Legislation coverage for child injury prevention in China
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Objective To examine the extent to which effective interventions to prevent unintentional child injury are reflected in the laws and regulations of China.

Methods We focused on the six common causes of fatal child injuries – drowning, road traffic injury, falls, poisoning, burns and suffocation. We investigated 27 interventions recommended by the United Nations Children’s Fund, the World Health Organization or the European Child Safety Alliance. We searched China National Knowledge Infrastructure and Lawyee for Chinese legislations using keywords and synonyms for the 27 interventions. We reviewed the identified legislations for statements specifying the responsible implementation department.

Findings Seven national laws, nine regulations of the State Council and 46 departmental regulations were found to relate to at least one of the interventions. Although seven of the 27 internationally recommended interventions were covered by Chinese laws, 10 were not covered by any current Chinese law or regulation. None of the interventions against drowning and falls that we investigated was covered by national laws. The implementation responsibilities for effective interventions were either not specified or were assigned to multiple governmental departments in 11 or 20 legislative documents, respectively.

Conclusion In Chinese laws and regulations, interventions proven to prevent major causes of unintentional child injuries are underrepresented and the associated implementation responsibilities are often poorly defined. China should include all such interventions in laws and regulations, and assign implementation responsibility for each to a single department of the national government.

Introduction
Child injuries are a public health problem in China. In 2010 – according to Global Burden of Disease estimates – approximately 86,000 individuals aged 0–19 years suffered fatal injuries in China. In 2008, the World report on child injury prevention listed several interventions that had been found effective against unintentional child injuries – e.g. child restraints in vehicles, cycling helmets, pool fencing and flotation devices – and encouraged low- and middle-income countries to adopt such interventions. However, many of these interventions have yet to be widely implemented in China – mainly because they are not mandated in national laws or regulations or because responsibility for their implementation has not been clearly assigned to one or more specific governmental departments.

Legal requirements and prohibitions can drive behavioural and environmental changes that can reduce the risk of injury. There is substantial evidence – albeit mainly from high-income countries – to prove that legislative strategies can be effective in reducing child injuries caused by road traffic, drowning, burns, falls, poisoning or suffocation. Between 1994 and 2003, for example, the rate of head injuries among people younger than 18 years decreased by 54% in those Canadian provinces that had legislation mandating helmet use for young cyclists but only by 33% in other Canadian provinces. In New York City, United States of America (USA), legislation requiring landlords to install window guards in all rented properties led to a 96% decrease in the number of children who were seen at hospitals following unintentional falls from windows.

Surprisingly, many interventions known to reduce child injury have not been widely covered by legislation. When investigating legislation covering 10 interventions against child injury in 29 member countries of the Organisation for Economic Co-operation and Development, it was found that none of the 29 countries had legislation covering all 10 interventions. Only seven of the countries – Australia, Canada, Iceland, New Zealand, Norway, Sweden and the USA – had legislation covering at least seven of the interventions. The World Health Organization (WHO) recently reported that only 28 countries have adequate laws to reduce road traffic injuries by reducing traffic speeds and drink-driving and increasing the use of helmets, seat-belts and child restraints.

The main aims of the present study were to determine which of a set of interventions to prevent child injury were covered by the laws and regulations of China and whether the implementation of such interventions had been assigned to specific governmental departments.

Methods
Selected injury-related causes
We focused on the most common causes of fatal unintentional child injuries in China. In 2010, according to Global Burden of Disease estimates, drowning, road traffic injury, falls, poisoning and burns together accounted for about 73% of all injury-induced deaths among Chinese individuals aged 0–19 years. We therefore investigated these five causes and suffocation. Suffocation was included because, in China in 2010, it was associated with 32% of injury-induced deaths in urban areas and 52% of injury-induced deaths in rural areas of children younger than 1 year.

Interventions
We investigated the 24 interventions that, according to the World report on child injury prevention, were effective against the five causes that we chose from the Global Burden of Dis-
ease. These interventions had all been investigated in robust studies and found to be effective in other countries. However, as suffocation was not considered, we also investigated three interventions that are known to be effective against child suffocation and are recommended by the European Child Safety Alliance (Table 1).

Data sources

In China, a law is defined as a legislative document issued by the Standing Committee of the National People’s Congress. In addition to laws, China also issues regulations of the State Council – i.e. legislative documents, issued by the State Council, that cover the implementation of laws and the matters that Article 89 of the Chinese constitution requests.

China also has legislative documents issued by ministries and commissions under the State Council. These so-called departmental regulations cover the implementation of laws, regulations of the State Council and other orders made by the State Council.

Of the three types of legislative documents issued in China, laws have the strongest legislative power and departmental regulations have the least.

We searched the China National Knowledge Infrastructure and Lawyee – i.e. the two most commonly used academic data sets for legislative documents in China – for laws or regulations covering any of the 27 interventions of interest (Table 1).

Search

We used a three-step approach to develop search words or terms for each intervention of interest. First, we split the name of each intervention into keywords, assuming that various combinations of those keywords could reflect the intervention’s general concept. Second, we expanded the pool of keywords for each intervention to include synonyms and near-synonyms. Finally, we searched the two legislative data sets for relevant combinations of the keywords and their synonyms and near-synonyms. If a search for a particular word or term did not yield a result, we excluded that word or term. We were left with a list of 484 search words or terms that could...
Table 1

Fig. 2

Step 1: splitting interventions into key words

Step 2: expanding the pool of key words

Step 3: finalizing search words and terms

Generating search combinations: \( (5 + 4) \times 5 = 45 \) search combinations

Each intervention was categorized as only partially relevant or irrelevant. Any document assigned different categories by the two researchers was discussed in group discussions – involving the two searchers and the checker – until it could be categorized as relevant or irrelevant to our final analysis.

**Implementation responsibility**

In any country, although the private sector, nongovernmental organizations and advocacy groups may also be involved, governmental departments should take the leading role in the prevention of both unintentional injury and violence.\(^8\) We therefore studied the implementation responsibility – if any – indicated in the legislative documents included in our final analysis. In group discussions, we categorized the statement of responsibility assignment in a legislative document as “clear” – if it specified one or more departments as responsible and clearly stated the duties of individual departments. If the document mentioned the names of two or more departments but did not specify their duties, or only stated that implementation was the responsibility of relevant departments but did not specify the names and duties of those departments or did not mention governmental departments at all, we categorized the statement of responsibility assignment as “unclear”.

**Results**

In October 2013, the China National Knowledge Infrastructure covered all regulations that were in force at the time of our searches. We identified 62 legislative documents – seven national laws, nine regulations of the State Council and 46 departmental regulations – that we considered to be relevant to at least one of the 27 interventions that we were investigating and included in the final analysis. Some interventions are covered by multiple laws or regulations simultaneously.

Interventions against child deaths caused by road traffic injury were covered by four laws, seven regulations of the State Council and 12 departmental regulations (Fig. 2). Interventions against falls were also relatively well covered by legislative documents but no law covered interventions against unintentional child deaths by drowning. Of the 27 interventions that we investigated, 10 were not covered by any Chinese laws and regulations at the time of our searches, seven were covered by laws – including one intervention covered by two laws simultaneously – and seven were covered by regulations of the State Council (Table 1).

One law, one regulation of the State Council and nine departmental regulations failed to assign the implementation of interventions to any specific
departs. Other legislative documents assigned such implementation responsibilities to one or more specified departments (Fig. 3).

Discussion

In China in 2013, we found that 10 of 27 effective interventions against injury-induced child mortality had not been covered by any laws or regulations. The 17 interventions that were covered by some legislative document were more likely to be covered by departmental regulations than by more powerful laws or regulations of the State Council. In addition, many of the associated legislative documents were weakened by their failure to assign responsibilities for the implementation of interventions to named governmental departments.

Our study did have some limitations. For example, it was impossible to determine what percentage of current regulations of the State Council and departmental regulations were covered by the two data sets. We could therefore not determine if we missed regulations that covered any of the investigated interventions. Other potential bias may have resulted from the subjective assessment of researchers that was involved in much of our analysis. However, in an attempt to reduce such bias, we adopted a systematic approach to ensure the standardized implementation of each step in our analysis. We focused on effective interventions that had been identified in technical reports published in 2006 or 2008.2 We therefore took no account of either interventions that were only found to be effective in the last few years or interventions that are only effective against the minor causes of fatal child injuries. We also ignored the possible coverage of the interventions that we did investigate in local regulations or recommendations within China. In Shanghai, for example, the use of car seats for children has been made mandatory and promoted through the efforts of multiple parties.19

There are probably two main reasons why 10 effective interventions are not currently covered by Chinese laws and regulations. First, legislation to cover some interventions may be difficult because the interventions are seen as too expensive to implement nationwide or because the intervention is seen as unnecessary in China. The establishment of dedicated poison control centers and dedicated burns centers, for example, may be perceived as having limited benefit given the existing health-care system in China. Second, any legislation – including that needed to cover interventions that are relatively easy to implement and perceived to be very useful – takes considerable time to develop. The use of child-resistant packaging of medications – which can markedly reduce unintentional child poisoning20 – was recommended by a Chinese researcher in 2011 but this recommendation still had no legislative support in China in 2013.21

Laws and regulations cannot be implemented effectively when they fail to specify the government departments responsible for their implementation. It was recently reported that regulatory failures are primarily due to gaps in regulatory design or implementation.22 Such gaps include the failure to legislate clearly on regulatory function, the failure to assign regulatory organization, insufficient human resources, ambivalence in the roles of regulatory organizations and ineffective coordination between multiple regulatory organizations.

Legislation is only the first step to promote the use of effective interventions. Once laws designed to prevent unintentional child injuries are approved, they are most effective when enforcement is strong. Available evidence suggests that the enforcement of some safety-related laws is inadequate in China. In 2013, for example, WHO graded only one of four interventions related to road traffic injury that are covered by the same Chinese law – i.e. an intervention against drink-driving – as being strongly enforced.23 The enforcement of interventions to reduce speeding or increase the use of seat-belts or motorcycle helmets was considered to be much weaker.24

Conclusion

Several effective interventions against the six major causes of fatal unintentional child injuries are not covered by the current laws and regulations of China. Even for such interventions that are covered by laws or regulations, the
Chinese legislation for child injury prevention

Li Li et al.

Implementation responsibilities are often poorly defined. The government of China could substantially reduce the risk of unintentional injury for millions of children by revising current laws and regulations – or establishing new ones – to cover more interventions that have proven to be effective. Whenever possible, such interventions should be covered by national laws rather than by regulations. The governmental departments responsible for the execution of the interventions need to be clearly identified in any associated legislation. A strong and clear law is better than several weak and obscure regulations. Legislators should continue to monitor scientific discoveries so that legislation to support any novel and effective interventions can be developed quickly.

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ملخص

التغطية التشريعية لوقاية الأطفال من الإصابات غير المتعمدة

الغرض: دراسة مدى انعكاس التدخلات الفعالة لوقاية الأطفال من الإصابات غير المتعمدة على القوانين واللوائح في الصين.

المادة: قمنا بتحري الدعاية السبعة والعشرون التي أوصى بها صندوق الأمم المتحدة للطفولة (اليونيسيف)، أو منظمة الصحة العالمية، أو التحالف الأوروبي لسلامة الأطفال. وأجرينا بحثاً في البنية الأساسية المعرفية الوطنية في الصين وقاعدة بيانات Lawyee لتشريعات الصينية باستخدام كلمات أساسية ل التشريعات المتعلقة بالوقاية من الإصابات. وتمت فحص الوثائق على مستوى الدولة في وسط بيانات مكتبة كلية أوروبا للقانون.

النتائج: أظهرت البيانات أن هناك تغطية قانونية على شأن إصابات الأطفال غير المتعمدة في الصين بسعة 7 من التدخلات السبعة والعشرون. وفيما يتعلق بالمسؤوليات التنفيذية للمضمنة في اللوائح والقوانين، هناك تغطية محدودة للمسؤوليات التنفيذية. وتم تحديد مسؤوليات التنفيذ للتدخلات الفعالة في اللوائح والقوانين بمواد تنفيذية منفصلة.

الاستنتاج: الشكل العام لوافق الإصابات غير المتعمدة في القانون واللوائح في الصين من خلال إلقاء الضوء على القوانين التي تغطي التدخلات الفعالة التي لم يتم تغطيتها. وتعتبر هذه النتائج بمثابة خطوة أولى نحو تحسين التشريعات لوقاية الأطفال من الإصابات غير المتعمدة.

ملخص

中国预防儿童伤害的立法覆盖

目的: 调查中国法律法规在多大程度上反映预防儿童非故意伤害的有效干预措施。

方法: 我们把重点放在六种常见的致命儿童受伤原因: 溺水、道路交通伤害、跌落、中毒、烧伤和窒息。我们研究了由中国国家儿童基金会、世界卫生组织和欧洲儿童安全联盟建议的二十七种干预措施。我们使用这二十七种干预措施的关键字和同义词在中国国家知识基础设施（中国知网）和北大法意进行检索。我们分析了被识别的法律法规和具体措施的相关性。我们分析了被识别的二十七种干预措施的相关性。我们研究了这些干预措施在法律中的具体应用。

结果: 发现七项国家法律、九项国务院规定和四十八项刑法有关干预措施相关。虽然全球推荐的二十七种干预措施在中国法律中包含了七种，但有十种措施在当前中国任何法律或法规中都没有涉及。国家法律没有涉及我们所调查的任何防溺水和防跌落干预措施。
Chinese legislation for child injury prevention

Re-examining legislative coverage of child injury prevention in China

Objectives

1. To determine how many intervention strategies are included in Chinese legal and regulatory documents.
2. To examine to what extent these strategies are assigned to specific government departments.
3. To evaluate the effectiveness of interventions targeted at reducing common children's injuries.

Methods

1. The study focused on 7 national laws and 9 departmental regulations in China.
2. A total of 27 intervention strategies were examined, based on UNICEF, WHO, and Lawyee databases.
3. The strategies were categorized into 6 common causes of non-accidental injuries: drowning, road accidents, falls, poisoning, burns, and suffocation.
4. Intervention effectiveness was assessed for 27 recommendations, of which only 10 were acknowledged in national laws.

Results

1. Seven national laws covered 7 of the 27 interventions.
2. In 11 out of 20 legislative documents, intervention responsibilities were assigned to multiple departments.
3. Effective strategies were often not clearly defined, and their implementation was frequently distributed among multiple government departments.
4. China's current legislative framework is insufficient in covering effective injury prevention interventions.

Conclusion

China should include all such interventions in its laws and regulations, and assign a single department responsibility for their implementation.
recomiendan a nivel internacional, diez de ellas no estaban incluidas en ninguna normativa o ley actual de China. Las leyes nacionales no abarcan ninguna de las intervenciones contra ahogamientos y caídas investigadas. Las responsabilidades de aplicación de intervenciones efectivas no estaban especificadas o estaban asignadas a varios departamentos gubernamentales en 11 o 20 documentos legislativos, respectivamente.

Conclusión En las leyes y normativas de China, las intervenciones que han demostrado la prevención de lesiones infantiles no intencionadas están subrepresentadas y las responsabilidades de aplicación asociadas a menudo tienen una definición vaga. China debe incluir todas estas intervenciones en las leyes y normativas, así como asignar la responsabilidad de aplicación de cada una a un único departamento del gobierno nacional.

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