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Chinese Migrant Workers and Occupational Injuries

A Case Study of the Manufacturing Industry in the Pearl River Delta

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prepared for the UNRISD/Center for Migrant Health Policy project on Migration and Health in China

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Introduction to Working Papers on Migration and Health in China

This paper is part of a series of outputs from the research project on [Migration and Health in China](#).

China is confronted by major challenges posed by the massive population movement over the past three decades. In 2009, approximately 230 million rural inhabitants moved temporarily or permanently to cities in search of employment and better livelihoods. Such large-scale mobility has huge implications for the pattern and transmission of diseases; for China's health care system and related policies; and for health of the Chinese population in both receiving and sending areas. The health and social issues associated with population movement on such an unprecedented scale have been inadequately addressed by public policy and largely neglected by researchers. Based on interdisciplinary research across the health, social science and policy fields, this project constitutes a major effort to fill research and policy gaps. Collectively, the papers and commentaries in this series aim to provide a comprehensive assessment of the health and public policy implications of rural to urban migration in China, to inform policy and to identify future research directions.

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Chinese Migrant Workers and Occupational Injuries: A Case Study of the Manufacturing Industry in the Pearl River Delta

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Abstract

This paper focuses on the causes and impacts of work-related injuries experienced by migrant workers from manufacturing enterprises in the Pearl River Delta (PRD), a major centre of foreign-invested export industry in China. The paper starts with a brief review of the occupational health and safety legislation in China. The authors analyse a database comprising more than 10,000 cases of injured migrant workers in hospitals in the PRD and in-depth interviews undertaken with injured migrant workers to explore the following questions: how do migrant workers who became victims of occupational accidents describe the conditions, causes and impacts of their work-related injuries? What does this body of knowledge tell us about the gap between the legal situation of occupational health in China and the practical situation of occupational injuries as experienced by migrant workers in the PRD? And how can this knowledge contribute to identifying areas of concern for researchers, policy makers and practitioners?

Key findings include the types, frequencies, severity and causes of migrants' work-related injuries; the current state of occupational safety and preventive measures; medical treatment and related costs (including a discussion of whether migrants tend to return home after these injuries); and health care services, health insurance and compensation for injured migrant workers. The paper concludes with recommendations for further research as well as for policy and programme interventions to prevent risk and promote protection within the broader context of institutional adaptation in the Chinese health system.

Key words: occupational health, migrant workers, work-related accidents, injury insurance, health compensation, Pearl River Delta, China

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List of Acronyms

AMRC	Asia Monitor Resource Centre
CLSY	China Labour Statistical Yearbook
DFG	German Research Foundation (Deutsche Forschungsgemeinschaft)
ILO	International Labour Organisation
NGO	Non-governmental organization
NPCSC	Standing Committee of the National People's Congress
PRD	Pearl River Delta
SAWS	State Administration of Work Safety
SC	State Council
WSC	Work Safety Commission

Introduction

At the beginning of the twenty-first century, labour and health policies regarding rural migrant workers in China were reoriented to a more pro-migrant stance. As part of a broader shift in thinking about the political leadership's efforts to establish a legal basis for a more equal treatment of rural migrants in urban areas, an official report on problems of Chinese migrant workers, commissioned by the State Council's research office, was published in 2006. The report addresses the labour environment of migrant workers as one of the outstanding problems:

Labour safety and health conditions are poor, often the most basic labour protection is lacking...Many enterprises are using old machinery without safety devices. Excessive levels of noise, dust and poisonous gases are commonplace. A lack of safety equipment and training is causing occupational diseases and accidents in the workplace. According to the State Administration of Work Safety (SAWS) nearly 700,000 people¹ are left disabled every year due to work-related injuries; most of them are migrant workers. Occupational diseases and accidents have become a major public health and social problem (Guowuyuan yanjiushi ketizu 2006:12).

While the problem of migrants' occupational injuries has been acknowledged by China's political leadership, it is still difficult to get accurate information on the numbers of migrant workers' occupational injuries.²

The frequency of work-related injuries and diseases differs by sector and enterprise ownership. More than half of the fatalities each year between 2000 and 2005 were in mining only. Manufacturing had the second-highest number of work-related injuries, followed by the construction and transport sectors (Zheng et al. 2007:391, 392). The situation is much less severe for state-owned enterprises, which generally have better occupational health and safety systems than privately owned enterprises (Chen and Chan 2010; Zheng et al. 2007:392). This is confirmed by a study of work-injury patients carried out by the Yilian Legal Aid and Study Center,³ showing that more than 70 per cent had been working at privately owned enterprises (Wang 2011:20).

Migrant workers are concentrated in high-risk occupations/sectors, accounting for 68 and 80 percent of the workforce in manufacturing and construction respectively (Zheng et al. 2007:391). Migrant workers face particular risks of occupational injury, including excessively long working hours, lack of on-the-job skills training, high mental stress at work and a past history of work injuries, and it seems questionable whether the cash-earning jobs of migrants in the city can lead to better and sustainable lives for them and their families over the long term.⁴

Despite these risks, there are few comprehensive studies on migrants' occupational health in China. Information on the occupational health and safety situation of migrant

¹ This number has been falsely translated as 70 million in Zhang (2012:76).

² A total of 1,140,601 work injury certification applications have been accepted by the human resource and social security authorities in 2010, including 15,919 (1.4 per cent) diseases. Additional 19,474 work injury certification applications involved deaths (CLSY 2011:406, 408). But from these numbers we do not know to which extent migrant workers are involved. A more detailed discussion on the numbers and indicators of occupational health and safety in China is beyond the scope of this paper. See, for example, Chan and Gao (2012).

³ The Center was registered in Beijing as an NGO in 2007 and its lawyers have since dealt with more than 400 cases of occupational injuries. The research was conducted between December 2010 and February 2011 (Wang 2011:20).

⁴ Zhang 2007:196; Yu et al. 2012:458; Gong et. al. 2012:848.

workers in China is scattered, and the official data related to occupational injuries nationwide are not differentiated by social groups, such as local urban workers versus migrant workers, and so on. Previous case study research has focused mainly on work-related injuries and particularly on fatalities, safety and safety regulations, occupational disease prevention and the occupational health situation of migrant workers. Despite their high incidence of work-related injuries, few relevant studies have been done of workers in Chinese manufacturing industries.⁵

This paper focuses on the causes and impacts of work-related injuries of migrant workers from manufacturing enterprises in the Pearl River Delta (PRD), a major centre of foreign-invested export industry in China with almost 51 million migrant workers (Chinese National Bureau of Statistics 2011). The paper explores the following questions: how do migrant workers who became victims of occupational accidents describe the conditions, causes and impacts of their work-related injuries? What does this body of knowledge tell us about the gap between the legal situation of occupational health in China and the practical situation of occupational injuries as experienced by migrant workers in the PRD? And how can this knowledge contribute to identifying areas of concern for researchers, policy makers and practitioners? The paper starts with a brief review of the occupational health and safety legislation in China. Based on the analysis of a database comprising over 10,000 cases of injured migrant workers in hospitals in the PRD as well as on the analysis of in-depth interviews undertaken with injured migrant workers, the paper presents key findings on the types, frequencies, severity and causes of migrants' work-related injuries; the current state of occupational safety and preventive measures; medical treatment and related costs (including a discussion of whether migrants tend to return home after these injuries); and health care services, health insurance and compensation for injured migrant workers. The paper concludes with recommendations for further research as well as for policy and programme interventions to prevent risk and promote protection within the broader context of institutional adaptation in the Chinese health system.

Occupational Health in China: Legal and Institutional Framework

The National Labour Law (1994) enabled companies to terminate life-long employment agreements and issue short-term labour contracts instead. This development facilitated the mass lay-offs from state-owned enterprises during the late 1990s. Chapter 6 of the law includes regulations and suggestions on occupational safety and health, such as the recommendation that the state should establish a system of statistical reporting on accidents with injuries or fatalities as well as occupational diseases (Article 57). Although not specifically mentioned in the law, migrant workers had already become an important part of the urban labour force.

In 2001 the Occupational Diseases Prevention and Control Act was passed, which prescribes, for example, the replacement of hazardous technology and materials. An amendment to this act (which went into effect on 1 January 2012) should make it easier for those injured or suffering from occupational diseases to obtain diagnoses and compensation (Chen and Yan 2011:4). In addition, the 2002 Work Safety Law requires that workers be trained before beginning their jobs, and that proper protective

⁵ See Chan and Gao 2012; Jin et al. 2012; Yu et al. 2012; Wang and Tao 2012; Zhu et al. 2010; Qiao 2010. For a more detailed review of the literature on the occupational health situation of Chinese migrant workers see the paper by Robinson et al. (forthcoming).

equipment be provided. Employers are responsible for work safety and have to undertake safety management by appointing personnel committees charged with the task, establishing safety rules and complying with reporting regulations. According to Article 7 of the Work Safety Law, trade unions or other employee organizations have the right to supervise safety matters (Brown 2010:105, 109).

In 2004, China instituted the Work-Related Injury Insurance Regulations which cover work-related injuries, disability, death and occupational diseases. According to these regulations, employers have to pay the medical expenses of employees suffering from work injuries plus a disability allowance based on the seriousness of the injury. All types of enterprises are covered (Brown 2010:115,116,117).⁶ The regulations recommend rehabilitation services although these are not compulsory. When the regulations were updated in 2011, they stated that the Industrial Injury Insurance Fund⁷ could be used for rehabilitation services, but Guangdong was the only province doing so by 2011 (Li 2011:6).⁸ According to the Labour Contract Law (2008),⁹ work safety provisions and measures to prevent occupational hazards have to be included in labour contracts.

On 1 July 2011, China's first comprehensive Social Insurance Law¹⁰ went into effect. It unifies local rules and regulations on social insurance matters and covers pension, medical, unemployment, work-related injury and maternity insurance. Chapter 4 (Articles 33–43) of the Social Insurance Law deals with work-related injury insurance. According to Article 33, work-related injury insurance premiums shall be paid in full by the employing entities rather than by workers. Based on the level of work-related injury risks, the state determines the different rates of premiums for different industries. The method of identifying work-related injury and assessing capacity for work is to be simple and convenient (Article 36). While medical and rehabilitation fees, meal allowances during hospitalization, fees for daily care, funeral allowances and fees for assessing work capacity have to be paid from the work-related injury insurance fund, the employer has to pay for wages and welfare during the treatment period, monthly disability subsidies for workers with class 5 or 6 disability¹¹ and one-off employment allowance for the disabled upon termination or rescission of the labour contract. If employers do not pay the

⁶ Because this regulation was issued by the State Council and not by the National People's Congress, employers can more easily ignore it.

⁷ The Industrial Injury Insurance Fund was established in 2004. In September 2010 it had a surplus of 44 billion Yuan (US\$ 6.68 billion). It might be speculated that rehabilitation services are not well advertised, that employers are refusing to pay for such services and that injured migrant workers are concerned that the services could lower the amount of health compensation and prolong the time they cannot work (Li 2011: 1,6).

⁸ The Guangdong Province Work Injury Rehabilitation Center opened in 2001 in Guangzhou. It was the first and largest facility of its kind in China. It can treat 200 patients at a time, and offers services from physiotherapy, occupational therapy and hydrotherapy to speech and music therapy and psychological counselling. Forty-three different work training programmes are designed to simulate environments for occupations such as electricians, drivers, cooks, and so on. Seventy-eight per cent of the clinic's patients were able to return to work over the last three years. The Center is a model institution providing training and support for establishing similar rehabilitation centres in other provinces. The Center has thus far focused on more severe cases of work-related injuries (author's visit to the Center on 25 October 2012; see also Li 2011:6).

⁹ *Zhonghua Renmin Gongheguo Laodong Hetongfa* (Labour Contract Law of the PRC).
www.ldht.org/html/fagui/gjfl/2270.html.

¹⁰ The English version of the Social Insurance Law can be accessed at:
<http://www.bycpa.com/html/news/20116/1585.html>

¹¹ The standard assessment of severity of work-related injuries and occupational diseases (work disability scale) has 10 grades from 1 as the most severe (such as loss of an organ) to 10 as the least severe (for example, no functional deficiencies, not requiring medical care). Workers with grade 5 and 6 disability require general medical care but are capable of self-care, such as the loss of a thumb (grade 5) or partial loss of speech (grade 6) (Brown 2010:122).

insurance premium, they should pay the work-related injury insurance benefit. If they refuse to pay, the payment should first be made from the work-related injury insurance fund which can then claim it from the respective employer.

Table 1 provides an overview of occupational health and safety laws and regulations in China, their main points and dates of promulgation.

Table 1: Chinese Occupational Health and Safety Laws and Regulations (1994–2011)

Date	Promulgated by Department	Document	Main points
5 May 1994	NPCSC	Labour Law of the PRC	Regulates <ul style="list-style-type: none"> labour contracts and collective contracts work and leisure time wages work safety and health protection of female and young employees social insurance and social benefits labour conflicts
27 October 2001	NPCSC	Occupational Diseases Prevention and Control Act	Establishes <ul style="list-style-type: none"> occupational hygiene standards and technical specification systems supervision and law-enforcement strength of occupational disease prevention and control supervision of occupational hazards in construction projects and control of occupational diseases supervision of occupational health agencies basic occupational health service (BOHS) pilot activity
12 May 2002	SC	Regulations on Labour Protection in Workplaces Where Toxic Substances Are Used	<ul style="list-style-type: none"> Applies to occupational poisoning hazards Stipulates that employing unit shall take effective measures to prevent occupational poisoning accidents
29 June 2002	NPCSC	Work Safety Law	Requires <ul style="list-style-type: none"> employers to meet safety standards and to undertake safety management, including establishment of safety rules
27 April 2003	SC	Work-Related Injury Insurance Regulations	Covers <ul style="list-style-type: none"> work-related injuries disability death occupational diseases
29 June 2007	NPCSC	Labour Contract Law	Regulates <ul style="list-style-type: none"> labour contracts (normally written and permanent) minimum wages punishment if wages are withheld or below the minimum wage dispatched labour, part-time work and subcontracting
29 December 2007	NPCSC	Labour Dispute Mediation and Arbitration Law	<ul style="list-style-type: none"> Institutionalizes procedures regarding mediation and arbitration of labour conflicts
28 October 2010	NPCSC	Social Insurance Law	<ul style="list-style-type: none"> Unifies local rules and regulations on social insurance matters Includes pension, medical, unemployment, work-related injury and maternity insurance
31 December 2011	NPCSC	Amendment to the Law on Occupational Diseases Prevention and Control Act	<ul style="list-style-type: none"> Combines workplace occupational health supervision adjustment with and the actual requirements of occupational disease prevention and control

Note: NPCSC = Standing Committee of the National People's Congress; SC = State Council

Sources: Braun 2011; Brown 2010; Schnack and Yuan 2010; ILO 2012; Wang and Tao 2012.

Regarding international occupational safety and health conventions, China signed the International Covenant on Economic, Social and Cultural Rights on 27 October 1997 and the ILO (International Labour Organization) Convention 155, Occupational Safety and Health Convention, 1981, but it has still not ratified ILO Convention 161, Occupational Health Service, 1985 (ILO 2012:16; see also AMRC 2012:18,19). Despite the new labour legislation and the new Social Insurance Law, implementation is still far from comprehensive. By 2011, only 23.6 per cent of all migrant workers were included in the work injury insurance (Chinese National Bureau of Statistics 2011).¹²

Following up on the new labour and safety regulations, in 2003 the Chinese leadership started to strengthen the authority and power of work safety institutions by establishing the Work Safety Commission (WSC) of the State Council. In 2005 the former State Bureau of Work Safety (vice-ministerial level) was renamed the State Administration of Work Safety (SAWS) and upgraded to ministerial level (Chan and Gao 2012:361, 62). The SAWS is responsible for administration and enforcement of the Work Safety Law. On the local level work safety commissions were initiated to enforce the policies and regulations of the WSC. Enforcement of the Occupational Disease Prevention and Control Act is done by the health departments at county level and above. On the basis of this institutional reorganization, the Chinese leadership tried to overcome the segmented regulatory system that had limited state capacity to monitor safety performance and enforce policies (see Chan and Gao 2012:359). But even with this new structure to the country's occupational safety and health agencies, numerous ministries and agencies are still involved in managing the work safety system. For example, the SAWS is responsible for on-site health inspections, the Ministry of Human Resources and Social Security is responsible for work injury insurance, and the Ministry of Health is responsible for occupational health examinations and occupational diseases diagnosis (ILO 2012:18). In addition, because work safety is managed on a locality basis, officials in charge of work safety may face the dilemma of pursuing their responsibilities while local leaderships are expressing (or demanding) loyalty to local entrepreneurs (see Chan and Gao 2012:360,61).

While it is obviously the case that labour legislation in general and the new regulations on work safety and work injury insurance have contributed considerably to improving the legal situation of workers, including that of migrant workers, implementation and enforcement are still very difficult. The following analysis of the conditions, causes and consequences of accidents at manufacturing companies in the PRD as reported and described from the perspective of the victims of these work-related incidents should help to understand the discrepancy between the relatively comprehensive labour legislation on the one hand and the high rate of accidents, particularly among migrant workers, on the other.

Data Sources and Methods

This paper draws on two sources of data. The first is a database consisting of 10,051 "hospital visit forms on work-related injuries" filled out by migrant worker patients in 20 different hospitals in Guangzhou, Dongguan, Foshan, Huizhou, Zhongshan and other places in the PRD from 2003 to 2010. These migrant workers had been injured while

¹² This figure had increased slightly from 21.9 per cent in 2008 (Qiao 2010). Even fewer migrant workers participate in other categories of social insurance, including medical costs (16.7 per cent), the pension system (13.9 per cent), unemployment insurance (8 per cent) and maternity benefits (5.6 per cent) (Chinese National Bureau of Statistics 2011, Diagram 4).

working at manufacturing enterprises in the PRD. It is thought that the visit forms comprise the largest sample size and longest time span of data on injured migrant workers in the Pearl River Delta. The database provides basic information on work-related accidents and their causes. It further provides information about the costs of medical treatment and the conditions of care in the hospitals. Since the visit forms were filled out while the injured workers were still in hospital, which means relatively shortly after the injuries occurred, the information does not cover matters such as the long-term consequences of injuries on the health and working capacities of the victims or other long-term issues such as compensation payments or decisions as to whether to stay in the PRD or return home. Even if this database does not fulfil the criteria of a random sample or a representative survey study, it is a rare and valuable data source in terms of its magnitude as well as its eight-year time frame. Access to injured migrant workers was facilitated by a local migrant worker NGO in the PRD.

The second main source of data, collected independently from the first source, consists of 22 in-depth interviews with 24 migrant workers conducted between December 2009 and April 2010.¹³ These workers had been injured when employed by small manufacturing enterprises in Guangzhou.¹⁴ The interviews were conducted using a combined method of semi-structured and in-depth approaches based on a checklist of questions on migration background, socioeconomic condition before and after the injury, working conditions, injury circumstances, health conditions and health strategies, and conflicts with employers. At the time of their interviews the accident victims had already recovered from their injuries. All interviewees¹⁵ had conflicts or litigation with their employers over payments for medical costs or compensation related to their occupational injuries. A local migrant worker NGO in Guangzhou helped to access the interviewees.

The results from these quantitative and qualitative studies of victims contribute in different ways and with different limitations to our knowledge of work-related accidents suffered by migrant workers at manufacturing enterprises in the PRD. The advantage of the large quantitative dataset lies in determining frequencies from a large pool of responses and thus enables a certain degree of generalization, and with it the ability to detect basic trends and tendencies. The disadvantage is that the responses to a quantitative study remain limited to the framework provided by the questions on the “hospital visit forms”. By contrast, the method of in-depth interviews provides more room for the interviewees to expand on the complex dynamics of their experience of a work-related injury, its causes and impact on their lives. At the same time, these analyses are limited by the fact that the interviews consist of individual cases, were held only once and are biased insofar as the interviewees were involved in ongoing or completed litigation. Another difference between the two sets of data is that the quantitative study covered manufacturing companies of different sizes,¹⁶ that is, it also included larger enterprises, whereas the interviewees in the qualitative analysis all came from smaller manufacturing enterprises (which—as we will see—have a higher frequency of injury than the larger ones). Yet another difference lay in the time point of the sources of data vis-à-vis the actual occurrence of injury. The quantitative study was performed shortly after the accidents, whereas the qualitative interviews were held after

¹³ We would like to thank the German Research Foundation (DFG) for funding this research (GR 852/9-2) as part of the Priority Program 1233 “Megacities-Megachallenge—Informal Dynamics of Global Change”.

¹⁴ While two of the interviews in this series had two subjects, the other 20 were individual. A total of 21 interview dialogues were recorded and transcribed.

¹⁵ The term “interviewees” indicates those who took part in the in-depth interviews conducted in 2010 in Guangzhou.

¹⁶ For more details, please refer to table 4.

the subjects' injuries had healed, although they were still facing various consequences such as conflicts with their employers about wage payments or compensation in connection with their injuries. However, neither study enabled us to determine the effect of migrant workers' occupational accidents on their decisions to remain in the city or return to their home villages. For this reason, we also looked at results from a survey on return migrant workers by Chen Chuanbo.¹⁷

Demographic Characteristics of the Respondents

The demographic characteristics of the respondents in the two main data sources are presented below (table 2). These are then compared with the characteristics of Chinese migrant workers in general (Chinese National Bureau of Statistics 2011).

Table 2: Demographic Characteristics of Database Respondents and Interviewees Compared to Chinese Migrant Workers in General (Overview)

	Quantitative research: 10,051 hospital visit forms (PRD, 2003– 2010)		Qualitative research 22 in-depth interviews* (Guangzhou, 2010)	Migrant workers (China, 2010)
Age (years)	<i>Average</i> 28.8	<i>Average in 2010</i> 31.12	33.5	36
Gender	<i>Average (per cent)</i>			
male	87.3		83.3% (20)**	65.9%
female	12.7		16.7% (4)	34.2%
Education	<i>Average (per cent)</i>		Only 12 precise answers	
<i>Primary school or junior middle school</i>	84.2		66.6% (8)	77.0%***
<i>Technical middle school or senior middle school</i>	15.1		33.4% (4)	17.7%
<i>Higher education</i>	0.7		-	5.3%
Manufacturing sector	<i>Average (per cent)</i>			<i>Industry (per cent)</i>
<i>Metal</i>	27.6		46.3% (5)**	Manufacturing 36.7
<i>Furniture</i>	16.2		12.5% (3)	Construction 16.1
<i>Electric/electronic</i>	8.9		4.2% (1)	Transport, storage, post & telecomm 6.9
<i>Plastic</i>	7.6		4.2% (1)	Wholesale, retail 10.0
<i>Shoe</i>	5.3		4.2% (1)	Accommodation &catering 6.0
<i>Construction</i>	4.7		4.2% (1)	Services 12.7
<i>Print (paper)</i>	4.2		12.5% (3)	
<i>Others</i>	19.2		37.5% (9)	
Province of origin	<i>Average (per cent)</i>			<i>Out-migration*** (per cent)</i>
<i>Sichuan</i>	18.3		16.7% (4)**	8.0
<i>Hunan</i>	17.9		12.5% (3)	6.0
<i>Guangdong</i>	10.5		20.8% (5)	8.5
<i>Guangxi</i>	9.8		—	4.0
<i>Henan</i>	9.0		—	8.0
<i>Jiangxi</i>	7.4		25.0% (6)	3.0
<i>Guizhou</i>	7.3		4.2% (1)	3.0
<i>Hubei</i>	5.5		4.2% (1)	4.0
<i>Shaanxi</i>	4.6		—	2.5
<i>Other</i>	3.7		16.7% (4)	53.0

Notes: *with 24 interviewees ** the figures in parentheses are absolute numbers. *** figures for 2011.

¹⁷ See the section of this paper entitled “After Work Injuries: Returning Home or Staying in the City?”; see also Chen and Ding (forthcoming).

A comparison of the data (in particular from the hospital visit forms) with the official statistics on the demographic characteristics of Chinese migrant workers in general shows the following similarities and differences.

Age

The average age of all database respondents¹⁸ (2003–2010) was 28.8 years. During that period—from 2003 to 2010—the average age of migrant workers in the PRD who suffered occupational injuries rose from 24.8 to 31.1 years.¹⁹ The average age of these accident victims lies below the average age of Chinese migrant workers in general (36 years). One might surmise that younger migrant workers have a higher risk of injury than their older counterparts. The average age of all Chinese migrant workers, however—for both the study respondents and the general population—is rising. In particular, the percentage of Chinese migrant workers over 40 years of age is increasing, from 30 per cent in 2008 to 38.3 per cent in 2010 (Chinese National Bureau of Statistics 2011:3). We may therefore assume that the increasing average age of the respondents means that older men are working for longer periods of time as migrants. An additional factor could be that fewer migrant workers of the second generation (born after 1980) are willing to work in these dangerous sectors.

Gender

The share of men (well over 80 per cent) in both sources of data on accident victims is considerably higher than that for migrant workers in general, where the ratio is 65.9 per cent men to 34.1 per cent women (Chinese National Bureau of Statistics 2011:3). This is surprising, because the Pearl River Delta in particular has an above-average share of female migrant workers, namely 49 per cent in 2008 (Gonganbu zhian guanliju 2008: 82). But a higher burden in occupational injuries of male migrant workers compared with female migrant workers is a finding consistent with other studies looking into the gender dimensions of work-related injuries (see Dai et al. 2011). It is possible that female migrant workers suffer relatively fewer work-related accidents because they less frequently enter industries with high accident rates such as the metal and wood-processing sectors. There could also be some bias in the data collection, however, if more of the interviewers were male and thus had easier access to male patients at the hospitals.

Education

Regarding education, 84.2 per cent of respondents had an educational level of junior middle school or below, 15.1 per cent had finished a technical middle school or senior middle school, and only fewer than 1 per cent had a higher education.²⁰ The injured migrant worker database thus shows a higher percentage of respondents with an educational level of junior high school or below than for all migrant workers (77.0 per cent) (Chinese National Bureau of Statistics 2011:3). In addition, the database shows fewer workers with a technical or senior middle school education (15.1 compared to 17.7 per cent of all migrant workers) and significantly fewer workers with a higher education (0.8 per cent) than the 5.3 per cent shown by the official statistics for all migrant workers (Chinese National Bureau of Statistics 2011:3). Therefore, the average educational level of the respondents is lower than that of the migrant workers in general.

¹⁸ The term “respondents” indicates those who filled out the “hospital visit forms on work-related injuries” for the study conducted in the PRD.

¹⁹ For more details, please refer to table A in the appendix.

²⁰ For more details, please refer to table B in the appendix.

Industrial and economic sectors

The distribution of accident victims from both data sources across industrial sectors shows the metal and furniture sectors with the highest number of injuries (27.6 and 16.2 per cent, respectively), followed by the electric/electronics (8.9 per cent), plastic (7.6 per cent) and shoe (5.3 per cent) sectors.²¹ In general, more migrant workers are active in the manufacturing (36.7 per cent) than in any other economic sector.²²

Provinces of origin

The provinces of origin of the accident victims interviewed in the PRD do not differ markedly from data on the provinces of origin of migrant workers in general, with a higher number only from neighbouring provinces to the PRD. This fits the general migration pattern. Sichuan, Henan, Hunan and Anhui are typical out-migration provinces. Jiangxi and Guizhou, also out-migration provinces, are quite close to Guangdong province.

Analysis and Key Findings

This analysis of the data sources and the subsequent presentation of key findings take a five-part structure. We start with a description of types, frequencies, severity and causes of work-related injuries as reported by the migrant workers. Second, we look into the occupational safety and preventive measures (or lack thereof) at the workplace. Third, we analyse potential health and economic problems arising from the migrant workers' medical treatment in hospital and related costs such as care services. Fourth, we consider the longer-term consequences of work-related injuries related to rehabilitation measures and restoration of work abilities, as well as insurance and compensation schemes for injured migrant workers. And finally, we explore reasons and motives for why migrant workers stay in the city after suffering a work-related accident instead of returning home for shorter or longer periods.

Work-related injuries: Types, frequencies, severity and causes

Types of injuries

The body parts injured (table 3) were primarily hands which accounted for 82.6 per cent of all injuries (including 35.1 per cent left-hand fingers, 35.9 per cent right-hand fingers, and 11.5 per cent palms, wrists and arms).

Table 3: Types of Injuries

Position	Frequency	Per cent
Fingers left hand	3,528	35.13
Fingers right hand	3,604	35.89
Fingers (unclear which hand)	677	6.74
Palm, wrist	482	4.80
Toes	392	3.90
Parts of legs and feet	770	7.67
Other parts	590	5.87
<i>Total</i>	<i>10,043</i>	<i>100.00</i>

²¹ For more details, please refer to table C in the appendix.

²² Official statistics on the distribution of migrant workers among different areas of the manufacturing industry were not available.

Other studies suggest that the types of injuries are related to the industry sectors and the types of work involved (see Zheng et al. 2007). As discussed above,²³ over 60 per cent of the respondents and interviewees were concentrated in four industrial sectors (namely metal, furniture, electric/electronic and plastic). Some 33.4 per cent of the respondents had been working as machine operators, 9.5 per cent had worked with punching machines and 7.7 per cent had worked as carpenters.²⁴

The dangerous nature of these types of work is illustrated by the example of Mr. Y. (interview 1) who injured his right hand while working in a furniture factory (producing billiard tables and accessories). “Using my hand to push the wooden material into the machinery, the material fell apart and my hand was pulled into the machinery.” Although he and nearly all of the in-depth interviewees had received medical treatment after the incidents and their wounds had healed by the time of the interviews, most of them were still suffering from permanent related damage such as hand paralysis, the effects of cerebral concussions or the loss of fingers or parts thereof.

Frequency of injuries

The enterprises at which the injured workers had been employed had workforces ranging from fewer than 50 to more than 1,000 employees. According to the database, smaller factories had a much higher frequency of work-related injuries.

Table 4: Distribution of Injured Workers by Size of Enterprise (2003–2010) (per cent)

Size of Enterprise	2003	2004	2005	2006	2007	2008	2009	2010	Total
Fewer than 50 employees	19.17	19.02	18.22	18.43	25.15	24.97	26.24	26.95	22.48
50–249 employees	38.08	40.49	48.98	44.44	42.3	38.74	38.94	34.98	40.35
250–499 employees	14.64	13.23	11.66	14.27	10.58	11.29	10.48	9.15	11.92
500–999 employees	12.05	10.31	8.31	7.2	9.4	8.1	8.36	7.79	8.96
1,000 or more employees	16.06	16.95	12.83	15.66	12.57	16.91	15.98	21.14	16.3
Total number of valid forms	772	1,882	686	792	851	2,295	945	809	9,032

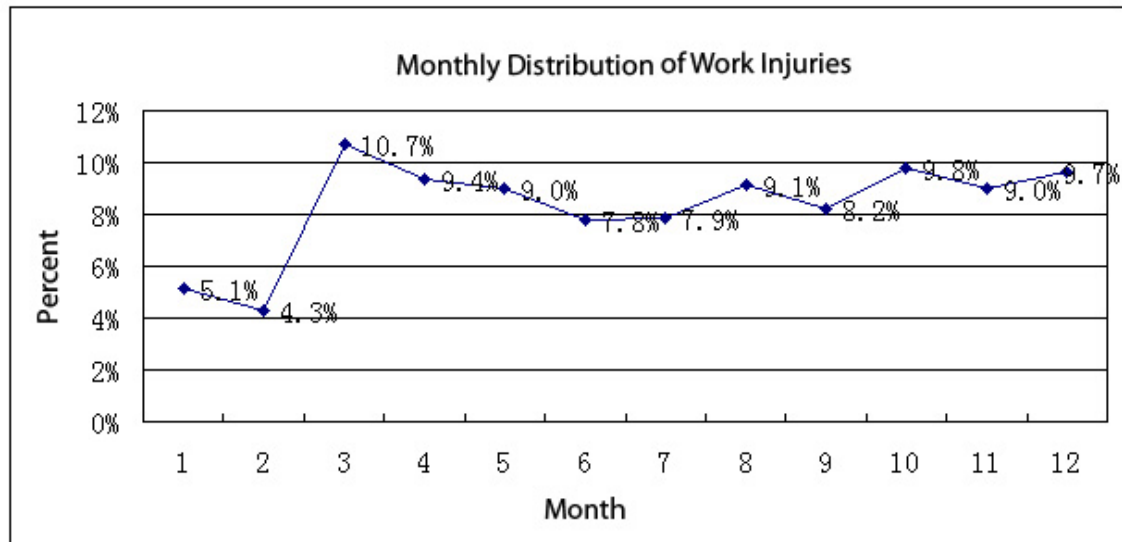
As shown by table 4, 62.83 per cent of the respondents had been employed by enterprises with fewer than 250 employees. The highest frequency of work-related injuries occurred in enterprises with a workforce of 50 to 249 employees. Enterprises with local Chinese employers had the highest frequency of injuries. Sixty-four per cent of the employers came from China, including 15.2 per cent from other provinces than Guangdong and 5.9 per cent from other places within Guangdong. Seventeen per cent of the employers were from Taiwan and 6.9 per cent from Hong Kong; 1.25 per cent came from Europe and 0.5 per cent from Japan.

More accidents occur during busy seasons of the year, whereas the rate is lower during Spring Festival when most migrant workers return home. The database shows a strong correlation between the production cycle and the occurrence of accidents. An increase in accidents can be observed between March and May, and between October and December (figure 1). Substantial overtime is often required from October to December to complete the production tasks and fill the orders for the coming Spring Festival. The probability of work-related injuries then decreases from January to February when migrant workers return home to celebrate Spring Festival. When factories resume full operations in March, they once again face peak order volumes which require overtime work to process.

²³ See table 2 on demographic characteristics.

²⁴ Out of a total of 9,172 valid hospital visit forms.

Figure 1: Monthly Distribution of Accident Occurrences



Besides overtime work during busy seasons, longer working hours seem to be a contributing factor for injuries. Compared to the situation of migrant workers in general, the respondents clearly worked a greater number of daily and weekly hours. While migrant workers in general worked nine hours a day and 86.4 per cent of them were “working more than five days a week” (Chinese National Bureau of Statistics 2011:7) in 2010, the respondents reported an average of 10.2 working hours a day²⁵ and 6.6 working days a week for the same year. Studies have shown that overtime fatigue can easily lead to accidents at work (Committee of the Communist Youth League, Foshan City 2004; Li et al. 2006).

A higher frequency of work-related accidents can be observed not only during busy seasons but also at the start of new jobs. workers are more likely to be injured shortly after beginning to work, be it a new job at an unfamiliar factory, shortly after returning from holiday or after being assigned a new task at the same factory. This observation is substantiated by the qualitative interviews.

Ms. W. from Guizhou (interview 12) who normally did needlework at a hat factory reported: “Our factory, it makes these caps, actually I had always done sewing, but then the guy who operated the clinching machine for the sewing work got injured here. And then he didn’t work here anymore. But the company didn’t want to hire any new people, so someone from the existing staff had to take that on.” The job fell to Ms. W., who was then injured at the clinching machine just like her predecessor, and it is possible that her successor will suffer a similar fate as well. Because of permanent damage to her hand, Ms. W. cannot resume her previous work as a seamstress.

The sewing I used to do with this hand, that’s all not possible anymore, because even with the slightest pressure it can hurt inside here. That’s just the way it is, there’s nothing that can be done about it, I don’t have any feeling here anymore, it’s like a piece of wood! But if I try to do something that requires strength, then it

²⁵ According to a survey by the Department of Sociology and Social Work at Sun Yat-sen University, the average daily working time of migrant workers in the Pearl River Delta in 2010 was 9.34 hours (Liu et al 2011:112).

hurts like mad! That’s why I also can’t do the clinching work that I did before, and why I can’t do sewing at all! (interview 12)

In addition, more accidents happen at the beginning or shortly before the end of a shift. In all, 19.11 per cent of the victims in the database reported that their accident had occurred within less than one month of coming to the factory, 30.4 per cent within less than two months and 50 per cent less than five months, representing the phenomenon of “being injured shortly after coming to the factory.”

Severity of injuries

The severity of work-related injuries is usually assessed by the grade of work disability on a scale from 10 (least severe) to 1 (most severe) as decided by the responsible labour authorities.²⁶ According to the China Labour Statistical Yearbook in 2010, out of a total of 418,857 persons who has been assessed with a certain work disability, 87 per cent were certified grade 7–10, 7 per cent were certified grade 5–6 and 6 per cent grade 1–4 (CLSY 2011:410). As the severity of work-related injuries is evaluated only after treatment, this method was not suitable to obtain information about the severity of injuries of migrant worker patients still in hospital. Therefore, for the “hospital visit forms”, a different method was applied. To find out about the severity of the respondents’ injuries, the duration of their stay in hospital was used as an indicator. Based on the “Classification criteria of accidents with injuries or fatalities of enterprise employees” (GB6441-86), injuries were classified as “severe” if the duration of staying in hospital was more than 105 days. The injuries of respondents with hospital stays shorter than 105 days were classified as “minor” injuries. Out of a total of 5,536 valid answers, 91 per cent were classified as having minor injuries and 9 per cent of the respondents were classified as having severe injuries.

Causes of injuries

Asked about the causes of their injuries, 53 per cent of the respondents simply attributed them to “accidents”. Answers from the other respondents were more specific and can be divided into roughly two categories: the first comprises factory safety management including machine failure (named by 21.3 per cent of respondents), lack of safety training (6.3 per cent) and excessive work hours (3.1 per cent); the second consists of the workers’ own safety behaviour, primarily careless operations (10.2 per cent). Other causes given included traffic accidents (2.7 per cent).

Table 5: Migrant Worker Injuries and Reported Causes (2003-2010)

Cause of Injury	Number of Migrant Workers	Per cent
Accident	5,216	52.83
Machinery malfunction	2,102	21.29
Carelessness	1,004	10.17
Excessive work hours	304	3.08
Traffic accident	263	2.66
Lack of safety training	619	6.27
Other	365	3.70
<i>Total</i>	<i>9,873</i>	<i>100</i>

Illnesses are even more complicated than injuries when it comes to determining whether they may be work-related. Typical illnesses are lung conditions which may be caused by higher exposure to dust particles at furniture-making facilities or skin rashes resulting from the use of toxic chemicals. The most frequent diseases in migrant workers are

²⁶ See footnote 11.

leukaemia caused by toxic benzene, pneumoconiosis (including silicosis, dust lung) and hearing disorders caused by noise levels at the work site (Gransow 2010:12).

For example, the furniture sector which already has a high rate of work-related injuries is also a high-risk sector for work-related illnesses. Mr. Y. (interview 1) told us about one colleague at his billiard table factory:

I have a hometown fellow, his whole chest and upper part of his body was sprinkled with red spots. He works in the paint workshop... He did not wear a mouth protection mask, he did this far too long, for 7 or 8 years, much too long. Many a time he did not wear a mask, so this could develop. Over the long run the body cannot resist. In Guangzhou, he went to a TCM hospital, and they said he had skin allergy. As a matter of fact, we all know quite clearly that the paint shop poisoned him.

Mr. Y. also refers to a case in Dongguan: “I heard about someone in Dongguan who had also worked at a paint shop for 8 years; one day he did overtime until 8:30 in the evening, and the next morning he didn’t get up, he was dead. It’s very clear that he was poisoned from the paint shop” (interview 1). Because the symptoms of occupational illnesses often don’t appear until later—sometimes only after the worker has left—it is very difficult to demonstrate the connection to a certain activity at a certain time. Especially in cases of chronic illnesses which might involve long-term treatment and/or permanent disability, there is a relatively high probability that those affected will return to their home areas. That also makes it more difficult for them to pursue any relevant legal action (see also Jing 2010).

While it is easier to prove the connection between work and injuries or accidents than that between work and certain diseases, even this knowledge yields only limited insights into the underlying reasons for the high rates of work-related injuries in some industrial sectors. In the next section we will take a closer look behind the immediate causes of work-related accidents by analysing the situation of safety equipment, safety administration, safety consciousness and safety training as seen by the respondents and interviewees.

Labour Protection: Lack of Preventive Measures and Occupational Safety

The purpose of labour protection in general can be defined as protecting life and health at work in order to make the work more humane and to correspondingly improve the working environment. Labour protection should be applied to all industries such as mining, manufacturing, agriculture and public services, and also cover part-time and subcontracted work. It is the duty of employers to observe risk prevention principles, and the duty of employees to participate in work protection measures; employees should additionally have the right to refuse to work under hazardous circumstances. Work-related medical care should be supported by work safety professionals, and work safety agencies and statutory accident insurance should cooperate in monitoring tasks (see Universum Verlagsanstalt 1993:73).

Lack of work protection is reported by slightly over half of the accident victims who filled out hospital visit forms between 2003 and 2010 (table 6). Overall, 46.9 per cent of respondents stated that their enterprises provided labour protection equipment (50.9 per cent responded that labour protection equipment did not exist, and 2.2 per

cent answered “do not know”). A comparison over the years appears to show that the proportion of workers receiving safety equipment has gradually increased, but the progression is very unstable, beginning with 35.1 per cent in 2003, reaching 61.8 in 2006, then declining to 44.5 in 2007, and finally reaching around 50 per cent in 2010.

Table 6: Existence of Safety Equipment, as Reported by Accident Victims

Worker Safety Equipment	2003	2004	2005	2006	2007	2008	2009	2010	Total
Existing (per cent)	35.13	43.07	50.49	61.8	44.52	43.47	57.36	49.66	46.88
Not existing (per cent)	64.24	56.73	49.23	37.71	55.03	52.39	38.74	44.58	50.89
Don't know (per cent)	0.63	0.2	0.28	0.49	0.45	4.15	3.9	5.76	2.23
Total number of valid forms	797	1,983	717	822	894	2,556	999	886	9,654

Besides the lack of safety equipment, a lack of production safety training is one of the most important risk factors for work-related accidents. In all, 65.8 per cent of the victims did not receive any pre-job production safety training from their enterprises (see table 7). Comparatively speaking, a higher number of respondents received training over the years, although with some fluctuations in individual years. As studies have shown, a lack of safety training is an important factor in the occurrence of work accidents (Huang and Chen 2002; Tam et al. 2004).

Table 7: Production Safety Training (2003–2010)

Safety Training	2003	2004	2005	2006	2007	2008	2009	2010	Total
Existing (per cent)	29.49	32.05	22.7	24.76	34.38	29.9	40.42	34.08	31.23
Not existing (per cent)	70.26	67.79	76.46	74.63	65.29	64.54	53.36	59.28	65.83
Don't know (per cent)	0.25	0.15	0.84	0.61	0.34	5.56	6.23	6.64	2.93
Total number of valid forms	797	1,981	718	820	893	2,572	1,012	889	9,682

From the in-depth interviews it can be seen how various risk factors are mutually intensifying. Mr. L. from Yunnan (interview 4), who had found employment at a foundry in Guangzhou city, said:

They had me do a job, mixing something together... The supervisor just told me to start, he'd call a foreman who would show me how to get down to the warehouse. So I did that every day. While I was waiting for this foreman, the hook on a crane hit the back of my head. I blacked out, and a co-worker helped me and brought me to the office. They should have taken me to the hospital, but no one came, 40 minutes probably went by before someone came and took me to the hospital, and there was something wrong with my eyes and I couldn't see a thing!

Descriptions of the circumstances of accidents normally yielded the information that the factories had neither an emergency room equipped with first-aid materials nor somebody with first-aid knowledge. In some cases precious time was wasted immediately after an accident and the consequences of some injuries could clearly have been lowered if help were provided more quickly than reported by the interviewees (also interview 12, p.4; interview 20).

The combination of inadequate safety measures and overtired workers operating machinery or vehicles for which they have also not been properly trained could have

disastrous consequences. Not only did the supervisor fail to show Mr. L. a safe place to do his job as soon as possible, but also the crane operator who caused the accident was not trained to operate it and furthermore must have been extremely tired at the end of an excessively long shift.

[The boss] said that the workers weren't allowed to operate the crane. But that crane there was always run by newcomers... The day that the accident happened, they had a shift of 17 or 18 hours without a break. The guy who injured me, his shift started at midnight and ...—really, you know it's possible to doze off—when I was injured it was [already] 4 in the afternoon.

Overly long working hours may have led to an accident involving another worker here, but may also be seen as a risk factor for accidents to overly fatigued workers themselves.

Staying in Hospital: Treatment Costs, Living Expenses and Daily Care

Work-related injuries that require a stay in hospital generate different kinds of costs for the accident victims, including those for medical treatment, living expenses and daily care while staying in hospital. In addition, the loss of earnings during the period when it is not possible to work may increase the financial burden associated with the injury.

Medical treatment, living expenses and sick pay

As can be observed from the database, accident victims were normally sent to hospital, and 96.7 per cent of them received treatment in time.²⁷ The average duration of stay was two weeks. The medical treatment costs²⁸ for victims of occupational accidents increased from 6,539.87 Yuan in 2003 to 13,061.15 Yuan in 2010. With average monthly wages for respondents amounting to 768 Yuan in 2003 and 2,078 Yuan in 2010,²⁹ this means that the costs for hospital treatment corresponded to 8.5 monthly wages in 2003 and 6.2 monthly wages in 2010. Hospital treatment costs have therefore declined somewhat vis-à-vis wages, but they still by far exceed the budget of a migrant worker.

The vast majority of respondents (96.2 per cent) stated that the employers had assumed the costs for their stay in hospital. Only 2.8 per cent were paying the costs themselves. Employers also covered a high percentage, albeit clearly not all, of the living expenses (79.9 per cent) during these hospital stays. Some 19.5 per cent of respondents had to bear the costs for their living expenses themselves. Sick pay decreased from 44.7 per cent of factories in 2003 to 39.5 per cent in 2007 and 29.2 per cent in 2010. It might be surmised that the financial crisis had an impact on employers' payment behaviour. In any case, however, the loss of earnings during the period of inability to work would also have an effect on family budgets.

²⁷ Because the hospitals require confirmation of payment before accepting patients and because the data source is based on "hospital visit forms", it can be assumed that such a confirmation of payment was given for all of the respondents. The database is biased insofar as it does not provide information on cases where migrant workers with work-related accidents did not enter hospital (because of either minor injuries or missing confirmation of payment).

²⁸ Referring to the medical expenses between the time of the injury and the visit/interview in the hospital.

²⁹ For more detailed information on respondents' wages, please see table D in the appendix.

Table 8: Paying for Medical Costs and Living Expenses

Payers	Medical Costs		Living Expenses	
	Frequency	Per cent	Frequency	Per cent
Factory	9,356	96.19	7,830	79.87
Accident victim him/herself	268	2.76	1,909	19.47
Both sides	43	0.44	50	0.51
Others (responsible party, donation, insurance)	60	0.61	14	0.03
<i>Total number of valid forms</i>	9,727	100.00	9,803	100.00

The level of medical expenses affected payment behaviour by the factories: the higher the costs and the longer the duration of treatment, the more likely it was for the factory to pay only part of the costs or to stop paying altogether. Therefore it is not surprising that legal conflicts over medical costs arose more frequently with regard to later stages of treatment than treatment right after accidents occurred. Although accident victims might have received first aid in time, they still faced problems with insufficient or inappropriate follow-up treatment, leading to a “secondary injury” (Ye et al. 2003). A study in Shijie Town, Dongguan City, also found a lack of follow-up treatment among injured workers. It showed that patients often requested early discharge from clinics and that there was a low replantation rate for fingers, which in turn led to an increase in the incidence of complications and affected the recovery of bodily functions. The study also pointed out that most of the expenses for early treatment were provided by the employers. But in some injury cases there were also payment disputes over the later stages of treatment (Ye et al. 2003).

Evidence of an employment relationship is a precondition for determining the work-relatedness of an injury and the payment of medical costs by the factory side. A work contract may thus be very helpful if an accident should occur. The percentage of interviewees who had signed a contract increased from 32.2 (in 2003) to 59.8 (in 2010). From the in-depth interviews we learned about cases in which injured workers had to stay in hospital although their employers might not necessarily assume the costs. Ms. L. (interview 6) was injured in May 2007 only one month after she started working as a cleaner in a plastic factory. While cleaning a warehouse, she was hit on the hip by falling goods and lost consciousness.

When I was in the hospital, and woke up after losing consciousness, they called my family at first and my relatives came. Then, and I don't know exactly what was going on, they called the company... who probably then said it's nothing and I should leave the hospital. We didn't understand that either... The other patients could see that I couldn't get up from a sitting position... Around evening someone from the company came who is responsible for paying the wages, not the boss, but someone else in charge. He said if you're supposed to leave the hospital but aren't going... then you'll have to pay for it yourself.. But I said I can't stand up, I can't walk, how am I supposed to leave the hospital?... That day they [the company] brought me home, and afterwards didn't concern themselves with me anymore.

Ms. L.'s boss denied responsibility afterwards. So she had x-rays taken of her injuries at her own cost, but this didn't soften the company's stance either. Ms. L. and her family borrowed money to pay for her treatment. The company, with which she did not have a contract, then denied knowing her. With the help of an NGO that acts on behalf of migrant workers, Ms. L. was able to gather the requisite paperwork and sue her boss to assume the medical costs. He was finally ordered to pay 50,000 Yuan which Ms. L. otherwise had to pay herself. But despite this decision, the boss has not paid. “He absolutely refuses to admit that I worked at his company, and thinks he can get out of it

this way. So I then called the arbitration committee (*zhongcai*) at the labour bureau—I tell you, it’s been going on like this for years.” The case of Ms. L shows the importance of having a contract with the company in the event of an accident. Otherwise it can be much more difficult to prove the existence of an employment relationship and to demand payment of medical costs by the employer.

Daily care

In China family members usually take care of the patients at hospitals. But if a patient is away from home and several members of a family are working as migrant workers in different cities, it becomes more difficult for the family to organize care. From the database we can see that around one-third of the respondents were without care providers (table 9). The percentage of accident victims without care providers increased from 17.9 in 2003 to 34.4 in 2010. On average 38.5 per cent of the workers who filled out hospital visit forms had been looked after by co-workers, 25.6 by relatives, 11.5 by hospital care workers and 24.3 per cent had no one to care for them during their stay in hospital.

Table 9: Accident Victims without Care-Providers during Their Stay in Hospital (2003–2010, per cent)

Situation in hospital (year)	2003	2004	2005	2006	2007	2008	2009	2010
Accident victims without care-providers	17.9	23.7	20.5	35.4	34.68	33.88	32.84	34.38

With rising mobility and higher numbers of injured migrant workers who cannot arrange for family members or co-workers to take care of them, the need to provide and fund care services for work injuries has become more urgent. Even in cases where family members do care for hospital patients, this may cause additional problems. For example, Mr. L. had to be treated as an in-patient for around one month and was cared for during this time by his wife who was working at the same factory. The employer interpreted the behaviour of Mr. L’s wife as staying away from work and terminated her labour contract. Mr. L. said: “My wife is also engaged in a lawsuit with them. They terminated my wife’s labour contract because she was taking care of me in hospital.”

Questions such as who is responsible for assuming the costs for treatment, meals and daily care at hospitals as well as compensation for missing wages are covered in principle by the Work-Related Injury Insurance Regulations that went into effect in 2004, but there is still room for improvement in practical terms.

Injury Insurance and Health Compensation: Inadequate Information and Insufficient Law Enforcement

China’s Work-Related Injury Insurance Regulations (2004) represented a major step not only for migrant workers which it explicitly covered, but also for their employers who, by paying for accident insurance, could prevent legal action by injured workers. According to these regulations, workers are entitled to insurance benefits without having to pay insurance premiums. The number of employees covered under these regulations increased from 45 million in 2004 to 161 million in 2010, including nearly 63 million migrant workers (Business Focus 2011:50).

The percentage of respondents who had social insurance rose from 47.11 in 2003 to 58.77 in 2010. Surprisingly, this figure is considerably higher than that for migrant

workers in general, of whom only 23.6 per cent had accident insurance in 2011.³⁰ Even given that the eastern provinces of China, which include the PRD, showed a somewhat higher figure of migrant workers with accident insurance at 27 per cent, this difference is still considerable.

One reason could lie in the fact that the respondents come from a sector with a higher risk of accident, and thus that a higher percentage of workers in general in this sector have insurance. Another reason however could be that some enterprises seek to save costs by insuring only a small number of their employees. If an accident occurs, the enterprise sends the victim to hospital under the name of an insured person, and then cheats the insurance company by asking for payment. On receiving the money, it then pays the hospital for the accident victim (see Gransow 2010:19).³¹ This type of practice could explain the disproportionate share of insured persons shown by the hospital visit forms. A third reason could lie in respondents themselves being unsure of their insurance status. Some 14 per cent of respondents answered the question of whether they had social insurance with “don’t know”.³² In certain cases workers assume they are insured whereas in fact their insurance has expired because companies purchase only short-term policies. This happened to Mr. Y. from Jiangxi (interview 1) who injured his hand at a furniture factory in 2008 and described his situation as follows:

First they [the company] also paid for insurance. But it had expired by the time of my injury, and hadn’t been renewed. They said that we had all come to the company via relatives, all from the same village, and all with very similar names just with different last characters. So some names got mixed up, and mine was overlooked. I don’t know whether it was a collective or individual insurance. We’ve never seen the documents for it.

When injury regulations are instituted and complied with, this eliminates three areas of potential problems, namely, the definition of work-related accidents, the compensation standards for employees, and the application procedure for the determination of work-related injuries. The application procedure in particular has been criticized for requiring considerable knowledge, paperwork and time. Even if migrants are becoming more aware of their rights they are not always sure of the details. Many workers who get injured do not know which government agency they should turn to.³³ “The legal process to deal with work-related injury takes so long in China, because of the time-consuming task of applying for evidence. At least 10 items are needed, including an official diagnosis, the work-related injury identification letter, an assessment of the ability to work and a lawsuit” (Wang 2011:20). In addition, there are currently only a few institutions certified to determine the grade of labour ability after an accident. Compensation claims by employees can only be made after the degree of their disability is officially assessed and certified by the local government’s appraisal committee (Brown 2010:120), which contributes to prolonging the procedure.³⁴

³⁰ Participation in other types of insurance such as retirement (13.9 per cent) or health (16.7 per cent) was much lower.

³¹ These types of “cost-saving” strategies include purchasing commercial “employers’ liability insurance” instead of the prescribed accident insurance. Presented to workers as accident insurance (sometimes with an illegal solicitation of financial participation by workers) this type of insurance favours the companies over the victims in accident cases. In the event of an accident, the company uses part of the insurance compensation to settle a private agreement on damages with the victim or pays the victim’s hospital costs and then retains the rest of the sum for itself.

³² For more details on respondents’ social insurance, please refer to table E in the appendix.

³³ Chang Kai, Professor of Labour Relations at Renmin University Beijing, quoted in Chen and Yan (2011:4).

³⁴ In 2009 a migrant worker who had developed pneumoconiosis but was refused an occupational diagnosis demanded that doctors open his chest to prove his claim. He finally received compensation

All three of these problematic areas were addressed in the new version of the work-related injury insurance which went into effect in 2011 as part of the new Social Insurance Law. This consisted of broadening the definition of work-related injuries (specifically to include more institutions as well as injuries while travelling to and from work), increasing compensation standards for employees, and simplifying the application procedure and optimizing the dispute resolution process for clear-cut cases by cancelling an administrative review which preceded the judicial review (Business Focus 2011:50). Nevertheless, there remains a general problem of insufficient information about the new law and its contents. As a result, the law has thus far been insufficiently applied. For example, only a few accident victims know about the system of advance payment if the employer does not pay which is part of the new Social Insurance Law.³⁵ According to a survey undertaken by the Beijing Yilian Legal Aid and Study Center (Beijing Yilian laodongfa yuanzhu yu yanjiu zhongxin 2012), one year after the Social Insurance Law came into effect, 78.6 per cent of the accident victims interviewed had not heard about the law and 91.8 per cent of them had no idea about the advance payment system. Another example is lack of knowledge about rehabilitation programmes for work-related accident victims. Many migrant workers do not know either about the importance of rehabilitation programmes to restore their capacity for work as fast and comprehensively as possible or about the State's free rehabilitation services. But even if they know, migrant workers who have been injured on the job and are eligible for a free rehabilitation programme do not necessarily take up the offer. Because the severity of industrial injuries is only evaluated after treatment, they fear that entering rehabilitation could delay or reduce the amount of compensation if they recover too well (Li 2011:6). In addition, in contrast to the period of medical treatment during which an injured worker is entitled to recovery repayment, this is not the case for rehabilitation care (Jing 2010:157).

Without professional counselling and assistance from labour administrations, trade unions, law firms or NGOs, migrant workers do not know how to accomplish all of this. As Mr. Y. (interview 1, p.5) says:

Most of them [his co-workers] have no idea [of compensation], myself included, I don't understand it either. I only know that after my injury, the company has to pay. There were 6 or 7 people before me, they didn't even try. One was about to, he had lost 4 whole fingers, he didn't see a single fen, and then he left. What should he have done, the company gave him nothing. People don't talk about these things openly. I heard that the company supposedly gave him 10,000 Yuan, others say that he got nothing. Those are internal secrets, we can't really know them. At any rate, whatever he got was for the medical costs, not like me; I'm filing a suit, it's public, whereas he did it in private.

The official trade unions could play a much more active role here. According to Paragraph 2, Article 17 of the Work-Related Injury Insurance Regulations (2004), trade

from his employer after this dramatic action. Migrant singer Sun Heng dedicated a song called "Open my chest, check my lung" to Zhang Haichao and his desperate, yet courageous action. Zhang later became an activist fighting for migrant workers in similar situations.

³⁵ According to the Social Insurance Law (2011) the insurance authority now provides advance payment if the employer does not pay. Article 41 reads "If the employing entity in which the worker works does not pay the work-related injury insurance premium in accordance with the law and a work-related accident that causes injury occurs, the employing entity shall pay the work-related injury insurance benefit. If the employing entity refuses to make the payment, the payment shall first be made from the work-related injury insurance fund." www.china.com.cn/policy/txt/2010-10/29/content_21225907_4.htm; English translation: www.bycpa.com/html/news/20116/1585.html

union organizations have the right to apply for determination of work-related injuries, but from the in-depth interviews we heard less optimistic accounts of support from trade unions for work-related injuries. Ms. W. from Guizhou (interview 12) who injured her hand in a hat factory, says: “There probably were trade unions before I came here. But [no longer] since around 2008, I’ve heard, because other people got injured before I did, who then went to the trade unions for advice, but that brought a lot of trouble—after all that, the trade union at the site was then disbanded.” Injured migrant workers are more apt to receive support from migrant worker NGOs, which have arisen in the PRD since the mid-1990s.³⁶ The NGOs offer a place to go, information, psychological counselling, legal counselling and legal support. Numerous founders and directors of these organizations come themselves from a migrant worker context and some of them have been injured themselves, as well as the majority of their volunteer staff who pay regular visits to injured workers in hospitals and provide them with informational materials. The work of these grassroots organizations is especially helpful in meeting the concerns of injured or ill migrant workers, although the organizations need more official support in order to provide better service and to organize themselves more professionally.

After Work Injuries: Returning Home or Staying in the City?

After being released from hospital, accident victims have to decide whether to stay in the city or to return home for shorter or longer periods of time. Responses at the in-depth interviews reveal reasons and motives for why migrant workers stay in the city after suffering a work-related accident instead of returning to the countryside. First of all, most accident victims need first-aid help and have to be treated at a hospital close to the place where the accident happened. In addition, there are at least five reasons why migrant workers do not return home after a work-related injury.

- i. *Preference for advanced medical treatment in the city.* For Mr. T. from Jiangxi (interview 9) who injured his hand in a printing machine, the main argument for not going back home is the more advanced medical treatment in Guangzhou city. “[I didn’t think of going back home when I had the hand injury], because down there, we don’t have the technique there; I tried to survive here in Guangzhou city. Back home, I imagine they would just have amputated my hand!”
- ii. *Regained ability to work* (even if more limited than before). As long as their ability to work is not seriously impaired, nothing changes in the migrant workers’ economic motivation to remain in the city and earn money. Because injuries generally cause them to miss work and lose earnings, in many cases they face even greater economic pressure than before the accident.
- iii. *Support from other family members in the city.* Other family members who are earning money in the same city can support the accident victim during the time of his/her recovery and therefore enable him/her to stay in the city.
- iv. *Ongoing litigation.* In case of ongoing litigation regarding, for example, compensation payment, the accident victim might want to stay in the city in order not to miss any action that might be required on his/her side and to help see it through to the best possible conclusion.
- v. *Debts back home after borrowing money to cover medical treatment.* Financial difficulties caused by an accident at work if medical costs were not assumed by the employer can be the reason for not returning home, whether for fear of

³⁶ The estimated number of migrant worker NGOs in the PRD is around 25–30 for 2007 (He and Huang 2008:509), but the number is difficult to determine because some disguise their identity or do not register. The number also depends on whether the different offices of a single migrant worker NGO are counted as one organization or several.

losing face on appearing empty-handed at her family home as in the case of Ms. J. (interview 17), or whether out of reluctance to return to her village without being able to pay back the money she borrowed to cover the treatment costs as in the case of Ms. L. (interview 6). Ms. J. from Chongqing, who works in shoe production in Guangzhou (and who injured her hand there), is ashamed to return without money and gifts to her home town, where the grandparents look after her daughter. “After I hurt my hand, I could not earn any money. Every fen my husband earned over the last half year had to be spent for this [medical treatment]. Now we don’t have one fen left—how should we go home? How could we visit the elderly [and ask them for support]?” In the case of Ms. L. her employer was ordered by a court to pay the hospital costs, but has yet to accept the decision. “The medical treatment cost 50,000 Yuan, all of which I borrowed from [people in] the village, and under these circumstances I don’t dare to return! Of course they expect me to pay back the money!”

Because our interviews were held only with accident victims who stayed in the city after being injured, the resulting perspective may be one-sided. To compensate for this limitation we looked up interviews³⁷ with injured migrant workers who returned home to villages in Hubei and Sichuan provinces after having work-related accidents in cities where they were earning money.³⁸ This material suggests that the main reasons for returning home are a considerable or even complete loss of the ability to work (including not only physical injuries or diseases but also mental conditions), high medical fees and lack of daily care in the city. But treatment at home means a heavy burden in terms of financial and care obligations for the family, too. Other family members might also go work as migrants (albeit to different cities) but then it becomes difficult to organize the care at home. Victims of work-related injuries who have to borrow money from family members may easily run up debts and even fall into abject poverty. Regarding the financial risks faced by victims of work-related accidents, the NCMS provides only very limited support. Among the injured migrants who returned home the group that had lost its ability to work and needed to be cared for by elderly parents can be seen as particularly high-risk. In general it seems that injured workers stay at home only until they recover and until they regain their ability to work (normally a couple of months or so), and then they go out for work again. It also happens (mainly among the younger generations) that accident victims return home but then go back to the city because of discrimination as disabled persons and/or because they had already become adjusted to city life.

Regardless of whether they stay in the city or return home, injured migrants are confronted with simultaneous physical, psychological and financial challenges. In some cases, accidents lead to long-term limitations in their capacity for work, so the main focus should be on restoring their work ability including the treatment and rehabilitation programmes that can help achieve this goal. Physical trauma may be accompanied by increased psychological strain. The necessary medical treatment might be too expensive, but cheaper treatment might not be effective; self-respect might decline and the sense of being a burden on the family could exacerbate psychological distress.

³⁷ We looked up several dozen interviews, including 12 in detail.

³⁸ We thank Professor Chen Chuanbo for sharing some of his interview material (gathered in villages in Hubei and Sichuan in 2007) with us to better understand the perspectives and arguments of migrants who returned home after being injured on the job. Please see also Chen and Ding (forthcoming).

It can be concluded that mainly those migrant workers who have lost their ability to work (at least to a serious degree) and/or are suffering from long-term occupational diseases and/or have to face high and unaffordable treatment expenses in the city are forced to return to their rural home towns or villages. Those who have just had accidents will normally be cared for at a hospital in the city for a while and only later decide whether to return home. Those who retain their capacity for work (even at a lower level), those who have family members who can take care of them in the city, those who have filed cases against their employers and are fighting for compensation and those who have borrowed money in their home village for paying medical costs but are not yet able to pay back their debts prefer to try to stay in the city at all costs.

Conclusions and Recommendations

To better understand work-related injuries to migrant workers not simply as isolated incidents or personal misfortune but as embedded within broader processes of economic and social transformation, institutional arrangements, and mechanisms of inclusion and exclusion, the analysis of the data focused on the causes and impacts as perceived by the injured migrant workers before, during and after the occurrence of work-related incidents. Our study of occupational injuries at manufacturing companies in the PRD shows that China's rapid economic growth is happening at the expense of migrant workers' health. This development is rooted in an economic reform process that includes at least three basic changes affecting the "social contract" of Chinese society, namely:

- i. a basic shift in migration policies that has enabled the rural labour force to shift to non-agricultural employment in cities and become the backbone of China's export-oriented economy without receiving urban citizen rights;
- ii. the enhancement of insurance techniques that redistribute social risks and relieve the state of part of its responsibilities, albeit without addressing migrants in the reform of social security and health systems; and
- iii. the commercialization of the health care sector and the emerging social security system which is organized locally and is far from addressing the needs of the migrant population.

So while the explicit incorporation of migrant workers in accident insurance programmes and the strengthening of labour law in general represent considerable progress as well as a form of social inclusion, in practical terms there are still considerable deficiencies in occupational health and safety for migrant workers. Our study focusing on occupational injuries in the manufacturing industry in the Pearl River Delta illuminates these deficiencies, which can be summarized as follows:

- The high risk of work injuries in specific areas such as the metal and furniture sectors and particularly at small-scale factories; shortcomings in factory safety management including machine failure and lack of safety equipment; lack of production safety training, long working hours and too many working days; workers' lack of safety knowledge and consciousness, and careless safety behaviour.
- Insufficient first-aid facilities at factories; unsolved situation of daily care of accident victims in hospital if no family members, friends or co-workers can provide it; underestimation of the importance of full recovery and restoration of work ability including under-utilization of rehabilitation and occupational retraining programmes.

- Faulty functioning and lack of supervision of the injury insurance system; lack of clarity on the part of migrant workers about the relevant institutions to turn to in the event of an accident; lack of clarity about the procedures for determining work-relatedness of injuries and the grade of work ability; lack of empowerment of accident victims by the official trade unions and lack of support for organizations that help injured migrant workers.

Our results match the conclusions drawn by a study of joint venture enterprises in Guangzhou in 2009 which:

- identifies deficiencies in preventive measures against occupational accidents in small and medium-sized enterprises, including marginalization of production safety and its administration;
- qualification of monitoring personnel for workplace safety which does not fit the needs of an effective prevention system;
- lack of information on safety issues in the mass media; huge gap between standards of safety knowledge and safety equipment in China compared with those in foreign countries;
- irrational safety system: after the monitoring of safe production and the monitoring of occupational health were separated, it was unclear which institution was responsible for what, and occupational health monitoring stopped at the level of laws and regulations;
- separating the prevention of occupational accidents from work injury insurance without a mutual sharing of information has turned injury insurance into a payment mechanism and caused stagnation of its preventive function (Yu et al. 2011:154, 155).

Besides identifying and confirming deficiencies in occupational health and safety for migrant workers, our results have shown that only around 60 per cent of the respondents had a labour contract and participated in social insurance, thus fulfilling the legal preconditions to gain from the occupational health and safety legislation. Our results have further illuminated (i) the complexity of risk factors involved in the occurrence of a work-related accident; (ii) the chain of effects triggered by an accident, impacting not only on the health of the accident victim, but also on the socioeconomic situation of the whole family; and (iii) the crucial importance of restoring the work ability of the accident victim and providing retraining measures as three crucial aspects from the perspective of injured migrant workers themselves.

As the types of injuries (particularly hand injuries) identified in our case study are closely related to certain industrial sectors such as metal, furniture, electronic and plastic industries typical for the export-oriented production in the PRD, it may be expected that with the restructuring of the Chinese economy toward greater domestic reliance, greater weight attached to innovation, investment in research and development, and higher qualifications for personnel and less investment in low-cost manufacturing, the incidence of this kind of work-related injuries will decrease in the future. Nevertheless, this does not mean that the deficiencies identified above need not be addressed properly.

Based on our findings, we can identify four main areas of concern for policy makers, practitioners and researchers that go beyond the regional and industrial focus of our case study.

- i. *Risk assessment and minimization, precautionary measures regarding work safety and insurance to avoid or at least minimize the risk of work injuries and occupational illnesses*

Factory safety management and work safety inspection needs to be strengthened. Work safety training should be provided by employers, labour administrations, trade unions and NGOs, particularly in the non-state industrial enterprises, not only to formally employed workers but also to informally employed workers and particularly to interns/student migrants who have replaced migrant workers in great numbers at some factories. They become injured at very young ages. Trade unions in collaboration with migrant worker NGOs could play a far more important role in explaining the necessity of precautionary measures (for example, trade unions could purchase services from third-sector NGOs). Better information is needed (on the part of labour administration) regarding the health status of employees before, during and after employment. According to a directive issued by the State Administration of Work Safety (on 5 August 2011), Chinese employers are required to keep health records for employees exposed to health hazards at their workplaces. At the beginning of their jobs, during their terms and after their contracts expire, employees should undergo health examinations. This will play an important role in settling disputes and should make the process easier. In addition, local governments will shut down manufacturers of wooden furniture, asbestos products and quartz sand as well as asbestos mines if these operations fail to meet health requirements (Chen and Yan 2011:4). As for the workers, not only better information is needed regarding injury insurance and injury compensation insurance, but more has to be done to empower them in occupational safety and health, including active participation by the workers themselves.

- ii. *Mitigating health effects after injuries have occurred, improving first aid measures and health care services; supportive measures for accident and disease victims, including their participation in rehabilitation programmes*

In factories with a high risk of occupational injuries, particularly regarding the many hand injuries, emergency rooms equipped with first aid material and staff trained in first aid should be required. After being injured, migrants would need appropriate health care services particularly during their stay in hospital. If care cannot be provided by family members, there should be other arrangements in place. To better restore the work capability and life quality of accident victims, more targeted policies and financial models need to be put in place to use rehabilitation programmes more effectively and to enable injured migrant workers to participate in retraining programmes. Because of their limited work ability, migrant workers with a history of work injuries seem to be more at risk of having further injuries.

- iii. *A sound institutional environment enabling enforcement and implementation of labour laws and work safety legislation is needed.*

The most important point is to establish a sound institutional environment enabling the implementation and enforcement of labour and work safety laws. Thus far the institutional structures governing and monitoring work safety in China have been weak and quite scattered: work safety authorities oversee

workplace conditions, health departments are responsible for diagnosing illnesses, work safety institutions and injury insurance do not share information with each other, and local labour administrations deal with workers' compensation. In addition, flaws in qualification and training for work safety administration and a lack of safety consciousness and education are making the situation worse. The trade unions are playing only a minor role with regard to law enforcement and are still not properly fulfilling their role as representatives of workers' interests, including migrant workers' interests. More efforts need to be made to monitor the new Social Insurance Law including the work-related injury insurance.

- iv. *More research is needed, utilizing official data as well as surveys by research institutions and NGOs and establishing an open data base on work injuries and occupational diseases of migrant workers.*

This is necessary to develop a more comprehensive base of evidence on the occupational health of migrant workers (including injury and illness) and to evaluate efforts (legislative and regulatory) to promote improved occupational health and safety, to increase access to services (including initial treatment, follow-up care and migrant worker compensation) and to improve insurance coverage. An open database on work injuries and occupational diseases of migrant workers should be established to ensure that researchers can address the research gap between general occupational health and safety data and research on the socioeconomic and health situation of migrant workers, and that policy makers can make evidence-based policies.

Appendix: Chinese Migrant Workers and Occupational Injuries: A Case Study of the Manufacturing Industry in the Pearl River Delta

I. “Hospital visit forms” database (additional data, Pearl River Delta)

Table A: Average Age of Injured Migrant Workers (2003–2010)

Year	Frequency	Mean age	Standard deviation
2003	798	24.77	6.56
2004	1,982	26.18	7.26
2005	719	27.13	8.20
2006	828	28.48	8.71
2007	895	29.47	9.41
2008	2,667	30.52	9.41
2009	1,055	30.97	9.62
2010	961	31.12	10.03
total	10,051	28.81	9.03

Table B: Educational Level of Injured Migrant Workers (2003–2010, per cent)

Educational level	2003	2004	2005	2006	2007	2008	2009	2010	Total
Primary school and below	9.27	10.29	13.47	12.71	17.34	13.76	14.26	15.22	13.07
Junior middle school	73.18	75.59	72.64	72.64	67.23	70.96	66.19	65.97	71.09
Technical middle school and senior middle school	17.04	13.21	13.33	14.41	14.65	14.76	18.53	17.19	15.09
Higher education	0.5	0.91	0.56	0.24	0.78	0.52	1.02	1.61	0.75
Number of valid forms	798	1,983	720	826	894	2,514	982	867	9,584

Table C: Distribution of Injured Migrant Workers by Sector (2003–2010, per cent)

Sector	2003	2004	2005	2006	2007	2008	2009	2010	Total
Metal	25.41	38.81	19.67	21.71	18.54	26.48	28.21	27.77	27.58
Furniture	12.14	18.09	20.22	20.63	22.07	15.32	11.05	11.30	16.21
Electric/electronics	13.52	13.36	6.51	7.72	7.73	6.04	7.99	8.02	8.86
Shoe	8.01	0.50	9.70	9.17	8.08	5.04	4.54	4.96	5.27
Plastic	8.26	11.14	4.99	6.51	7.17	7.04	5.72	6.44	7.59
Construction	3.50	3.23	4.57	3.86	5.12	5.31	4.73	7.50	4.70
Print (paper)	6.88	4.28	5.26	4.83	3.19	3.43	3.25	4.22	4.18
Toy	1.38	0.05	1.66	0.97	0.46	0.81	0.39	0.95	0.72
Lighting	1.75	0.25	1.11	1.57	0.57	1.85	3.45	2.01	1.50
Garment	2.88	0	3.05	1.69	1.59	2.12	2.76	2.32	1.82
Machinery	1.63	0	1.80	0.97	2.05	3.77	4.24	3.91	2.35
Others	14.64	10.28	21.47	20.39	23.44	22.79	23.67	20.59	19.22
Total	799	1,984	722	829	879	2,598	1,014	947	9,772

Table D: Average Monthly Wages for Injured Migrant Workers Compared to Migrant Workers and Urban Workers and Employees in the PRD (Yuan, 2003–2010)

Year	Average Monthly Wages (Yuan)		
	Injured Migrant Workers in PRD	Migrant Workers in PRD*	Urban Workers and Employees in PRD**
2003	767.62	1,006	1665.50
2004	921.02	1,072	1843.00
2005	1163.98	1,067	1996.58
2006	1233.00	1,140	2182.17
2007	1373.36	1,230	2453.58
2008	1653.30	1,521	2759.16
2009	1788.76	1,608	3029.58
2010	2078.15	1,917	3363.17

Sources: *Wan, Sun (2011); **Guangdong Statistical Yearbook 2011.

Table E: Rate of Participation in Social Insurance (per cent)

Social Insurance	2003	2004	2005	2006	2007	2008	2009	2010	Total
Participate	47.11	49.7	50.56	45.95	50.11	51.58	55.7	58.77	51.28
Don't participate	39.45	37.59	38.02	44.62	34.12	32.19	28.53	27.38	34.68
Don't know	13.44	12.71	11.42	9.43	15.77	16.23	15.77	13.85	14.04
Number of valid forms	796	1,982	718	827	894	2,588	1,027	946	9,778

II. In-depth interviews (Guangzhou)

Table F: Demographic Characteristics of Migrant Workers in Manufacturing Firms in Guangzhou (In-depth interviews December 2009-April 2010)

Interview No.	Work Site*	Sex	Age	Education	Work-related Injury/Problem	Place of Origin
1	Billiard accessories factory	M	36	Junior middle school (finished)	Hand injury	Jiangxi
2	Plastic film factory	M	35	Junior middle school (unfinished)	Hand injury	Hunan
3	Furniture factory	M/F	~45–50	n.k.	Payment dispute	Jiangxi
4	Metal-fitting factory	M	n.k.	n.k.	Head injury	Yunnan
5	Metal-fitting factory	M	37/38	n.k.	Hand injury	Guangdong
6	Metal-fitting and plastic factory	F	~ 50	n.k.	Waist injury	Jiangxi
7	Concrete factory	M	28	Senior middle school (unfinished)	Waist injury	Sichuan
8	Printing factory	M	25	technical secondary school (finished)	Payment dispute	Sichuan
9	Printing factory	M	n.k.	technical secondary school (finished)	Hand injury	Jiangxi
10	Printing factory	M	20	technical secondary school (unfinished)	Hand injury	Guangdong
11	Furniture factory	M	45	n.k.	Hand injury	Hunan
12	Hat factory	F	27	n.k.	Hand injury	Guizhou
13	Luggage factory	M	n.k.	technical secondary school	Hand injury	Guangdong
14	Garment factory	M	37	Senior middle school (unfinished)	Payment dispute	Fujian
15	Machinery production	M	43	Junior middle school (finished)	Foot injury	Yunnan
16	Car repair station	M	40	n.k.	Head injury	Hunan
17	Shoe factory	F	n.k.	n.k.	Hand injury	Chongqing
18	Metal-fitting factory	M	23	n.k.	Hand injury	Hubei
19	Kitchen unit factory	M/M	19	technical secondary school (finished)	Hand injury	Guangdong
20	Electric appliance factory	M	26	Junior middle school	Hand injury	Sichuan
21	Pipe factory	M	29	n.k.	Payment dispute	Sichuan
22	Leather product factory	M	20	Technical secondary school (finished)	Payment dispute	Jiangxi

Notes: M = Male; F = Female; n.k. = not known.

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