull, neck & trunk (N870.0–879.9)	1049	20.7
Superficial (N910.0–919.9)	655	12.9
Intracranial (N850.0–854.1)	317	6.2
Burn/scald (N940.0–949.4)	287	5.7
Open wound of upper limb (N880.0–887.7)	241	4.8
Fracture of upper limb (N810.0–819.1)	194	3.8
Sprains (N840.0–848.9)	165	3.3
Foreign object entering through orifice (N930.0–939.9)	165	3.3
Dislocation (N830.0–839.9)	135	2.7
Other nature of injury	307	6.1
Incomplete records	59	1.2
Total	5078	100

### Injury mechanisms and objects involved

Apart from earlier works comparing morbidity differentials internationally,<sup>26</sup> data from this study were compared to morbidity statistics from a major city in mainland China.<sup>3</sup> A close parallel in mechanisms of injury was observed with the pattern of residential childhood injuries in mainland China. Drawing a subset of 3–6 children from the present study, all but one of the top five external causes (traffic related injuries) from our mainland counterpart match the top six external causes observed in Hong Kong. Notably, falls were about half of all UCRI observed in both studies (Table 5).

Injuries observed in this study were predominantly falls, accounting for 53% of all observed and interviewed UCRI. Among injuries caused by 'blunt force', falls were 93.5% (2645). Over two thirds of 'slip and fell' injuries observed took place in the livingroom. About 80% (196 of 242) of respondents reported that the injured child was not interacting with any

**Table 4** Hospitalization rates of unintentional residential childhood injuries identification and other injuries

Discharge destinations	Hospitalized <i>n</i> (%)	Discharged <i>n</i> (%)	Total
Interviewed UCRI (admission rate)	578 (11.4)	4500 (88.6)	5078
Others (admission rate)	1689 (12.2)	12152 (87.8)	13841

UCRI, unintentional residential childhood injuries.

**Table 5** Top five external causes of residential childhood injuries (ICD-9-CM E code) in China and Hong Kong

China <sup>3</sup>	%	Hong Kong	%
Fall	49.2	Falls (E880.0–888.9)	57.7
Burn/scald	18.6	Blunt force – (E916.0–918.9)	24.0
Blunt force	16.4	Scald (E924.0–924.9)	5.3
Intrusion into orifice (E914.0–915.9)	14.8	Cut/piercing (E920.0–920.9)	3.6
Traffic–vehicle	1.1	Intrusion into orifice (E914.0–915.9)	3.0

other person in the household. These results accentuate the problem of children using the livingroom as their major recreation space. Young children in Hong Kong spend most of their time at home.<sup>5</sup> Thus, the home develops into the primary location for their leisure and informal sport activities. The likelihood of suffering falls and other blunt force injuries at home increase as children bump and run around livingrooms. This is complicated by the limited household space in Hong Kong. Compared with other Asian countries, the average floor area per person in Hong Kong at 9 m<sup>2</sup> is lower than its more developed neighbouring urban centre such as Singapore (16.5 m<sup>2</sup>)<sup>27</sup> or Jakarta (15 m<sup>2</sup>).<sup>28</sup> However, the association between crowded housing space and prevalence of falls among URCI remains unascertained. Confirmation of this hypothesis requires further investigation of the association between average floor area and morbidity types.

The morbidity pattern observed in this study contradicts the traditional conception of high-risk areas of homes in Hong Kong. Rather than the kitchen, which is regarded as one of the more risk-prone areas of a household,<sup>29</sup> most of the observed injuries took place in either the livingroom or bedroom. Such an observation lends support to the hypothesis that children are more likely to be injured in an environment that they spend most of their time in.<sup>30</sup> Furthermore, reported locations of injuries revealed blurred boundaries between different home partitions in the observed injuries and suggested that the traditional concept of the location of home injury might not be applicable in Hong Kong, given its high-rise high-density living conditions. In terms of injury mechanism, the number of low falls, slip and fell, and tripping injuries actually exceeded those caused by falls from a high place (higher than 1 metre) or a burn from a fire.

Of 288 crushing between objects injuries observed, 208 (72.2%) involved wooden doors. Installation of sliding doors or other less impact fixtures in cramped quarters are safe but hardly feasible solutions to this problem. Warning children of an opening door by fastening a chime/bell onto the door could be an effective and sustainable alternative.

About one-third of the burns and scalds observed involved hot liquid food, such as a bowl of soup, instant noodles or congee (i.e. porridge-like rice soup). However, it would be unrealistic to ask parents to avoid them for they are a major source of diet in the Chinese culture and are common among local households. Nonetheless, it is possible to prevent these types of scald injuries by promoting safe handling of hot liquid foods.

#### *Nature of injury*

Most of the frequently observed diagnoses were injuries or suspected injuries of the head, accounting for about 50% of all reported injuries. In fact, this observed pattern resembles injury diagnosis of infants in UK.<sup>31</sup> The predominance of non-fracture head or related injuries in the present study could be explained by the weighty consequence of head injuries perceived by both parents and medical professionals. Compared with other types of injury, children sustaining unspecified intracranial injury without an open wound were associated with an increased likelihood of hospital admission (chi-square = 12.839, d.f. = 1,  $P < 0.001$ ).

#### *Human factors related to URCI*

Caregivers reported in this study were exceedingly concerned about preventing injury but exhibited a lack of substantial action towards children's potentially injurious behaviour. Providing caregivers with alternatives to verbal warnings, such as

resources for household and child-rearing practice modifications would be a priority and challenge for local injury prevention programs.

### **Contrasting patterns and preventive measures towards URCI in Hong Kong and Australia**

In Hong Kong and Australia, the majority of emergency presentations required no further medical attention.<sup>32,33</sup> In fact, the proportion of hospitalization is almost identical for Hong Kong and the figure obtained for a Victorian sample of children aged 5–14-years. Gender differences were consistent in both the Hong Kong and the Australian studies, with males dominating the injury profile.<sup>32,33</sup>

Hong Kong and Australia have very different approaches to the prevention of URCI and injury prevention in general. Considered as a national health priority,<sup>34</sup> injury prevention receives great attention and ample resources in Australia. This is substantiated with national efforts in documenting the epidemiology,<sup>35</sup> standardizing injury reporting systems,<sup>36</sup> and evaluating the impact of injury on the population.<sup>37</sup> Hong Kong, in comparison, is in the early stage of fostering injury research and prevention. Local government has exhibited reasonable efforts in terms of the annual compilation and reporting of injury mortality and a review of injury research and patterns in 1998.<sup>38</sup> However, injury has yet to be recognized as a health priority. Injury researchers and prevention practitioners have received little policy level support, such as mandatory reporting of injury diagnosis and external causes, centralized registry of injury patients admitted to emergency services or hospitalized, and substantial directives to order territory-wide surveillance of the patterns and impact of injuries. Geographically, Hong Kong and Australia are markedly different in terms of population density and living space per person. For instance, the population density of the Sydney ring municipalities is about 1.6 times that of Hong Kong.<sup>39,40</sup> The average floor area per person in Hong Kong, at 9.1 m<sup>2</sup>,<sup>41</sup> is marginal when compared to 223 m<sup>2</sup> per person across Australia.<sup>42</sup> With such geographical, organizational and political differences, Australia and Hong Kong are confronted with very different challenges, needs and priorities in the area of childhood injury prevention.

### **LIMITATIONS**

The present study included only three major local hospitals in Hong Kong. Results from this cluster sample, therefore, could not warrant an accurate projection. However, given a wide range of population density, household size and age distribution was ensured in the design stage, results from this study should be considered to provide a credible approximation of the local URCI profile.

The choice of an AED-based system over a population approach has been used in many developed countries for the purpose of reporting injuries.<sup>43–46</sup> Apart from the obvious limitations of this approach,<sup>44,46,47</sup> accumulating injury information from the present source remains one of the most efficient and common methods in collecting injury data.<sup>35,48,49</sup> Furthermore, the number of overlooked URCI attending alternative medical practices such as general physicians or Chinese bonesetters should be insignificant, given that: (i) accident and emergency services in Hong Kong are free of charge; (ii) less than 0.3% of general physicians' consultations among 0–9-year-old children were related to injury and poisoning;<sup>50</sup> and (iii) a follow up to the present study revealed that less than 4% of

children, attending emergency services for injury, solicit paid consultation with respect to the presented episode of injury.<sup>51</sup>

Given the focus on residential childhood injuries, emergency intakes other than those classified as domestic or unclassified were excluded from the data collection process.

Data collection was interrupted during the Chinese lunar new year period (4–8 February 2000; inclusively) with respect to traditional Chinese folklore that a call from the hospital during the lunar new year period represents misfortune.

## IMPLICATIONS OF FINDINGS

### Primary prevention

Results from this study offer several directions for the prevention of URCI:

- 1 Child-proofing the home environment requires initiation and maintenance by parents and other caregivers. Household chemical storage, audio alerts for door opening, and installation of a child-proof kitchen gate in households with infants and toddlers are some of the top priorities in prevention.
- 2 URCI in the kitchen and bathroom can be lethal, yet parents should also be aware that a substantial proportion of injury morbidity requiring medical attention takes place in communal areas of the household such as the livingroom and bedroom.
- 3 Given the crowded living environment and the prevalence of falls, behavioural modification, in the context of parental supervision, may be a more fruitful strategy in preventing URCI in Hong Kong. Major prevention priorities include: (i) cautions on rough play with peer children or adults; (ii) handling of hot food and soup; (iii) infant handling during sporadic parental supervision lapses; (iv) instruction and/or supervision upon operation of stationery and utensils with sharp edges; and (v) bed-sharing practices and position. These directions for prevention have been implemented in the planning and creation of injury prevention pamphlets prepared and disseminated by the local Department of Health.

### Secondary prevention

Introduction of impact absorption products or practice pertaining to URCI is a feasible complement to primary prevention efforts. Considering the prevalence of low falls and scalds observed in this study, soft surface installation (e.g. rubber carpet) for the child's play and the cooling of hot food or soup for children under age of 3 years are two of the most needed secondary prevention measures for URCI in Hong Kong. Given the passive nature and investment required, compared to other levels of prevention, secondary prevention efforts should be the most feasible and attainable with regard to URCI in Hong Kong. Secondary prevention targets identified in this study have been integrated and adopted in training material for an upcoming home visitation program that focuses on injury prevention for 0 to 3-year-old children in Hong Kong.

### Beyond URCI: extension of results to other types of childhood injuries

Injury profiling, derived from the present study, allows and facilitates various types of local epidemiological and public health investigations: cost of injury description on URCI,<sup>51</sup> case control study for injury risk factors validation, as well as outcome evaluation for injury prevention programs. The injury

reporting system established in this study is compatible with the ongoing effort in Hong Kong for a patient master index, a multi-institutional platform for longitudinal monitoring of all medically attended conditions, including injuries.

Data derived from the present study provided an evidence-based foundation for two local injury prevention programs: (i) a quasi-experimental study on a home visitation program for mothers of 0–3 year old children who attended medically for URCI; and (ii) a school-based prevention campaign featuring an injury prevention curriculum and hospital visits.<sup>52</sup> Both programs involved translating those injury patterns and priorities observed in the present study into either prevention initiatives or educational materials.

### Policy implications

In many developed nations, prevention of URCI is regarded as one of the national health priorities.<sup>34,53,54</sup> However, injury has yet to be recognized as a priority health issue in Hong Kong.<sup>1</sup>

The present study should be seen as a substantial effort in initiating further injury morbidity research in Hong Kong, as well as a starting point for local policy makers to recognize injury as a major health concern.

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