Bangladesh

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International Labour Organization

Supporting Document

Health Feasibility Study: Health Care, Disability Assessment and Rehabilitation Services

Global Employment Injury Programme

Enterprises Department

ILO Country Office for Bangladesh

Bangladesh

Supporting Document

Health Feasibility Study: Health Care, Disability Assessment and Rehabilitation Services

ILO/Global Employment Injury Programme (ILO/GEIP)
Enterprises Department, Geneva

ILO Country Office for Bangladesh

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INTRODUCTION

The health feasibility study concerns the provision of health care services to injured workers, the assessment of permanent disability and its impact on loss of earnings capacity in Bangladesh as well as the provision of physical and vocational rehabilitation services.

This study is comprised of four documents:

- Bangladesh Health Care, Disability Assessment and Rehabilitation Services Study
- Seminar on Health Care and Benefit Packages for Injured Workers due to Work Related Injuries and Diseases
- Bangladesh Health Care, Disability Assessment and Rehabilitation Services: Comparative Case Studies
- Report on the Framework on Compliance and Linkages to Existing Mechanisms for Labour Inspection

This study is part of a collection of supporting document for:

"ILO Technical Recommendations on the Feasibility Assessment of an Employment Injury Insurance Scheme in Bangladesh"

Supporting documents:

1) *Preliminary feasibility study for the introduction of a National Employment Injury Social Insurance System*
2) ***Health feasibility study: Health Care, Disability Assessment and Rehabilitation Services (current document)***
3) *A proposed legal framework for a Bangladesh Employment Injury Insurance scheme*
4) *Main Findings of Work-Related Injuries in Manufacturing and Service Sectors in Bangladesh with a View to Implement an Employment Injury Compensation Scheme*
5) *Main Findings of Work-Related Injuries: the Case of Readymade Garment Sector of Bangladesh with a View to Implement an Employment Injury Compensation Scheme*
6) *Cost estimate of the Proposed Employment Injury Compensation Scheme in Bangladesh*

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1 BANGLADESH HEALTH REPORT, DISABILITY ASSESSMENT AND REHABILITATION SERVICES STUDY

Modified version of the original report, where the accompanying PowerPoint of the seminar on health care and the case studies were removed. No other changes were made to the document.

Bangladesh
Health Care, Disability Assessment and Rehabilitation Services

01/07/2017

Jacques Pelletier, md
Salauddin Ahmed Sharif, BOT

International Labour Organization

The International Labour organization Country Office Dhaka (ILO CO) is conducting a feasibility study for the Implementation of an Employment Injury Insurance Scheme in Bangladesh starting with the Ready-Made Garments (RMG) Sector with its further extension to all sectors. An important part of this feasibility study concerns the provision of health care services to the injured workers, the assessment of permanent disability and its impact on loss of earnings capacity in the Bangladesh context as well as the provision of physical and vocational rehabilitation services.

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MAIN RECOMMENDATIONS

[1] *List of Occupational Diseases* (revised 2010): Identification and recognition of occupational diseases: Criteria for incorporating diseases in the ILO list of occupational diseases. Occupational Safety and Health Series 74, http://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---safework/documents/publication/wcms_150323.pdf
[2] http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C121

- **OUTPUT 1- Formation of the Committee on Health Care, Disability Assessment and Rehabilitation Services.**
    - Develop Terms of Reference of the Committee on Health Care, Disability Assessment and Rehabilitation Services.
    - Form the committee by identifying members of the committee under guidance from the Ministry of Labour and Employment (MoLE).
    - Develop relevant benefit packages in consultation with the committee and endorse the benefit packages.

DEVELOP TERMS OF REFERENCE OF THE COMMITTEE ON HEALTH CARE, DISABILITY ASSESSMENT AND REHABILITATION SERVICES.

While seeking to remain consistent with the policies and guidelines of the *ILO Convention 121*, the terms of reference of this committee are the followings:

PRESENTING A SHORT OVERVIEW OF CURRENT SITUATION
MAPPING OF LOCAL CAPACITIES FOR HEALTH CARE AND REHABILITATION SERVICES
DEVELOPMENT OF A DISABILITY ASSESSMENT TOOL (DAT)
RECOMMENDATIONS ON THE DELIVERY OF HEALTHCARE AND REHABILITATION SERVICES

Upon endorsement by the Ministry of Labour and Employment, a series of meeting/workshops will be held during the month of July and August 2017 and finalize the benefit packages. The specific dates of committee meeting will be determined and notified in consultation with the stakeholders.

A first meeting was scheduled in June. This was postponed due to Ramadan and the festivities of Eid ul-Fitr. This meeting of presentations and discussions was held on 17 July 2017 at the premises of the ILO.

List of attendances:
Dr. Syed Abul Ehsan (DIFE, MoLE), Mr. Mahfuzur Rahman Bhuiyan (DIFE, MoLE), Mr. Md Zakir Hossain Chowdhury (MoLE), Ms. Zakia Sultana (MoHFW), Mr. Shaquib Quoreshi (BFE), Mr. Rafiqul Islam (BGMEA), Ms. Farzana Yasmin (BKMEA), Mr. Chowdhury Ashiqul Alam (NCCWE), Mr. Razequzzaman Ratan (NCCWE), Mr. Quamrul Ahsan (NCCWE), Mr. Towhidur Rahman (IBC), Mr. Nazmul Bari (CDD), Mr. Hasnaen Fatme (CDD), Advocate Nazrul (BILS), Ms. Bithun Tasnuva Mazid (BRAC), Dr. Md Anisuzzaman (GIZ), Mr. Firoz Alam (GIZ), Mr. Krishno Sen (TIWMC), Mr. Iqbal Hossain (BIDS), Ms. Tasmin Khanam Alis (LWF,MoLE), MS Shamina Johan (BGEMA), Md Shalidullah Badal (IBC), M. Rezaul Haque (GSK), Mr Manzurul Karim (CRP), Mr. Md Nazrul Islam (BILS), Mr Saluddin Shapan (IBC), Mr Gagan Rajdiandan (ILO), Dr Rajan Talukder (DIFE, MoLE).

Discussion / Comments

The presentations were followed by an open discussion among the representatives of different stakeholders from government, NGOs, trade unions, employers' federation and research agencies. The discussion highlighted on issues of experience of working with injured workers from Rana Plaza Collapse (RPC), necessity of return to work (RtW) for the affected workers, consideration of psychological aspect of workers, prevention measures, management of the compensation fund, compensation versus contribution approach, quality of rehabilitation services and consideration of occupational income loss rather than impairment focus onetime payment. The major points of discussion in line with the scope of the EII study are stated below:

- As per CRP intervention for the victims of RPC, medical care and lump sum payment mostly didn't address the reintegration, whereas some form RtW could have been planned. Another aspect of such compensation is management of the entire system with well-planned coordination mechanism among the lead agency of the government, stipulated service providers and employers/workers forums.
- BRAC experiences of psychological stress of injured workers hardly addressed by the current trends of compensation. Unique identification through national ID card of workers was important to properly track and administer the process of insurance scheme.
- Charity versus rights concept was raised, as the terms 'compensation' from charity point of view and on the other hand, the term 'contribution' is from rights perspective.
- Government personnel stated that the MoLE has 30 medical care centers dedicated to the workers' healthcare that can be used for treatment of occupational disease/injury.
- One of the health and rehabilitation service providers explained that why assessment of occupational income loss needs to be comprehensive including aspects of physical impairments, functional, psychological and social factors.
- Trade union representatives gave importance of healthy workplace to prevent occupational injury and diseases, and justifiable benefit packages financing from the workers and employers contributing fund. The payment will be then easily charged to the fund through existing mechanism.
- Realization of Trust for Injured Workers Medical Care (TIWMC) was to have such Disability Assessment Tools (DAT) very simple and measurable that can be used by a team of relevant professionals/service providers. Existing payment method by the providers had been useful for covering the cost of treatment/medical care.
- A trade union representative suggested that freedom of speech was to be ensured first for workers, so that the workers views, satisfaction and concerns are reflected in the practice of compensation benefit packages.
- GIZ gave emphasis on the tripartite approach to introduce or manage the EII incorporating RTW program in it. In this case the government has to take the lead.

- **OUTPUT 2- Develop a Disability Assessment Tool (DAT) for Bangladesh:**
    - Develop disability assessment criteria and methodologies used by employment insurance schemes in some neighbour developing countries visited by Bangladesh: South Korea, Malaysia and Cambodia, and with reference to at least one developed country.
    - Analyze the disability assessment tool used in Rana Plaza Claims Administration and "Bangladesh Scale" developed by Primark. Assess experience of stakeholders involved in Rana Plaza and Tazreen victims' medical assessments.
    - Develop disability assessment criteria and a methodology adapted to the Bangladesh context, and more specifically considering the employability of workers with permanent physical and psychological limitations.
    - Propose a training framework for the medical doctors and others health professionals on the use of DAT.
    - Develop a tool which will allow a trained user to:
        - measure the degree of Permanent damage to bodily and mental integrity (PDBMI);
        - Based on the assessed PDBMI, measure the loss of earnings capacity, expressed as a percentage of earnings prior to the injury.

DEVELOP DISABILITY ASSESSEMENT CRITERIA AND METHODOLOGIES USED BY EMPLOYMENT INSURANCE SCHEME IN SOME NEIGHBOUR DEVELOPING COUNTRIES.

Bangladesh Current situation:

The current situation in Bangladesh falls within the specifications set out in the Bangladesh Labor Act 2006[3] (BLA 2006) and updated by a regulation in 2015[4] .These documents include a list of diseases notifiable to the authorities (with the adjunction of a list of occupational diseases). Refer to sections 82 and 83 of BLA 2006 and to its Second and Third Schedules.

Chapter XII of the Act describes the obligations of the employer to compensate workers who are victims of accidents at work. Sections 150 to 174 contain, inter alia, specifications on enforcement mechanisms, medical care and follow-up, the role of the Labor Court in case records and appeals mechanisms. Note that in order to access the specifications of the law, the incident must have a consequence resulting in a withdrawal from work for at least 3 days.

Two other Schedules at the end of the 2006 BLA are of interest. The Fifth, which describes compensation amounts in some cases and the First describes the list of injuries deemed to result in partial permanent handicaps.

[3] https://resource.ogrlegal.com/official-english-translation-bangladesh-labour-act-2006/

[4] Gazette Notification **S.R.O. No. 291-Law/2015**. *The Bangladesh Gazette Additional Issue*, Published by the Authority Tuesday, September 15/2015. The People's Republic of Bangladesh Ministry of Labour and Employment. - In exercise of the power conferred by Section 351 of the Bangladesh Labour Act, 2006 (Act Nº. 42)

THE SCHEDULES
THE FIRST SCHEDULE
[see sections 2(1), (67) and section 151]

LIST OF INJURIES DEEMED TO RESULT IN PERMANENT PARTIAL DISABLEMENT

Serial No.	Description of injury	Percentage of loss of earning capacity
1	2	3
1.	Loss of both hands or amputation from higher parts	100
2.	Loss of 1 (one) hand or one leg	100
3.	Loss of sight of both eyes to such an extent as to render the claimant unable to perform any work for which eye-sight is essential	100
4.	Amputation of both legs or thighs, or amputation of one leg or thigh and loss of any leg	100
5.	Severe facial disfigurement	100
6.	Absolute deafness	100
	Amputation cases-upper limbs (either arm)	
7.	Amputation upto shoulder joint	80
8.	Amputation below shoulder with stump less than 20 centimetres from tip of acromion	70
9.	Amputation from 20 centimetres from tip of acromion to less than 11 centimetres below tip of olecranon	60
10.	Loss of a hand or of the thumb and four fingers of one hand or amputation from 20 centimetres below tip of olecranon	60
11.	Loss of thumb	30
12.	Loss of thumb and its metacarpal bone	30
13.	Loss of 4 (four) fingers of 1 (one) hand	50
14.	Loss of 3 (three) fingers of 1 (one) hand	30
15.	Loss of 2 (two) fingers of 1 (one) hand	20
16.	Loss of terminal phalanx of thumb	10
	Amputation cases-lower limbs	
17.	Amputation of both feet	90
18.	Amputation through both feet proximal to the metatarso-phalangeal joint	80
19.	Loss of all toes of both feet through the metatarso-phalangeal joint	40
20.	Loss of all toes of both feet from proximal to the proximal inter-phalangeal joint	30
21.	Loss of all toes of both feet from distal to the proximal inter-phalangeal joint	20
22.	Amputation from lower part of the hip	90
23.	Amputation from lower part of the hip with stump exceeding 12.5 centimetres measured from tip of great trenchanter, but not beyond middle thigh	80
24.	Amputation from lower part of the hip with stump not exceeding 12.5 centimetres measured from tip of great trenchanter	70
25.	Amputation from middle thigh to 9 centimetres below knee	60
26.	Amputation below knee with stump exceeding 9 centimetres but not exceeding 12.5 centimetres	50
27.	Amputation below knee with stump exceeding 12.5 centimetres	40
28.	Amputation of 1 (one) foot resulting in end-bearing	30
29.	Amputation of one foot from proximal to the metatarso-phalangeal joint	30
30.	Loss of all toes of 1 (one) foot through the metatarso-phalangeal joint	20
	Other injuries	
31.	Loss of 1 (one) eye, without any complications, the other being normal	40
32.	Loss of vision of 1 (one) eye, without any complications or disfigurement of eye-ball, the other being normal	30
	Loss of fingers of right or left hand (Index finger)	
33.	Whole	14
34.	2 (two) phalanges	11
35.	1 (one) phalanx of finger	9
36.	Guillotine amputation of tip without loss of bone	5
	(Middle finger)	
37.	Whole	12
38.	2 (two) phalanges	9
39.	1 (one) phalanx	7
40.	Guillotine amputation of tip without loss of bone	5
	(Ring or little finger)	
41.	Whole	7
42.	2 (two) phalanges	6
43.	1 (one) phalanx	5
44.	Guillotine amputation of tip without loss of bone	5
	(Toes of right or left foot (great toe))	
45.	Through metatarso-phalangeal joint	10
46.	Part, with some loss of bone	3
	(Any other toe)	
47.	Through metatarso-phalangeal joint	3
48.	Part, with some loss of bone	2
	(2 (two) toes of one foot excluding great toe)	
49.	Through metatarso-phalangeal joint	5
50.	Part, with some loss of bone	2
	(3 (three) toes of 1 (one) foot, excluding great toe)	
51.	Through metatarso-phalangeal joint	6
52.	Part, with some loss of bone	3
	(4 (four) toes of 1 (one) foot, excluding great toe)	
53.	Through metatarso-phalangeal joint	9
54.	Part, with some loss of bone	5

Review of exposure visits to best practices in South Korea, Cambodia, Quebec and Malaysia clearly indicates that there is every possibility of replication of practice of Cambodia and Malaysia – countries from similar socio-economic background. The major differences are:

Social Insurance versus Employer Liabilities: The compensation to the injured workers in Bangladesh is considered as liabilities of the employers. On the other hand, Cambodia and Malaysia takes it under social insurance protection of the workers.

Lump sum: The term 'lump sum' for different level of disabilities and survivor benefits are indicated by estimated amount for onetime payment, whereas in other two countries make provision of continuing financial compensation and rehabilitation facilities.

Degree of Disability: In Bangladesh degree of disability is not defined and weighted for the determining the value of occupational loss or inability. Thus, the lump sum onetime monitory compensation is replaced instead of justifiable benefit package with introducing weight of disability degree.

Disability Assessment Tools (DAT): DAT is considered to be in terms of determination of degree of disability focusing the activity limitation in light of International Classification of Functioning, Disability and Health (ICF), particularly WHO Disability Assessment Schedule 2.0.

A more complete comparison of the practices of the different countries is published in the companion document: "Bangladesh: Health Care, Disability Assessment and Rehabilitation Services: Comparative Case Study".

ANALYSE THE DISABILITY ASSESSMENT TOOL USED IN RANA PLAZA CLAIMS ADMINISTRATION AND "BANGLADESH SCALE" DEVELOPED BY PRIMARK.

For Rana Plaza, contractual arrangements were made with the Centre for Rehabilitation of the Paralysed (CRP) in Savar for conducting medical assessments on all the injured workers.

Founded in 1979 in response to the desperate need for services for spinal injured patients, the *Centre for the Rehabilitation of the Paralysed* has developed into an internationally respected organisation. For medical assessments, the work was done by Multi-Disciplinary Teams in CRP, comprising different members used to see rehab situation (Physician, Occupational Therapist, Physiotherapist, Psychologist, Nurse and Speech Therapist if needed). Assessment conclusions and disability scores are mainly based on two (well-known and standardized) evaluations tools:

- FIM (Functional Independence Measure)
- GAF (Global Assessment of Functioning Scale) (psycho.)

FIM and GAF are two absolute functional scales regardless of specific diagnosis, pathological or anatomical sequelae. In CRP assessments, they were never directly linked to an objective structural defect or diagnosis and do not add compensation for those losses. FIM and GAF are two scales, sticking to a large holistic approach, they do respect intention of ILO C.121 (art. 6, 14)[5], addressing incapacity for work and loss of earning capacity. In their assessments, CRP also chose to mention recommended scores according to *Bangladesh Labour Act Schedule (2006)* in cases with amputation aside FIM scores. *Labour Act* was always generously over FIM for amputees disability score, mostly because it should include a compensation for the structural defect with the loss of faculties. The *Schedule*, mentioned in this *Act*, proposes a scale as an integration of physical damages and functional impairments, giving a high percentage in disability score, presented as a proxy to loss of earning capacity, in the intention of legislator.

As an extension of lawmaker's intention, it was suggested to use *Labour Act* "analogically" in situation where a limb is still there, but could be considered as useless as amputated (ex: spinal cord injury, major deformation, nerve destruction in compartment syndrome).

CRP was one of the Institutions involved in the drafting of the *Bangladesh Scale* promoted by Primark in collaboration with researchers and some Dhaka Medical Institutions. This scale is based on the whole of *Spanish scales approved by Royal Decree 1971/1999, of 23 December, as well as the standard text published in the Official Gazette (No. 22, for Monday, January 26, 2000)* and *the Guide to the Assessment of handicap situations published by the Ministry of Labour and Social Affairs, Social Affairs Secretariat, Spanish Institute of Migration and Social Services (IMSERSO) in 2000*. Quite a high-quality document, but at the end of the consultation, CRP decided to not use this scale. The structure of the Primark Bangladesh Scale is close of the previous *Guide to the Evaluation of Permanent Disability* published by American Medical Association (5th edition). The new edition (6th) move toward a more comprehensive approach favorizing an evaluation of the global disability instead of the strict impairment.

Primark Bangladesh Scale is a very sophisticated tool, to be used by specialized and well-trained personnel. This was not well suited to mass evaluation as requested in the Rana Plaza situation. Primark could recruit another medical team to eventually proceed to around 400 workers assessments. The result of their work is not public. However, in an ILO mission to observe the work of CRP, several cases of amputation were run theoretical through Primark scale; the granting of Primark was less than with *Labour Act Schedule*. So even when correlate with Primark scale, the use of *Labour Act* was still a better grant for victims.

[5] http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO:12100:P12100_ILO_CODE:C121

DEVELOP DISABILITY ASSESSMENT CRITERIA AND A METHODOLOGY ADAPTED TO THE BANGLADESH CONTEXT.

Introduction

In recent decades, as evidence-based practice and initiatives to improve the quality of health care have grown around the world, recognition of the need to measure functional outcomes across all health care settings has also increased. Post-acute rehabilitation is one area of health care in which functional outcomes are already an established part of patient and health service evaluation. Despite this interest, there are still many unresolved issues relating to functional assessment in post-acute care. There is not a clear and commonly accepted definition of function or a clear delineation between instruments that assess functional outcomes and those that assess other health concepts.

The rehabilitation field, has long struggled with a tension between the need for comprehensive and clinically sensitive outcome instruments and the demand from the field for instruments that can be used feasibly in busy clinical settings.[6] For many years, researchers and clinicians have also struggled to chose between instruments that were of practical use but assessed a narrow range of content and were unresponsive and imprecise and instruments that were more comprehensive but excessively long and time consuming. Frustration has also occurred because no single instrument was appropriate to use across post-acute care settings. Therefore, information about how patients respond as they move from acute care to inpatient rehabilitation to ambulatory and community services has been very difficult to obtain.

Instruments assessing overlapping health and functional concepts have been developed. Those measure disability, function, activities of daily living (ADLs), activity performance, advanced activities, physical performance, health, health status, quality of life, and health-related quality of life, to name a few. To date, there is no consensus on how these terms should be used and how these terms relate to existing outcome measures.[7] To be clinically useful, outcome measures need to be portable, easy to use, and take as little time as possible. Data from functional assessments may be compromised or not collected if the response burden on clinicians or patients is too high.

The FIM (functional independence measure), currently the most widely used inpatient rehabilitation outcome measure, covers a small portion of the functional activity continuum and assesses activities in the midrange of functioning. However, it does not cover activities at the higher or lower end of the functional range. Instruments designed for inpatient populations usually cannot precisely assess activities beyond basic ADL functioning, whereas instruments designed for patients in their communities are often unable to detect changes in people with severe impairments. The FIM items also peak at the low to moderate end of the inpatient sample, indicating that they provide imprecise information for higher functioning people.[8]

The World Health Organization (WHO) has created one of the most widely accepted definition of health, as "a state of complete physical, mental, and social well-being, and not merely the absence of disease or infirmity."[9] This definition supports the idea that to fully assess health, both diseases and their functional consequences must be considered, and it has contributed to the development of conceptual schemes to classify the components of functioning and health. The International Classification of Impairments, Disabilities and Handicaps (ICIDH) is one of the most commonly used models to classify

[6] A.M. Jette, S.M. Haley:*Contempory measurement techniques for rehabilitation outcomes assessment*, Rehabil Med 2005; 37: 339–345

[7] Patrick DL, Chiang YP. *Measurement of health outcomes in treatment effectiveness evaluations: conceptual and methodological challenges*. Med Care 2000; 38(9 suppl II): II-14–II-25.

[8] Fisher WP, Jr. *Physical disability construct convergence across instruments: towards a universal metric*. J Outcome Meas 1997; 1(2):87–113.

[9] World Health Organization. Home page. Available from: http://www.who.int

function. It was released by the WHO in 1980 and revised as the International Classification of Functioning, Disability and Health (ICF) in 2001.[10]

World Health Organization's (WHO) International Classification of Functioning, Disability and Health (ICF) concepts and terminology is a basis for discussion of the application of contemporary measurement technology to rehabilitation functional outcome assessment.[11] The ICF portrays human function and decrements in functioning as the product of a dynamic interaction between various health conditions and contextual factors. The ICF identifies three levels of human functioning: functioning at the level of body or body parts, the whole person, and the whole person in their complete environment. These levels are termed: body functions and structures, activities, and participation. The ICF defines an Activity outcome as "the execution of a task or action by an individual." The ICF defines a Participation outcome as "involvement in life situations", the result of a complex relationship between a person, his or her health condition, and the person's environment.

ICF is operationalized through the WHO Disability Assessment Schedule (WHODAS 2.0). WHODAS 2.0 was developed through a collaborative international approach with the aim of developing a single generic instrument for assessing health status and disability across different cultures and settings.[12] WHODAS 2.0 covers 6 domains of functioning: cognition (understanding & communicating), mobility (moving & getting around), self-care (hygiene, dressing, eating & staying alone), getting along (interacting with other people), life activities (domestic responsibilities, leisure, work & school), participation (joining in community activities).[13] Although it is a tool that describes well the overall situation of an individual in the bio-psycho-social spheres, it is not fully adapted to the correlation of employability and earnings capacities. Distortion was visible in the evaluations of CRP workers after the Rana Plaza event.

The WHODAS 2.0 shows even so, the following interests[14]:

- A generic assessment instrument for health and disability
- Used across all diseases, including mental, neurological and addictive disorders
- Short, simple and easy to administer (5 to 20 minutes)
- Applicable in both clinical and general population settings
- A tool to produce standardized disability levels and profiles
- Applicable across cultures, in all adult populations
- Directly linked at the level of the concepts to the International Classification of Functioning, Disability and Health (ICF)

Full versions in English or Bengali can be found at: http://apps.who.int/iris/handle/10665/43974

One of the most important steps toward improving measurement is the use of a framework to organize functional content. One of such models is the enabling-disabling process, as described in the ICF of the WHO. In a formal workshop testing the comprehensiveness of the ICF checklist, experts from the three societies for physical medicine and rehabilitation of Germany, Austria and Switzerland did not identify any missing domains for the three examined indicator conditions stroke, back pain and osteoporosis.[15]

[10] World Health Organization. ICIDH-2: International Classification of Functioning, Disability and Health (final draft). Geneva, Switzerland: World Health Organization, 2001.
[11] World Health Organization. International Classification of Functioning, Disability and Health. Geneva: WHO; 2001.
[12] http://www.who.int/classifications/icf/en/ (consulted 05/2017)
[13] http://www.who.int/classifications/icf/whodasii/en/ (consulted 06/2017)
[14] Ibid
[15] Stucki G, Mueller T, Bochdansky T, Schwarz H, Smolenski U. *Is the ICIDH checklist useful for the classification of functional health in rehabilitative practice? Results of a workshop of the consensus conference of the societies of Physical Medicine and Rehabilitation of Germany, Austria and Switzerland*. Physikalische Medizin, Rehabilitationsmedizin , Kurortmedizin 2000; 10: 78 ± 85.

The ICIDH and the ICF first assess human functioning on 3 levels: the body, the individual, and within society. It now reflects better the aim to move away from classifying the "consequences of disease" to classifying "the components of health and functioning." The new model also incorporates environmental and personal factors that influence functioning[16].

The success of this classification depends on several factors. It should be put in perspective of other, potentially competing measurement approaches currently used in rehabilitation medicine. ICF serves as a globally agreed language to describe, classify and measure people's functioning and health in rehabilitation medicine and among rehabilitation practitioners. Among other considerations, the comprehensiveness of the ICF in covering relevant domains encountered in patients in need of rehabilitation, the compatibility with current measures used in rehabilitation medicine and its feasibility are critical. [17]

Distinguishing the difference between impairment and disability is imperative. One individual can be impaired significantly and have no disability, while another person can be quite disabled with only limited impairment. Accuracy in measuring disability is central to public confidence in a disability benefits system. Many current programs focus more attention on the "medically determinable physical or mental impairment" than on ways to measure "inability to do any substantial gainful activity." Many critics identify this comparative emphasis on measuring impairment over functioning as the basis for the problem in making accurate disability determinations. [18] It is therefore imperative to decide first what the direction of compensation will be: compensation for impairment, disability or a combination of the two. Over the past 30 years, we have greatly improved the breadth of measured health dimensions in outcome assessments. However, even those functional outcome instruments with excellent breadth still have problems of inadequate depth of measurement.[19] Thus, although we now quantify many different dimensions of health, most rehabilitation outcome assessments are imprecise, which restricts their utility to monitor precisely clinical outcomes and with even more difficulties, to evaluate the capability to work and earn income. However, it must be recognized that modern orientations tend to focus first on the individual as a whole and to evaluate, above all, the functional implications on the ability of the individual with a corporal deficit.

Because of this difference between impairment and disability, physicians are encouraged to rate impairment based on the level of impact that the condition has on the performance of activities of daily living (ADL) rather than on the performance of work-related tasks. According to the AMA Guides[20], impairment ratings derived from the Guides are "a physician-driven first approximation of a process that attempts to link impairment with a quantitative estimate of functional losses in" the patient's "personal sphere of activity".

Interestingly, various professionals and institutions regularly use the AMA Guides for the direct measurement of disability. Several people recognize the impairment ratings determined by the AMA Guides as direct measures of disability, despite the stated intent of the authors.

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[16] Ibid.
[17] G. Stucki, T. Ewert & A. Cieza (2002) Value and application of the ICF in rehabilitation medicine, Disability and Rehabilitation, 24:17, 932-938, DOI: 10.1080/09638280210148594
[18] H. H. Goldman: *Commentary on Measuring Disability,* Archives of Physical Medicine and Rehabilitation 2013;94:1687-9
[19] Liang M, Lew R, Stucki G, Fortin P, Daltroy L. *Measuring clinically important changes with patient-oriented questionnaires*. Med Care 2002; 40 (4 Suppl): II45–II51
[20] *American Medical Association' Guides to the Evaluation of Permanent Impairment, 6th Edition (AMA Guides),* Medical Editor Robert D. Rondinelli, 2008

The examiner should act always with professionalism and base his observations on objective and factual opinions in his area of expertise. It will take time to complete its physical exam with patience and understanding. The findings will be reported with a precise description and if possible with measurements. It must retain its independence and avoid conflicts of interest. As previously mentioned, the best time to proceed to the evaluation of permanent damage varies according to jurisdictions or institutions. It is generally accepted to go forward when the improvement is maximal and that no further progress is expected by the medical team.

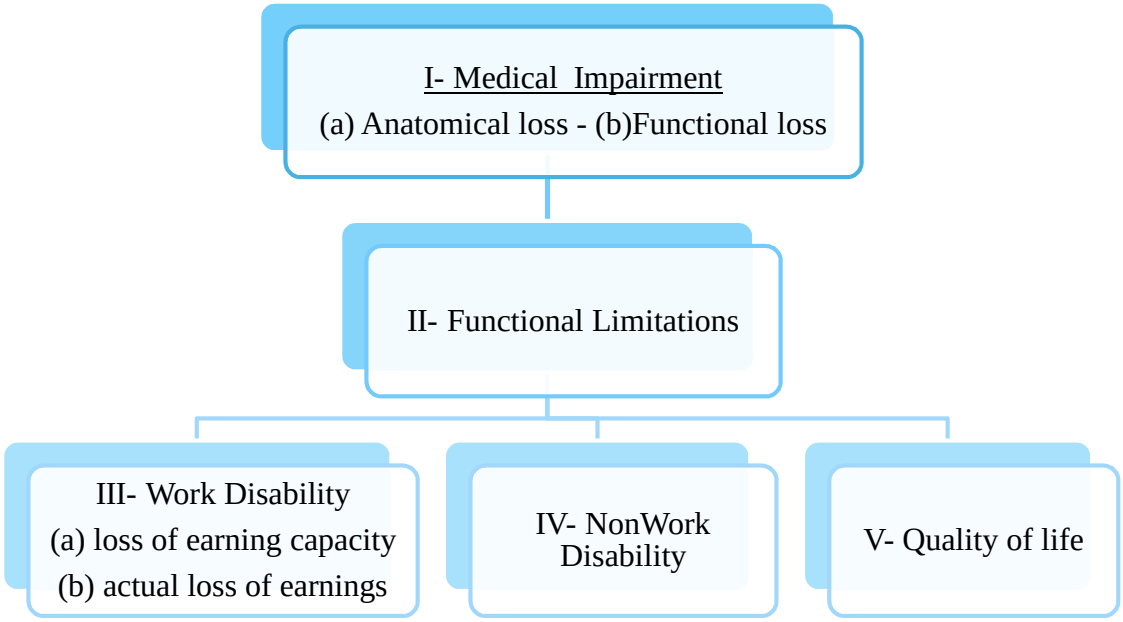
The examiner's report should at minimum include the following elements:

- History and physical examination findings
- Statement about medical stability
- Medical record review
- Diagnosis
- Whole-person impairment percentage (with calculations)
- Apportionment of the permanent impairment to prior conditions (when appropriate)
- Functional ability statement regarding the individual's residual functional capacity
- An assessment of the credibility of alleged pain and limitations
- Future medical treatment recommended or required
- Some statement about sincerity of effort or motivation,
- Statement about causation of the impairment
- Answers to any other specific questions posed by the requesting adjuster or agency
- References if appropriate

Dr. R. D. Rondinelli commented how essential it is to keep diagnosis-based[21] physician-driven medical impairment ratings assessments, assisted and supported by a multiprofessional team. He listed the following steps of
1) determine clinical problem or diagnosis;
2) review patient report or indications of functional loss;
3) report examination findings;
4) use results of clinical studies.

In practice, jurisdictions choosing to adopt impairment ratings as a procedural surrogate for disability ratings pose a misapplication dilemma as follows. All disability systems seeking to fairly compensate for disability are faced with the challenge of adequately accounting for losses in three major domains: these typically can be viewed as losses due to work disability, non-work disability, and quality of life (QOL)[22].

[21] A Critical Review of Spinal Range of Motion (ROM) as a Method of Assessing Permanent Back Injuries, Robert D. Rondinelli, MD, PhD, International IME Services, LLC, page 26
[22] McGeary M, Ford M, McCutchen SR, et al, eds. IOM Committee on Medical Evaluation of Veterans for Disability Compensation. *A 21st Century System for Evaluating Veterans for Disability Benefits. The Rating Schedule*. Washington, DC, The National Academies Press, 2007, 92-138



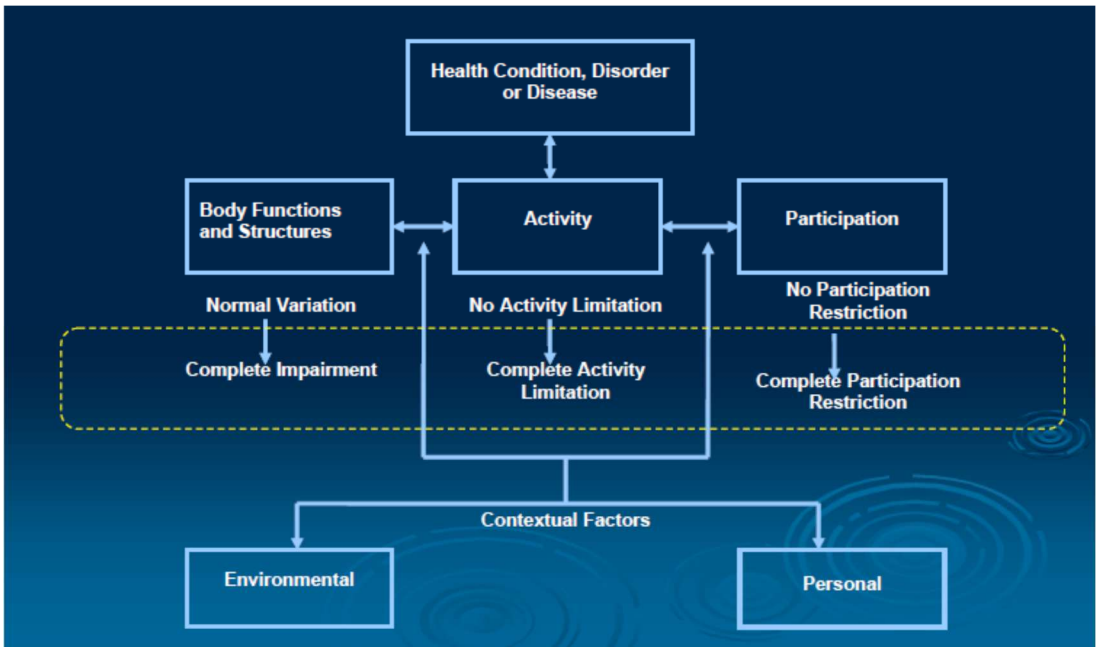
This brings us to the *American Medical Association' Guides to the Evaluation of Permanent Impairment, 6th Edition (AMA Guides),* Medical Editor Robert D. Rondinelli, 2008. Chapter 2 which covers the practical applications of the guide specifically includes a section on the use of the AMA Guides in workers compensation and other disability systems. To give a more comprehensive and modern design, the 6th edition has moved to diagnosis-based approach[23] to impairment rating, an improvement over the earlier diagnosis-related estimates of the 5th and earlier editions. It has inherent simplicity and transparency, using an impairment grid, classes 0-4 from least severe to most severe. It is evidence-based. It has functional basis as it requires classification of functional severity. It has adopted the conceptual framework of disability espoused by the ICF, international classification of functioning, disability and health.

It has and still is a consensus based rating system. It is revised to reflect latest scientific research and evolving medical research. However, it is still not intended for direct use in estimating work participation restrictions. Despite the stated intent of the authors, most jurisdictions recognise impairment rating of AMA as direct measures of disability. Another critic to the AMA Guides 6th edition is that there is still some inter-raters subjective variability following its use.

Impairment ratings are estimates determined by medical consensus that reflect the severity of the limitation of the body part. Additionally, these impairment ratings reflect the loss of opportunity that individuals experience in their ability to perform normal activities of daily living, self-care, physical activity and/or sensory function. There will be many cases that will not necessarily fit a rating category and therefore the examining physician will need to exercise judgment. There will be specific categories where a lot of judgment will be required. When necessary other approved rating guides are also used.

[23] A Critical Review of Spinal Range of Motion (ROM) as a Method of Assessing Permanent Back Injuries, Robert D. Rondinelli, MD, PhD, International IME Services, LLC, page 27

Disability as a continuum within ICF[24]



Adaptation to the world of work

By jurisdiction, policies and intentions retained by the states, various forms of compensation may be brought forward to cover losses relating to workplace injuries.

- impairment based approach:
  Based on the degree of impairment. No links with future earning loss
- loss of earning capacity approach:
  Imply a projected economic impact on the ability to re-enter the labor market
- wage loss approach:
  Permanent "extension" of temporary disability benefit until return to work (if any)
- mixed approach

Those approaches try to find a balance between the notions of disability and impairment and to propose a fair compensation for the losses of an individual injured at work.[25] The eventual payment of compensation may be offered in lump sum and/or by payment of a pension. Percentage of bodily injury tables are used in workers compensation jurisdictions in different forms, with various ranges of values and the adoption of which have different historical perspectives.

Percentage of bodily injury tables come as

- Permanent clinical impairment guide
- Permanent disability evaluation schedule
- Permanent impairment rating schedule
- Permanent physical impairment rating schedule
- Permanent functional impairment rating schedule
- Permanent impairment rating guide
- Scale of bodily injuries

These are very similar schedules and the values are fairly in agreement and are used as guides by the medical assessment practitioner. Additionally, the assessments are intended to be performed by medical

[24] WHO 2001

[25] Barth P.S.: *Compensating workers for permanent partial disabilities*, Social Security Bulletin, vol. 5, no. 4 2003/2004, https://www.ssa.gov/policy/docs/ssb/v65n4/v65n4p16.html

practitioners after the injured worker has reached a medical plateau, usually twelve months to eighteen months, up to two years for head injuries and major nerve injuries. For amputations, time after fitting prosthesis is also needed.

Before an assessment of whether there is a permanent physical impairment (or permanent functional impairment), the injury should be reasonably stable or in other words the injured worker has reached a medical plateau. The treatment is complete. There are no more pending or planned major interventions. Adequate healing time should be allowed between injury or surgery and the assessment. Time interval following injury or surgery for assessment would be between twelve to eighteen months. Two years would be needed for head injuries and major nerve injuries. For amputations, time after fitting of prosthesis should be allowed. The ratings schedule usually includes a table of expected healing times for certain permanent physical impairments (or permanent functional impairments).

Impairment ratings are solely related to demonstrated permanent loss of body function. The following are not considerations in determining the rating:

- Surgical treatment
- Pain and suffering except those directly linked to tissue damage from the impairment
- Age, education, or other social factors
- Ability or inability to work
- Loss of employment or earnings resulting from the compensable injury or impairment

A minimum impairment rating is defined, usually 1% and the maximum is 100%. However, some scales adopt definitions with other conventions: the GAF(Global Assessment of Functioning)[26] suggests that a level of 80 to 100% constitutes a normal functioning for individual, the CNESST in Quebec admits the possibility of more than 100% of invalidity, the AMA considers a score over 90% as a complete dependence state and 100% as being on the verge of death.

Permanent physical impairment ratings may be reassessed:

- If there has been a change in the level of physical impairment since the last assessment;
- An additional body part has been affected by the original work-related injury; or
- The compensable injury or disease has aggravated the prior non-compensation conditions.

If the reassessment generates a higher % impairment rating, the difference between the new assessment and the original assessment may generate an additional award.

Monitoring and reporting occupational diseases

To meet the specific program requirements, compensation, rehabilitation of workers injured or fatally injured on the job, administrative records are collected. The administrative data reflects the collection practices, reporting requirements, claims policies and definitions of each individual compensation board.

Standards

A standard defines a coding structure for nature of injury or disease for workplace accidents, injuries and occupational diseases. It would be appropriate to adopt a classification method to effectively report events and their consequences. Frequently used standards derived from:

The International Statistical Classification of Diseases and Related Health Problems (ICD) is the global standard for reporting and categorizing diseases, health-related conditions and external causes of disease and injury in order to compile useful health information related to deaths, illness and injury (mortality and morbidity). The World Health Organization (WHO) is currently developing the 11th

[26] APA: *DIAGNOSTIC AND STATISTICAL MANUAL OF MENTAL DISORDERS, FOURTH EDITION, TEXT REVISION*, PUBLISHER AMERICAN PSYCHIATRIC ASSOCIATION, 2000. P.34

revision of the ICD. It is anticipated that the final ICD-11 will be approved for release by the World Health Assembly in 2018.[27]

North America mainly use the United States Bureau of Labour and Statistics Occupational Injury and Illness Classification. This standard is embodied in a coding manual. Such coding manual is regularly updated. General rules and guidelines are applied to coding workplace injuries and diseases. A workplace injury or disease are described by

- Nature of injury or disease
- Part of body
- Source of injury
- Event or exposure.

Sometimes there is a secondary source of injury or disease.

Nature of injuries or diseases

The nature of injury or disease variable specifies the principal physical[28] characteristics of the workplace injury or disease. This variable is a 5-digit code. The major groups of nature of injury or disease are self-explanatory and are as follows:

- 0* –traumatic injuries and disorders
- 1* –systemic diseases and disorders
- 2* –infectious and parasitic diseases
- 3* –neoplasms, tumours and cancer
- 4* –symptoms, signs and ill-defined conditions
- 5* –other diseases, conditions and disorders
- 8* –multiple diseases, conditions and disorders
- 9* –unknown
- NC* –not coded

Most of the groupings done by various compensation boards are to allow them to understand their experience as well as the impact of some specific benefit changes or some specific parameters that influence claiming patterns.

Theses groupings could include severe injuries, occupational diseases and minor to moderate injuries. Proportions of these major groupings to all injuries over time, when the volume of injuries as well as the covered workers are fairly stable provide a reasonable estimate of trends and changes reflecting possible impact of changes in benefits and changes in adjudication parameters.

Reporting

The National OSH Policy urges the collection and maintenance of all records on OSH related accidents, injuries, death, treatment, compensation, cases, decisions etc. (Clause 3.a.7; 4.a. 8,;and 4.d.5) and also states that the respective institutions will use those data and information to make action plan and OSH specialist for ensuring OSH at 15 workplace (Clause 3.a.8, 4.a.9, and 4.d.6). The National Health Policy as well ensures health information for all.

Compliance with reporting of accidents and occupational diseases to the occupational health and safety body (regional or national) will allow for the evaluation of incidence, trends, and provide timely alerts to developments that need immediate attention.

Some jurisdictions have target industries with the goal of reducing unusually high claim costs. Safety associations are also funded for certain industries to promote occupational health and safety awareness among the workers and employers.

[27] http://www.who.int/classifications/icd/revision/en/
[28] NWISP Coding_Manual_2013725. pdf,page 5

List of Occupational diseases

According to the Protocol of 2002 to the Occupational Safety and Health Convention, 1981 (No. 155), the term "occupational disease" [29] covers any disease contracted as a result of an exposure to risk factors arising from work activity.

The ILO Employment Injury Benefits Recommendation, 1964 (No. 121), Paragraph 6(1), defines occupational diseases in the following terms: "under prescribed conditions, regard diseases known to arise out of the exposure to substances and dangerous conditions in processes, trades or occupations as occupational diseases."

Two main elements are present in the definition of an occupational disease:
• the causal relationship between exposure in a specific working environment or work activity and a specific disease; and
• the fact that the disease occurs among a group of exposed persons with a frequency above the average morbidity of the rest of the population

Occupational diseases are dependent on the type of industries and natural resources to a country. Injury rates and costs of occupational injuries and diseases provide a factual basis for establishing and evaluating health and safety programs. Workers compensation benefits are paid for any injury or disease resulting from a work-related event or exposure to hazardous elements.

For example, for occupational cancers claims for firefighters, specific years of service for specific primary site cancers allow presumption that the cancer arose out of and in the course of employment. Another example, primary malignant neoplasm of the mesothelium of the pleura or peritoneum is presumed an occupational disease that is compensable if the injured worker can bring proof of current and/or previous employment in a workplace associated with any mining, milling, manufacturing, assembling, construction, repair, alteration, maintenance or demolition process involving the generation of airborne asbestos fibres.

In other jurisdictions, there is further need for establishing medical and scientific causation, that is work-related exposure have caused the disease. To determine a causal association between the exposure and the disease, the "Bradford Hill"[30] criteria is applied to medical and scientific literature. The criteria include plausibility, temporal, specificity, dose-response, consistency and strength of association. An attributable risk fraction is derived which provides "a measure of the proportion of cases reasonably attributable to the exposure."

A date of occurrence is determined. It is usually defined as the date when the disablement is first noted. For example, for hearing loss, the date of accident is the date of the audiologist report of the hearing loss. It is not the date of the initial exposure. The occupational disease or associated disablements may have resulted from an exposure with one employer or from multiple exposures at various workplaces.

The list of industrial diseases is much correlated to the more prevalent industries in a particular jurisdiction. Industrial diseases as listed by workers compensation jurisdictions are heavily predicated on the associated industry or process. Some jurisdictions even go to the extent of specifying the particular employer.

[29] *List of Occupational Diseases* (revised 2010): Identification and recognition of occupational diseases: Criteria for incorporating diseases in the ILO list of occupational diseases. Occupational Safety and Health Series 74,p.7, http://www.ilo.org/wcmsp5/groups/public/@ed_protect/@protrav/@safework/documents/publication/wcms_150323.pdf

[30] BRADFORD HILL A. *THE ENVIRONMENT AND DISEASE: ASSOCIATION OR CAUSATION?* HTTP://WWW.NCBI.NLM.NIH.GOV/PMC/ARTICLES/PMC1898525/

Industrial diseases

Accidents

Mechanical factors, unshielded machinery, unsafe structures at the workplace and dangerous unprotected tools are among the most prevalent hazards in both industrial and developing countries. They affect the health of a high proportion of the workforce. Most accidents could be prevented by applying relatively simple measures in the work environment, working practices, and safety systems and ensuring appropriate behavioural and management practices. This would significantly reduce accident rates within a relatively short period of time. Accident prevention programmes are shown to have high cost-effectiveness and yield rapid results. However, unfortunately, ignorance of such precautions, particularly in sectors where production has grown rapidly, has led to increasing rates of occupational accidents (WHO 1995).

Chemical and organic exposures

About 100,000 different chemical products are currently in use in work environments, and the number is increasing constantly. The extent of exposure varies widely according to the industry, activity and the country. Metal poisoning, solvent damage to the central nervous system and liver, pesticide poisoning, skin and respiratory allergies, cancers and reproductive disorders are among the health effects of such exposures. Pesticide exposure is the major chemical hazard in developing countries where personal protection is particularly difficult and other preventive means should be implemented. The major threat posed by pesticides in many developing countries is acute poisoning itself. A recent estimate by the WHO puts the annual number of severe poisonings at 3 million, with about 220,000 deaths. There is a long list of occupational diseases which are primarily poisoning or consequent chronic condition arising as a complication of the acute poisoning. The poisoning and its complications are resulting from continuous exposures to chemical elements, associated preparations and its chemical compounds. Workers in industries using any processes involving these chemical elements, associated preparations and its chemical compounds are being exposed to these hazardous elements. These include arsenic, benzene, beryllium, brass, nickel or zinc, cadmium, carbon dioxide, carbon disulphide, carbon monoxide, chlorinated hydrocarbons, chromium, fluorine, lead, mercury, nitro or amino- derivatives of benzene, phenol or their homologues, oxides of nitrogen and phosphorous.

Biological agents

Many biological agents, viruses, bacteria, parasites, fungi, moulds and organic dusts have been found to occur in occupational exposures. In the industrial countries around 15% of workers may be at risk of viral or bacterial infection, allergies and respiratory diseases. In many developing countries, the number one exposure is to organic and biological agents. The Hepatitis B and C viruses and tuberculosis infections (particularly among health care workers), asthmas (among persons exposed to organic dust) and chronic parasitic (particularly among agricultural and forestry workers) are the most common occupational diseases that result from such exposures (WHO 1995). Anthrax is associated with any process involving the handling of wool, hair, bristles, hides and skin. Brucellosis is associated with any industry involving the care, slaughtering, cutting, transporting of slaughter-house animals or laboratory work involving animals.

Physical exposures

Workers may be exposed to several physical factors such as noise, vibration, ionizing and non-ionizing radiations and microclimatic conditions that are known to affect their health. Noise-induced hearing is one of the most prevalent occupational diseases in both developing and industrial countries, although many preventive means are available. Hearing loss is associated with any industry or process where there is prolonged exposure to excessive noise levels. Preventive strategies have also been developed for other physical factors, particularly for localized vibration and ionizing radiation.

Ergonomics and musculoskeletal exposures

Between 10% and 30% of the workforce in industrial countries and between 50% and 70% in developing countries may be exposed to heavy physical workload or to un-ergonomic working conditions such as lifting and moving of heavy items or repetitive manual tasks. Repetitive tasks and static muscular load are found in many industrial and service occupations. In many industrial countries, musculoskeletal disorders are the main cause of both short-term and permanent work disability, which can cause economic losses that may amount to

5% of the GNP. Most exposures can be eliminated or minimized through mechanization, improvement of ergonomics, and better organization of work and training.

Psychosocial exposures

Up to 50% of all workers in industrial countries judge their work to be "mentally heavy". Psychological stress caused by time pressure, hectic work, and risk of unemployment has become more prevalent during the past decade. Other factors that may have adverse psychological effects include jobs with monotonous work or work that requires constant concentration. Others are shift work, jobs with the threat of violence, such as police or prison work, and isolated work. Psychological stress and overload have been associated with sleep disturbances, burn-out syndromes, stress, nervousness and depression. There is also epidemiological evidence of an elevated risk of cardiovascular disorders, particularly coronary heart disease and hypertension.

Respiratory Diseases

These include asthma, extrinsic alveolitis (farmers' lung or mushroom workers' lung), broncho-pulmonary diseases, asbestosis, silicosis and pneumoconiosis. The associated industries or processes involve red cedar dust, respirable organic dusts, hard metal dust, cotton dust, flax, hemp or sisal dust, airborne asbestos fibres, silica dust and dusts from stones, metals or pottery.

Skin and Eye Diseases

These include dermatitis, retinitis and ulceration of the skin or cornea. The associated industry or process involve irritants, allergens or sensitizers, electro and oxy-welding and cutting, tar, pitch, bitumen, mineral oil, paraffin or any compound, product or residue.

In the application of this list the degree and type of exposure and the work or occupation involving a particular risk of exposure should be taken into account when appropriate.

In Section II of the revision document, the ILO proposes criteria that supported the changes to the list. This document should be considered a reference for reflection in the event of the desire to add medical conditions to the list.

When certain occupational diseases have, with the application of tools like the Bradford Hill criteria, generated attributable risk fractions of fifty percent of higher, it could be suggested that presumption with proof of employment in an industry involving exposure to hazardous elements be considered. There should also be consideration of minimum number of years of employment in associated industries/processes which could be a minimum number of years of exposure.

The recommendation is to use the List of Occupational Diseases produces by ILO[31]. The current list annexed to BLA 2006 no longer corresponds to contemporary medical data and is not sufficiently exhaustive in view of possible application to all economic sectors of Bangladesh.

1. Occupational diseases caused by exposure to agents arising from work activities

1.1. Diseases caused by chemical agents

1.1.1. Diseases caused by beryllium or its compounds
1.1.2. Diseases caused by cadmium or its compounds
1.1.3. Diseases caused by phosphorus or its compounds
1.1.4. Diseases caused by chromium or its compounds
1.1.5. Diseases caused by manganese or its compounds
1.1.6. Diseases caused by arsenic or its compounds
1.1.7. Diseases caused by mercury or its compounds
1.1.8. Diseases caused by lead or its compounds

[31] *List of Occupational Diseases* (revised 2010): Identification and recognition of occupational diseases: Criteria for incorporating diseases in the ILO list of occupational diseases. Occupational Safety and Health Series 74, http://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---safework/documents/publication/wcms_150323.pdf

1.1.9. Diseases caused by fluorine or its compounds
1.1.10. Diseases caused by carbon disulfide
1.1.11. Diseases caused by halogen derivatives of aliphatic or aromatic hydrocarbons
1.1.12. Diseases caused by benzene or its homologues
1.1.13. Diseases caused by nitro- and amino-derivatives of benzene or its homologues
1.1.14. Diseases caused by nitroglycerine or other nitric acid esters
1.1.15. Diseases caused by alcohols, glycols or ketones
1.1.16. Diseases caused by asphyxiants like carbon monoxide, hydrogen sulfide, hydrogen cyanide
or its derivatives
1.1.17. Diseases caused by acrylonitrile
1.1.18. Diseases caused by oxides of nitrogen
1.1.19. Diseases caused by vanadium or its compounds
1.1.20. Diseases caused by antimony or its compounds
1.1.21. Diseases caused by hexane
1.1.22. Diseases caused by mineral acids
1.1.23. Diseases caused by pharmaceutical agents
1.1.24. Diseases caused by nickel or its compounds
1.1.25. Diseases caused by thallium or its compounds
1.1.26. Diseases caused by osmium or its compounds
1.1.27. Diseases caused by selenium or its compounds
1.1.28. Diseases caused by copper or its compounds
1.1.29. Diseases caused by platinum or its compounds
1.1.30. Diseases caused by tin or its compounds
1.1.31. Diseases caused by zinc or its compounds
1.1.32. Diseases caused by phosgene
1.1.33. Diseases caused by corneal irritants like benzoquinone
1.1.34. Diseases caused by ammonia
1.1.35. Diseases caused by isocyanates
1.1.36. Diseases caused by pesticides
1.1.37. Diseases caused by sulphur oxides
1.1.38. Diseases caused by organic solvents
1.1.39. Diseases caused by latex or latex-containing products
1.1.40. Diseases caused by chlorine
1.1.41. Diseases caused by other chemical agents at work not mentioned in the preceding items where a direct link is established scientifically, or determined by methods appropriate to national conditions and practice, between the exposure to these chemical agents arising from work activities and the disease(s) contracted by the worker

1.2. Diseases caused by physical agents

1.2.1. Hearing impairment caused by noise
1.2.2. Diseases caused by vibration (disorders of muscles, tendons, bones, joints, peripheral blood vessels or peripheral nerves)
1.2.3. Diseases caused by compressed or decompressed air
1.2.4. Diseases caused by ionizing radiations
1.2.5. Diseases caused by optical (ultraviolet, visible light, infrared) radiations including laser
1.2.6. Diseases caused by exposure to extreme temperatures
1.2.7. Diseases caused by other physical agents at work not mentioned in the preceding items where a direct link is established scientifically, or determined by methods appropriate to national conditions and practice, between the exposure to these physical agents arising from work activities and the disease(s) contracted by the worker

1.3. Biological agents and infectious or parasitic diseases

1.3.1. Brucellosis
1.3.2. Hepatitis viruses

1.3.3. Human immunodeficiency virus (HIV)
1.3.4. Tetanus
1.3.5. Tuberculosis
1.3.6. Toxic or inflammatory syndromes associated with bacterial or fungal contaminants
1.3.7. Anthrax
1.3.8. Leptospirosis
1.3.9. Diseases caused by other biological agents at work not mentioned in the preceding items where a direct link is established scientifically, or determined by methods appropriate to national conditions and practice, between the exposure to these biological agents arising from work activities and the disease(s) contracted by the worker

2. Occupational diseases by target organ systems

2.1. Respiratory diseases

2.1.1. Pneumoconioses caused by fibrogenic mineral dust (silicosis, anthraco-silicosis, asbestosis)
2.1.2. Silicotuberculosis
2.1.3. Pneumoconioses caused by non-fibrogenic mineral dust
2.1.4. Siderosis
2.1.5. Bronchopulmonary diseases caused by hard-metal dust
2.1.6. Bronchopulmonary diseases caused by dust of cotton (byssinosis), flax, hemp, sisal or sugar cane (bagassosis)
2.1.7. Asthma caused by recognized sensitizing agents or irritants inherent to the work process
2.1.8. Extrinsic allergic alveolitis caused by the inhalation of organic dusts or microbial contaminated aerosols, arising from work activities
2.1.9. Chronic obstructive pulmonary diseases caused by inhalation of coal dust, dust from stone quarries, wood dust, dust from cereals and agricultural work, dust in animal stables, dust from textiles, and paper dust, arising from work activities
2.1.10. Diseases of the lung caused by aluminium
2.1.11. Upper airways disorders caused by recognized sensitizing agents or irritants inherent to the work process
2.1.12. Other respiratory diseases not mentioned in the preceding items where a direct link is established scientifically, or determined by methods appropriate to national conditions and practice, between the exposure to risk factors arising from work activities and the disease(s) contracted by the worker

2.2. Skin diseases

2.2.1. Allergic contact dermatoses and contact urticaria caused by other recognized allergy provoking
agents arising from work activities not included in other items
2.2.2. Irritant contact dermatoses caused by other recognized irritant agents arising from work activities not included in other items
2.2.3. Vitiligo caused by other recognized agents arising from work activities not included in other items
2.2.4. Other skin diseases caused by physical, chemical or biological agents at work not included under other items where a direct link is established scientifically, or determined by methods appropriate to national conditions and practice, between the exposure to risk factors arising from work activities and the skin disease(s) contracted by the worker

2.3. Musculoskeletal disorders

2.3.1. Radial styloid tenosynovitis due to repetitive movements, forceful exertions and extreme postures of the wrist
2.3.2. Chronic tenosynovitis of hand and wrist due to repetitive movements, forceful exertions and extreme postures of the wrist
2.3.3. Olecranon bursitis due to prolonged pressure of the elbow region
2.3.4. Prepatellar bursitis due to prolonged stay in kneeling position
2.3.5. Epicondylitis due to repetitive forceful work
2.3.6. Meniscus lesions following extended periods of work in a kneeling or squatting position

2.3.7. Carpal tunnel syndrome due to extended periods of repetitive forceful work, work involving vibration, extreme postures of the wrist, or a combination of the three
2.3.8. Other musculoskeletal disorders not mentioned in the preceding items where a direct link is established scientifically, or determined by methods appropriate to national conditions and practice, between the exposure to risk factors arising from work activities and the musculoskeletal disorder(s) contracted by the worker

2.4. Mental and behavioural disorders

2.4.1. Post-traumatic stress disorder
2.4.2. Other mental or behavioural disorders not mentioned in the preceding item where a direct link is established scientifically, or determined by methods appropriate to national conditions and practice, between the exposure to risk factors arising from work activities and the mental and behavioural disorder(s) contracted by the worker

3. Occupational cancer

3.1. Cancer caused by the following agents

3.1.1. Asbestos
3.1.2. Benzidine and its salts
3.1.3. Bis-chloromethyl ether (BCME)
3.1.4. Chromium VI compounds
3.1.5. Coal tars, coal tar pitches or soots
3.1.6. Beta-naphthylamine
3.1.7. Vinyl chloride
3.1.8. Benzene
3.1.9. Toxic nitro- and amino-derivatives of benzene or its homologues
3.1.10. Ionizing radiations
3.1.11. Tar, pitch, bitumen, mineral oil, anthracene, or the compounds, products or residues of these substances
3.1.12. Coke oven emissions
3.1.13. Nickel compounds
3.1.14. Wood dust
3.1.15. Arsenic and its compounds
3.1.16. Beryllium and its compounds
3.1.17. Cadmium and its compounds
3.1.18. Erionite
3.1.19. Ethylene oxide
3.1.20. Hepatitis B virus (HBV) and hepatitis C virus (HCV)
3.1.21. Cancers caused by other agents at work not mentioned in the preceding items where a direct link is established scientifically, or determined by methods appropriate to national conditions and practice, between the exposure to these agents arising from work activities and the cancer(s) contracted by the worker

4. Other diseases

4.1. Miners' nystagmus
4.2. Other specific diseases caused by occupations or processes not mentioned in this list where a direct link is established scientifically, or determined by methods appropriate to national conditions and practice, between the exposure arising from work activities and the disease(s) contracted by the worker

PROPOSE A TRAINING FRAMEWORK FOR THE MEDICAL DOCTOR AND OTHER HEALTH PROFESSIONALS ON THE USE OF DAT.

In 2016, ILO supported Tanzania's Workers Compensation Fund (WCF) for the preparation and the training of a group of doctors on the management and assessment of the permanent sequelae of injured workers. Near 400 doctors have been trained in 4 major cities in the country. This was an activity part of the implementation of the new worker compensation scheme. Occupational Health was a new field of practice for these doctors. The training was therefore aimed at imparting necessary skills for medical practitioners who will be assessing cases of occupational injuries and diseases (DAT) and advise WCF whether they should be considered for compensation. It did introduce occupational safety and health prevention basics as well as labor inspection policies and administration. The workshops were held with the support of PowerPoint projections and conferences. Daily pre and post-tests aimed to highlight the most important concepts. Practical exercises took place to ensure the acquisition of the discussed concepts and promote retention. Overall, the project appeared very positive. The comments reported back the enthusiasm of participating health professionals. Board members and the WCF administrative staff have been involved and have closely followed the entire training project. Tanzanian doctors have appreciated participatory formula used for the presentation of case studies. This participation however was limited to interactions in large group. It would have been advantageous, on a pedagogical basis, to provide written work and clinical practice (personal or small team), which should been include in future training.

Tanzanian Training Project Content	
Week Objectives Greetings and objectives presentation **Occupational Health & Safety in the African Nations** Introduction to OHS Culturally relevant model of OHS in African countries Recent trends **Occupational health, comparison with neighboring African countries** What do neighbours? **WCA 2008** Contents of Tanzania WCA 2008 **Implementation of Occupational diseases: Tanzania Third Schedule** Occupational disease, causal association, specific exposure caused the disease Date of accident, reporting List of Tanzanian Occupational Diseases **Basics of occupational health hazards** Overview in toxicology **Worker medical questionnaire** What does this worker? **Being Examiner** **Measurement and Assessment of Disablement** Impairment or disability? **Repetitive strain injuries (RSI)** Risk factors **Spine** Measurement and description of the spine: cervical, dorso-lumbar, neurology, special considerations	**Upper limb** Measurement and description of the upper limb **Lower limb** Measurement and description of the lower limb **Central organ damages** Other systemic bodily damages **Neuro-Psychiatric impairment** Emerging/Progressing problem Examination & Functional limitations **Basics in Prevention** "The best accident is the one which never occurred" **Functional limitations** Evaluation of reduction of the physical or mental capacity to perform certain activities or to suffer some effects resulting from an occupational injury **Reporting the Medical Evaluation** Drafting of the medical report **WCF Dr Duties** Tanzania WCF expectations **Week Review** Conclusion and closure **Case stories** Scenarios **Pre and post test** **WCF administration**

A summary of this training appears in the above table. Such training could be adapted to the needs of Bangladesh in order to promote the appropriation by clinicians of basic concepts in Occupational Health and the use of the disability assessment tool (DAT).

DEVELOP A TOOL WHICH WILL ALLOW A TRAINED USER TO MESURE PRMANENT DAMAGE TO BODILY AND MENTAL INTEGRITY (PDBMI) AND EXPRESS AS A PERCENTAGE OF LOSS OF EARNING CAPACITY.

The *Bangladesh Labour Act 2006* already contains indications in "THE FIRST SCHEDULE [see sections 2(1), (67) and section 151] LIST OF INJURIES DEEMED TO RESULT IN PERMANENT PARTIAL DISABLEMENT". This table, however, needs to be modernized since it contains a vision limited to an old conception of work accidents where the only physical consequences are industrial events with machinery or tools leading to amputations. The labor market is now more complex, medical advances and understanding of the impact of industrial diseases call for identification and compensation for physical lesions that are not included or described in the FIRST SCHEDULE. Adopting a new updated schedule maintains the OHS compensation history of Bangladesh, is part of the continuity of the support offered to the workers of the RP and builds on the current practice of neighbors such as Cambodia And Thailand.

Recommendation of an "Improved and more descriptive" First Schedule:

It consists of Part I and Part II.

Part I –Permanent Total Disability lists eight permanent functional impairments that are rated at 100%.
Part II –Permanent Partial Disability lists several permanent functional impairments groupings

Some impairment ratings are provided in ranges. Many cases will not fit into a rating category. Some compensable injury could involve an impairment rating from more than one body part.

The examining physician must exercise judgment. The ratings should be consistent which in an average person would have a similar effect on activities. An enhancement factor may become necessary for multiple injuries or serious injuries but should be proportionate to the total body. A combined value for multiple impairments could include a reduction. Some impairment ratings could need individual considerations like head injuries, psychiatry or loss of thoracic or abdominal organs.

In all cases, as mentioned above, examiner's report should be well documented and descriptive enough to understand the conclusions and the rating.

Part I	**Permanent Total Disability**	
Item	**Description of Injury**	**Percentage (%) of Loss of Earning Capacity**
1	Total loss of vision of both eyes	100%
2	Loss of both feet at or above the ankle	100%
3	Loss of both hands at or above the wrist	100%
4	Loss of one feet at or above the ankle and one hand at or above the wrist	100%
5	Injury to the central nervous system resulting in mental incompetence that renders the worker incapable of being gainfully employed	100%
6	Quadriplegia	100%

7	Paraplegia	100%
8	Hemiplegia	100%
	Complete and permanent loss of the use or function of a limb or a part of a member referred to in this Schedule is equivalent to the loss of the limb or part of the member.	
	Time interval following injury or surgery for assessment usually between 12 to 18 months. 2 years for head injuries and major nerve injuries. For amputations, time after fitting of prosthesis.	

Part II	**Permanent Partial Disability**	
Item	**Description**	**Percentage (%) of Loss of Earning Capacity**
	Amputations -upper extremities	
9	Proximal third of humerus or disarticulation at shoulder	70%
10	Middle third of humerus	65%
11	Distal third of humerus to biceps insertion	60%
12	Biceps insertion to wrist	50% -60%
13	Thumb, including first metacarpal	20%
14	Thumb, at MP joint	15%
15	Thumb, at IP joint	10%
16	Thumb, one-half distal phalanx at MP joint	5%
17	Thumb, at least one-quarter distal phalanx	3%
18	Loss of four fingers	45%
19	Loss of three fingers	30%
20	Loss of two fingers	20%
	Amputations -lower extremities	
21	Hip	65%
22	Below the hip	50%
23	Below knee	35% -45%

24	Leg, at ankle	25%
25	Through foot	10% -25%
26	Great toe, both phalanges	5%
27	Great toe, one phalanx	2%
28	All toes, total amputation	7.5%
Part II	Permanent Partial Disability (continuation)	
Item	Description	Percentage (%) of Loss of Earning Capacity
	Sense of smell	
29	Complete loss of sense of smell	3%
	Loss of vision	
30	Complete loss of one eye	18%
31	Total loss of vision, one eye	16%
32	Cataract or aphakia, one eye	6%
33	Double aphakia	10%
34	Hemianopsis, right field	25%
35	Hemianopsis, left field	20%
36	Diplopia, all fields	10%
37	Scotoma, depending on location and extent	0% -16%
38	Partial loss of vision	0% -16%
	Loss of hearing	
39	Deafness, complete one ear	5%
40	Deafness, both ears	30%

41	Deafness, complete in both ears occurring as a sudden and complete traumatic loss of hearing	60%
42	Unilateral and bilateral degrees of hearing loss	0% - 5%
43	Tinnitus	0% - 5%

Part II	**Permanent Partial Disability (continuation)**	
Item	**Description**	**Percentage (%) of Loss of Earning Capacity**
	Loss of Fingers of right or left hand	
	Index finger	
44	Whole	5%
45	Two phalanges	4%
46	One phalanx	2%
47	Guillotine amputation of tip without loss of bone	2%
	Middle finger	
48	Whole	4%
49	Two phalanges	3.5%
50	One phalanx	1.5%
51	Guillotine amputation of tip without loss of bone	1.5%
	Ring or little finger	
52	Whole	3%
53	Two phalanges	2.5%
54	One phalanx	1%
55	Guillotine amputation of tip without loss of bone	1%

Part II	Permanent Partial Disability (continuation)	
Item	**Description**	**Percentage (%) of Loss of Earning Capacity**
	Loss of Fingers of right or left hand	
	Index finger	
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51	Guillotine amputation of tip without loss of bone	1.5%
	Ring or little finger	
52	Whole	3%
53	Two phalanges	2.5%
54	One phalanx	1%
55	Guillotine amputation of tip without loss of bone	1%

Part II	Permanent Partial Disability (continuation)	
Item	**Description**	**Percentage (%) of Loss of Earning Capacity**
	Disfigurement and scarring from burns or other trauma	
56	Minor	0%-5%
57	Moderate	6%-10%
58	Major	11%-25%
	General impairment	
59	Total knee replacement	10% -25%
60	Total hip replacement	25% -50%
61	Loss of cervical, thoracic and lumbar spine functions, judgment ratings, multiples of 2.5%	
	Minor loss of function	0% -5%
	Moderate loss of function	5%-25%
	Severe loss of function	25%-50%
	Very severe loss of function	50%-75%
62	Head injuries or Neuropsychiatric problems ; individual consideration	
	Minor loss of function	0% -5%
	Moderate loss of function	5%-25%
	Severe loss of function	25%-50%
	Very severe loss of function	50%-75%
63	Heart attacks (myocardial infarction)	0%-50%
64	Loss of one kidney	10%
65	Loss of other abdominal or thoracic organs; individual consideration	
	Minor loss of function	0% -5%
	Moderate loss of function	5%-25%
	Severe loss of function	25%-50%
	Very severe loss of function	50%-75%

Time interval following injury or surgery for assessment usually between 12 to 18 months. 2 years for head injuries and major nerve injuries. For amputations, time after fitting of prosthesis.

Complete and permanent loss of the use or function of a limb or a part of a member referred to in this Schedule is equivalent to the loss of the limb or part of the member.

Combined value for several impairments could include an enhancement, a reduction or use a continuous application of [A+B (1-A)]. Maximum of 100%.

If an employee has sustained an injury not mentionned in this Schedule, the Director-General shall determine the percentage of disablement in respect of the injury which the the Director-General believes will lead to a result consistent with the Schedule.

If an injury has unusually serious consequences for an employee as a result of the special nature of the employee's occupation, the Director-General may determine a larger percentage which the Director-General deems equitable

When the assessment relies on personal considerations, classify the impairment according to the diagnosis, the residual function of the organ or structure, the physical examination and evidence from clinical studies:

- *Class 0: no objective problem*
- *Class 1: mild problem: minor changes that do not render incapable lines adaptive, there is little reduction in daily activities, or alteration of physical, social or personal performance.*
- *Class 2: moderate problem: constant use of alleviating therapeutic measures, modification of the daily activities leading to more or less marked reduction in physical, personal or social efficiency or intermittent cessation of regular activities.*
- *Class 3: severe problem: clear deterioration of physical or social activities. Individual performance or serious changes in interpersonal relations. Daily activities are disrupted and the subject needs help or assistance of his entourage.*
- *Class 4: very severe problem: important state of regression or deterioration and physical dependence, require help or supervision in daily life*

- **OUTPUT 3- Recommend options for benefit packages reflecting the scope for health care of disabled workers to be delivered by the proposed EII scheme and payment methods to medical doctors to be practiced by the EII scheme.**
    - Map an overview of current situation
        - a brief profile of the healthcare system in Bangladesh and its accessibility.
        - a brief profile of the current rules and regulations in Bangladesh addressing Occupational Health.
        - the available statistical portrait regarding Occupational Health in Bangladesh RMG sector.
    - Identify the providers of primary medical treatment in Bangladesh, practicing physicians and hospitals.
    - Report on :
        - how payment for these services is made:
        - Do the service providers receive payment from third parties (eg. insurance companies)?
        - Do these service providers have access to electronic billing procedures?
        - Do physicians and/or hospitals have governing professional associations that act collectively of behalf of their members in matters of service delivery and billing procedures?
        - Discuss the need for specific accreditation of medical doctors, other health professionals or health care and rehabilitation services' providers.
    - Propose treatment protocols or continuum of care models are an accepted part of medical practice in Bangladesh,
        - Discuss this concept of an injury progressing to a chronic state is an accepted part of medical treatment,
    - Propose recommendations on the delivery of healthcare services
        - Benefit package for health care of injured or disabled workers,
        - Payment methods to medical doctors by the upcoming EII scheme.

MAP AN OVERVIEW OF CURRENT HEALTH CARE SITUATION

A review of the health in Bangladesh shows that the health status of the country's population has improved substantially over the past decade. Life expectancy at birth increased by 6 years from 2000-2012 (BBS 2014).[32] Progress were mostly under Millennium Development Goal (MDG) 1, 4 and 5 (malnutrition, under-5 and maternal mortality). However, Bangladesh continues to carry a high burden of disease that includes non-communicable diseases (NCDs), tuberculosis, respiratory infections, and neuropsychiatric conditions.

Ministry of Health and Family Welfare (MOHFW) via the 2011-2016 Strategic Plan for the Health, Population, and Nutrition Sector Development Program (HPNSDP) seeks to ensure quality and equitable health care for all citizens by improving access to and utilization of health, population, and nutrition services. From this program the following efforts, among others, have been made[33]:

- Strengthen hospital accreditation and management systems.
- Strengthen support systems by increasing the health workforce at upazila and community clinic (CC) levels, including capacity building and an enhanced focus on coordinating the implementation of operational plans (OPs), a management information system (MIS) that includes information and communications technology (ICT).

[32] National Institute of Population Research and Training (NIPORT), Associates for Community and Population Research (ACPR), and ICF International. 2016. *Bangladesh Health Facility Survey 2014.* Dhaka, Bangladesh: NIPORT, ACPR, and ICF International. p. 1

[33] Ibidem : p. 2

- Strengthen drug management and improve quality drug provision and procurement processing
- Increase coverage and quality of services by strengthening coordination with other intra- and inter-sectoral and private sector service providers.
- Pursue priority institutional and policy reforms, such as decentralization and local level planning (LLP), incentives for service providers in hard to reach areas, public private partnerships (PPPs).

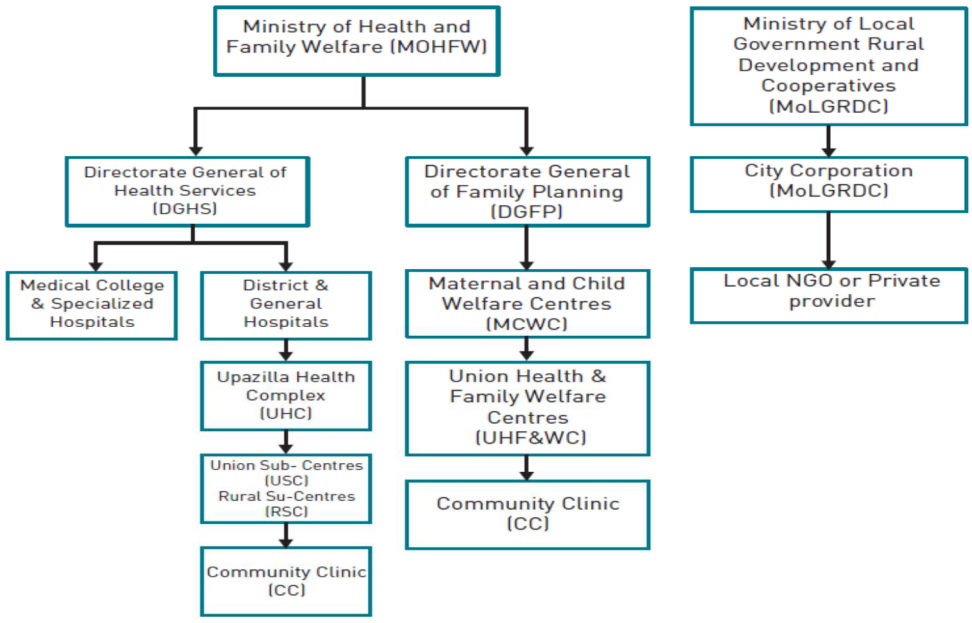
Healthy Life Expectancy (HALE) different sources

	1990	2000	2010	2012
HALE 1				
Male	-	55	-	60
Female		55	-	61
Total	-	55	-	60
HALE 2				
Male	48.4	-	56.5	-
Female	49.5	-	58.9	-

Source: WHO Global Health Observatory http://apps.who.int/gho/data/node.main.3?lang=en
GBD Healthy life expectancy http://www.healthmetricsandevaluation.org/gbd/publications/healthy-life-expectancy-187-countries-1990-2010-systematic-analysis-global-bu

The Bangladesh health system has a complex structure. It has the advantage of having a broad public base, state-owned, distributed throughout the country with coverage and universal access free. This public system has a pyramidal referential structure from community clinics to specialized referral hospitals.

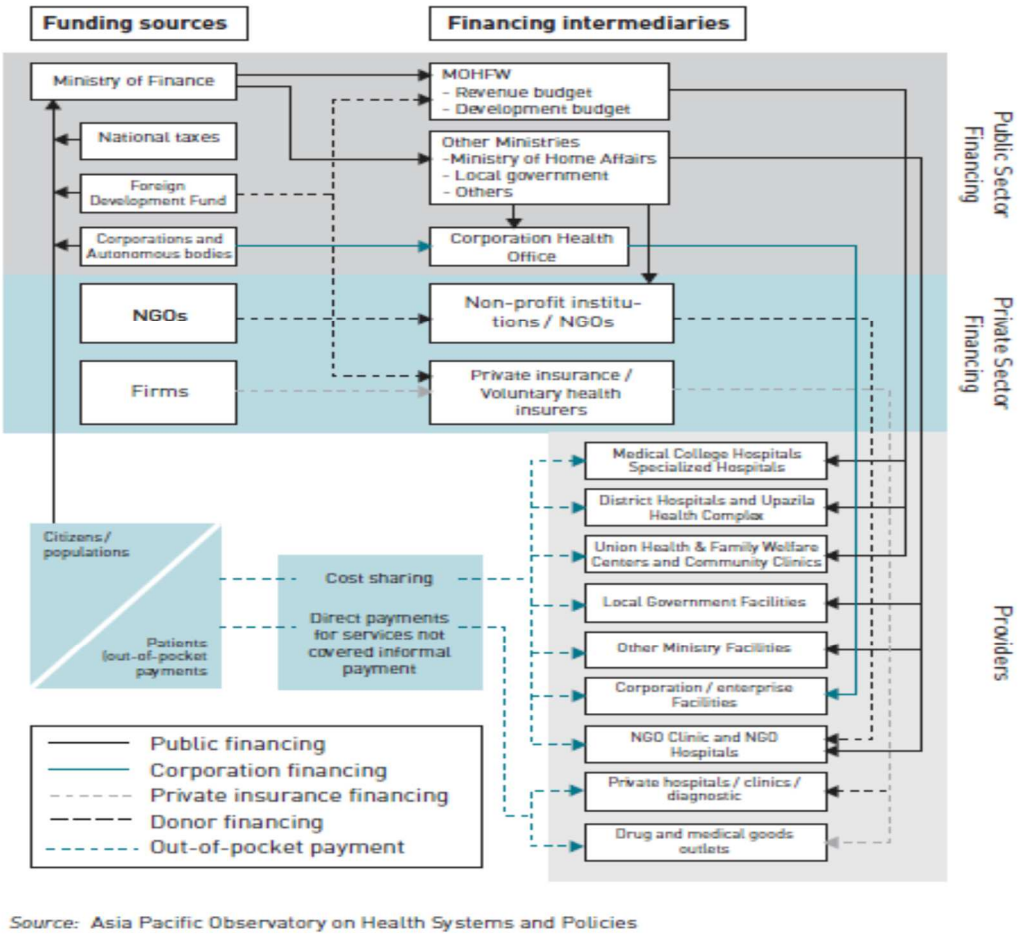
Health Service delivery organizational structure in Bangladesh



Bangladesh public health system remains highly centralized. The MOHFW is responsible for formulating national-level policy, planning, and decision-making for the provision of healthcare and education. Other responsibilities and functions range from policy planning, regulation, implementation, and health care delivery to medical education.

However, several stakeholders in the community expressed concern about the capacity and quality of services provided by government institutions, since the primary purpose of the service is to provide basic services to the disadvantaged population.

Financial flow in Bangladesh health system



Source: Asia Pacific Observatory on Health Systems and Policies

Bangladesh has formal and informal health-care providers providing outpatient and inpatient care. Health-care expenditure by patients is mostly OOPP (out of pocket payment). Informal providers are more prevalent in rural areas, as opposed to public facilities, and there are a wide range of options among the unqualified providers. About 75% in rural areas and 84% in urban areas depend on private, small, informal health-care service providers who are mostly semi-skilled with no professional training. In Bangladesh, 13% of treatment-seekers use government services, 27% use private/ NGO services, and 60% use unqualified services [34].

According to the latest Bangladesh National Health Accounts, Bangladesh spends US$ 2.3 billion on health or US$ 16.20 per person per year, of which 64% comes through out-of-pocket payments. While, according to WHO estimates, Bangladesh currently spends US$ 26.60 per person on health per year. Public funding for health is the main prepayment mechanism which constitutes 26% of total health expenditure.

Bangladesh has an extensive health infrastructure in the public and private sectors, but is not equipped with adequate human and other resources such as drugs, instruments and supplies. Despite a very fast-growing private sector, the number of existing hospital beds is not adequate to meet current demand. There is a critical shortage of trained health providers and an inappropriate skill mix, thus the country remains at a ratio of doctors to nurses much lower than the WHO

[34] Cockcroft A, Milne D and Andersson N (2004). *Bangladesh Health and Population Sector Programme, 1998–2003: The Third Service Delivery Survey, 2003: Final Report.* CIET Canada and Ministry of Health and Family Welfare, Bangladesh.

recommended ratio of 1:3:5. The trained medical doctors are being rapidly absorbed by the private sector, albeit there is less than one doctor per 3000 population and a constant rate of 20% vacancies among public sector health service posts, suggesting an alarming shortage of doctors to provide adequate services[35].

Rehabilitation

Given these limited resources, the culture of rehabilitation is poorly developed in the country. Some coverage is promoted by the Ministry of Welfare, but the burden usually falls to the relatives of a beneficiary. Rehabilitative services are limited in availability. Care can be grouped into three categories: recovery from injury like accidents (hip replacement); illnesses/disease (neurological, stroke) and substance abuse. Most of the services are concentrated in urban areas, particularly in metropolitan regions. NGOs are the main providers of rehabilitative services, followed by the public sector. Currently, the for-profit sector is also expanding in this field of care. To date, no comprehensive empirical study has been conducted to determine the incidence and prevalence of disabilities in Bangladesh[36]. Disability is not included in any routine data collection or surveillance system in the health sector but it was included in national censuses in 1991. Even though the reported prevalence rates are far below international and national estimates. As no reliable national data exists, the prevalence of disability in Bangladesh is estimated at 5–12%[37], close to WHO's global estimate which predicts that approximately 10% of all people have a disability of one kind or another. The National Institute of Traumatology and Orthopedic Rehabilitation (NITOR) hospital along with a few trauma centres located in different parts of the country provide rehabilitative care in the public sector. NITOR is a 500-bed tertiary level centre which receives referral patients from all over Bangladesh. The Centre for the Rehabilitation of the Paralyzed (CRP) is an NGO providing curative and rehabilitative services for injuries, orthopedic conditions and strokes. In the for-profit sector, there are some centres with inadequate facilities for rehabilitative services. These facilities are too costly for middle-class and poor families.

There is no long-term care facility developed in Bangladesh yet.

Legal consideration

Bangladesh has ratified ILO's seven out of eight fundamental conventions on core labour rights, two out of four governance conventions on labour issues and four out of 71 up-to-date conventions. These do not include any of the conventions related to occupational safety and health. The ILO obliges states to establish coherent national policy on occupational safety, occupational health and the working environment aiming to prevent accidents and injuries to health arising out of, linked with or occurring in the course of work, by minimizing the causes of hazards inherent to the working environment (ILO Convention 155, Article 4). To improve the environment of workplace, ILO Convention 120 has made various provisions on cleanliness, noise, temperature, ventilation, lighting, ergonomics, pure drinking water and gender-segregated toilet/washroom.

The Bangladesh Labour Act (BLA) 2006 is the most important labour legislation of the country. It has been amended three times since its formulation, and the latest amendment was done in 2013. The Labour Act consolidated 25 separate acts into single labour code in 2006. The BLA regulates trade unions, working hours, minimum wages employment and industrial relations. It sets occupational safety and health standards, compensation for injury and accidents in the workplace, maternity benefits, factory inspectorate and restrictions in child labour. The act also established the Minimum Wage Board, the Labour Court, and the National Council for Industrial Health and Safety.

[35] S.M Ahmed, and coll. *Bangladesh Health System Review*, Asia Pacific Observatory on Public Health Systems and Policies, Health Systems in Transition Vol. 5 No. 3 2015

[36] Alam KJ (2014). Bangladesh and persons with disabilities. (http://www.hurights.or.jp/archives/focus/section2/2009/03/bangladesh-and-persons-with-disabilities.html)

[37] Ibidem.

Numerous other laws have provisions related to OSH. Through the legal provisions on OSH related issues, Bangladesh established tripartite National Industrial Health and Safety Council in 2009. The Council has formulated a National Occupational Safety and Health Policy in 2013 and working towards implementation of the policy in every industrial sector. The recently amended Bangladesh Labor Act 2013 requires that safety committees be created in factories with 50 workers or more, and that safety welfare officers be posted in workplaces with more than 500 employees. It stipulates the establishment of health centres in workplaces with over 5000 employees. The Department of Inspection for Factories and Establishments (DIFE) under the Ministry of Labor and Employment (DIFE web) is responsible for enforcing labor laws. It also provides information and advice to employers and workers concerning the most effective means of complying with the legal provisions.

Occupational health

Bangladesh is moving fast towards industrialization. However, the physical and organizational infrastructure is yet to meet safety standards for occupational health of employees. New, emerging industries like shipbreaking, shipbuilding, ready-made garments and construction are highly risky and offer unsafe work environments. According to a survey in 2010, 1310 employees were killed and 899 injured in the year to June 2010 in various work-related incidents, of whom 456 workers were killed and 356 critically injured in workplace incidents due to unsafe work environments[38].

According to government officials, there are over 4000 Ready Made Garments (RMG) factories, employing more than four million workers generating billions of dollars in exports. The rapidly-growing RMG sector has shown vulnerability and accidents, such as building collapse and fire, have become almost a regular occurrence. In November 2011, 111 workers died in the Tazreen fire incident[39]. In one of the largest industrial accidents, the collapse of a multistoried building housing several ready-made garment units killed a staggering 1143 worker and injured thousands in April 2013[40]. International mobilization has taken place. This was the signal for the government, in association with the ILO and several stakeholders of civil society and industrial world, to undertake a modernization of the protection of employees in this sector.

The shipbreaking industry is another hazardous industry which is a source of livelihood for around 500 000 people directly or indirectly, and a source for 50% of the country's production of steel[41]. The hazardous waste and associated occupational health hazards pose a significant national concern. The working conditions have been very poor with very limited use of personal protective measures.

The country has not yet ratified key international labor standards on occupational safety and health (OSH) policy such as the Promotional Framework for Occupational Safety and Health Convention 2006 (No. 187) and the Occupational Safety and Health Convention 1981 (No.155) (ILO: OSH Country Profile Bangladesh). However, the recently amended Bangladesh Labor Act 2013 requires that safety committees be created in factories with 50 workers or more, and that safety welfare officers be posted in workplaces with more than 500 employees. It stipulates the establishment of health centres in workplaces with over 5000 employees. The Department of Inspection for Factories and Establishments (DIFE) under the Ministry of Labor and Employment (DIFE web) is responsible for enforcing labor laws. It also provides information and advice to employers and workers concerning the most effective means of complying with the legal provisions.

The collection of data on occupational accidents and diseases is not systematic in Bangladesh. Only some sectoral data are sometimes listed. The DIFE (Department of Inspection for Factory and Establishment), despite significant actions in different areas under its jurisdiction, cannot produce sectoral or global

[38] Occupational Safety, Health and Environment Foundation Bangladesh (2010). *OSHE Survey report on workplace accident and violation* (Jan–Jun 2010).
[39] AMRC (2013). *Tazreen Fire- the Ground Realities*. Asia Monitor Resource Centre.
[40] Odhikar (2013). *Broken dreams: A Report on the Rana Plaza collapse*.
[41] World Bank (2010). *The ship breaking and recycling industry in Bangladesh and Pakistan*. Washington, DC.

results.[42] The Bangladesh Institute of Labor Studies-BILS has recently conducted a study to document the frequency and type of events in some employers with a view to tentatively deciding on a cost projection in advance of a protection plan. These data are not yet available. A national profile, produced by BILS in 2015, included interviews with workers in the garment manufacturing sector: "According to participants of FGD and discussion meetings, the most common risk in garments sector is the pricking of finger by needle followed by cutting hand. Some other common risks mentioned by them of this sector are sewed hand by machine, burning by hot machineries, and risk of fire." Ergonomic hazard, high pitch sound, eye strain for long time work in the low light, monotonous jobs, heat stroke, breathing problem due to excessive dust and chemical hazard when liquid agents splash skin also occur.[43]

According to the ILO, it is estimated that 11.7 thousand workers suffer fatal accidents and a further 24.5 thousand die from work related diseases across all sectors each year in Bangladesh whereas work related diseases result in approximately over 2 million fatalities from over the 2.3 million fatalities that are caused throughout the whole world annually. It was also observed that a further 8 million workers suffer injuries at work–many of which will result in permanent disability. Although little research has taken place in Bangladesh, it is internationally recognized that most of the occupational deaths and injuries are entirely preventable, and could also be avoided if organization provide proper environment with all kinds of safety facilities and employers and workers took simple initiatives to reduce hazards and risks at the workplace.[44]

Considering the statistical scenario, latest labor force survey of Bangladesh published in 2009, about 51 million people are in the occupational sector in Bangladesh, of whom 22.2 million are involved in agriculture, forestry and fisheries sector, 7.8 million in trade, hotel and restaurant service occupations, about 7 million in manufacturing, 2 million in construction sector, and about 4.2 million people are involved in transport, storage and communication sector. Most of these employees operate under poor working conditions in absence of occupational health and safety standards. A study conducted in Bangladesh revealed that about 79.52% of the injured (by occupational injuries) workers were in between 40–59 age group and about 73.26% of the accidents that caused injury to hands, feet, torso, arms and eyes result in different forms of disability.[45] However, that type of injury pattern was seen due to the ignorance of workers for not using precautionary measures such as gloves, helmets, eye shields, etc., during their working hours.

A media scan report of 2007 showed that almost half of all worker deaths took place in the construction sector, with 164 separate incidents which ultimately results in a combined total of 222 deaths.[46] Bangladesh is not the only suffering of occupational health injuries but it has been estimated that at least, in developing world, they have taken measures to discard the fatalities caused by occupational hazards.

[42] J. Hossain, A. Akter, MRI Khan: *Occupational Safety and Health in Bangladesh: National Profile*, June 2015 Bangladesh Institute of Labor Studies-BILS

[43] J. Hossain, A. Akter, MRI Khan: *Occupational Safety and Health in Bangladesh: National Profile*, June 2015 Bangladesh Institute of Labor Studies-BILS, p.41

[44] Uehli K, Mehta AJ, Miedinger D, Hug K, Schindler C, et al. (2014) *Sleep problems and work injuries: a systematic review and meta-analysis*. Sleep MedRev 18: 61-73.

[45] Pham VH, Lan Tran TN, Le GV, Movahed M, Jiang Y, et al. (2013) *Asbestos and Asbestos-related Diseases in Vietnam*: In reference to the International Labor Organization/World Health Organization National Asbestos Profile. Safe Health Work 4: 117-121.

[46] Akram O (2014) "Occupational Health and Safety in Urban and Peri-Urban Bangladesh: An Important Cause and Consequence of Extreme Poverty," Governemnt of the People's Republic Bangladesh, UKaid, Swiss Agency for Development and Cooperation SDC, eprg, Centre for Development Studies,ADD International.

In the following table, we can see a distribution of conditions affecting workers in different sectors of activity. However, the figures suggest an under-reporting of events in the construction sector.

Table: Percentages of health conditions by sectors of employment (NCLS data 2002) [47]

By health conditions	Injury/Illness	Tiredness/ Exhaustion	Body injuries	Backache	Other health problems
Agriculture	48.84	60.93	20.1	47.02	58.74
Manufacturing	22.87	18.04	29.73	30.09	19.45
Construction	8.21	5.5	18.75	3.45	4.34
Wholesale and Retail	17.07	12.43	26.07	19.44	13.63
Service	3.02	3.11	3.35	0	3.84

IDENTIFY THE PROVIDERS OF PRIMARY MEDICAL TREATMENT IN BANGLADESH' PRACTICING PHYSICIAN AND HOSPITALS.

The Bangladesh health system has a complex structure. It has the advantage of having a broad public base, state-owned, distributed throughout the country with coverage and universal access free. This public system has a pyramidal referential structure from community clinics to specialized referral hospitals.

The health service delivery system of Bangladesh is an intricate web of public health departments, NGOs, and private institutions.

To support this public network with limited capacity despite the will of the government, since 1976, two parallel service networks have been developed:

- a first one, consisting of institutions of varying capacities and resources belonging to the private sector. Naturally, because of its vocation for profit, this network is aimed rather at a clientele in means to pay for its care. Despite direct client funding, the supply and type of care varies greatly. Only markets with significant income potentials are developed, leaving the isolated village areas underserved.

- the second, made up of actors linked to charitable or non-governmental organizations (NGOs), aimed above all at disadvantaged groups. This service offer, often specialized, acts as a complement to the universal public network. It may, however, be precarious given more random funding. The NGO sector has emerged providing new options and innovations. Bangladesh is known worldwide for having one of the most dynamic NGO sectors, with over 4000 NGOs working in the population, health and nutrition sector[48]. The role of

Health-care services provided by public facilities in Bangladesh

Level of care	Service facility	Services
Primary level care	Ward	
	Community clinics	Maternal and neonatal health care, integrated management for childhood illness, reproductive health and family planning services, EPI, nutrition education and supplement, health education and counselling, identifying severe illnesses like tuberculosis, malaria, pneumonia, EmOC, life-threatening influenza, anthrax etc. treatment of minor ailments and first-aid, referral to union level facilities, upazila health complexes and district hospitals. Out-Patient Services
	Union	
	Hospitals	
	Union Sub-Centre	Out-Patient Department (OPD)
	Union Health and Family Welfare Centre	Out-Patient Department (OPD)
Secondary and tertiary level care	Secondary	
	Upazila (Sub-district) Health Complex	Comprehensive emergency obstetric care services (EOC), gynaecology, anaesthesia, nursing and basic laboratory facilities.
	District hospital	Medicine, surgery, orthopaedics, Eye, ENT
	General hospital	Medicine, surgery, orthopaedics, Eye, ENT
	Tertiary	
	Medical college hospitals	Medicine, surgery, orthopaedics, Eye, ENT, Eye and ENT, ARI, Reproductive care etc.
	Infectious disease hospital	Treatment of infectious diseases
	Specialized hospital	Selected services
	Chest disease/TB hospitals	Chest disease
	Leprosy hospital	Leprosy
	Specialized centers	Selected relevant services
	Specialized hospital affiliated with postgraduate	Selected relevant services
	Other hospitals	

Source: Asia Pacific Observatory on Health Systems and Policies

[47] International Labour Organization (2013) "Chronology of recent events in the Bangladesh Ready Made Garment (RMG) sector."

[48] Perry HB (2000). *Health for all in Bangladesh: lessons in primary health care for the twenty-first century*. University Press.

NGOs is growing as donors are channelling significant and increasing amounts of funding directly to them. The larger national NGOs (BRAC, Gonoshasthaya Kendra, Grameen Bank) have strong organizations and the management capacity to provide both preventive and curative services. These NGOs are well-equipped with training and research facilities and information management systems.

The workers of Bangladesh enjoy some direct health service from the government, non-government and employer's organizations. The MoLE (Ministry of Labor and Employment) operates Labour Welfare Centre. The Centre provides direct health services like treatment and free medicine for the workers and their family. There is a practice of providing health service for the government employees through separate departmental service, the government hospitals have also specialized unit for the facilitation of workers rehabilitation. The nongovernment and labour rights organization provide health service through establishing separate health support service center and organizing health camps. The employer's association, like BGMEA, also organizes the health service for its workers as a corporate social responsibilities (CSR) activity.

Labour Welfare Center provides free medical treatment and free medicine, pathological test, family planning materials/contraceptives and counseling services for workers and their family members.[49] Currently, 30 Labour Welfare Centers are in operation with Medical Officer, Family and Welfare Officer and Labour Welfare Organizer (Residential and Non-residential) to provide welfare support to the workers. The establishment based health services is available in Bangladesh mainly for the employees of government establishment. Such the jute mills under the Bangladesh Jute Mills Corporation have hospitals and primary medical treatment centers to provide health facilities to their officers, employees and workers. It has 4 Hospitals and 20 primary medical treatment centers. The railway department has also medical facilities for its employee. The public universities of Bangladesh have also their own medical centres where the employees have access to health services. CRP's innovative Work Rehabilitation Program is conducted by the Occupational Therapy Department to help people with a spinal cord injury to return to their previous work. Each month, 2 patients are chosen to be involved. The physical skills necessary for their work are identified and therapy is targeted to these skills. A follow up visit is conducted in their workplace to assess the progress of these interventions.[50]

BGMEA runs 12 Health Centres for the garment workers and their families. These centres provide pre–medical services and medicines at free of cost. Besides, it run awareness program on HIV/ AIDS, tuberculosis, reproductive health and the use of contraceptives. The BGMEA also runs hospitals at Chittagong and Dhaka with outdoor and indoor healthcare facilities including surgery, burn unit, and modern laboratory and all diagnostic facilities. BILS provides rehabilitation and physiotherapy services to the injured workers.[51]

REPORT ON PAYMENT, MEDICAL ASSOCIATION AND ACCREDITATION.

Common payment method practiced by the service providers is direct by cash from the consumer. Bank payment for the services is normally discouraged, unless otherwise the service paid by an institute. As a part of the payment process, money receipt is produced upon full payment, mentioning service details and charges in a bill.

It is not unlikely to receive payment from third parties, on behalf of service consumer. There were instances that BRAC made payment, as a third party on behalf of the workers injured by Rana Plaza collapse to CRP and GK for the services. Generally accepted practice by the service provider is to instantly pay, when the service is accomplished. It is common practice for health care institutions to agree to contract services

[49] http://dol.gov.bd/citizen-charter/
[50] J. Hossain, A. Akter, MRI Khan: *Occupational Safety and Health in Bangladesh: National Profile*, June 2015 Bangladesh Institute of Labor Studies-BILS
[51] BGMEA Hospital, Dhaka, Emdad Haq on 1 June 2014

with a third-party payer (as a specific local employer) by agreement (MoU) if the beneficiaries are identified under this agreement.

The service providers listed have usually practice manual or computer typed billing rather than electronic billing process. Some private hospitals practice electronic billing.

The Bangladesh Medical Association (BMA) is the largest medical association in the country. Constituent Assembly in 1976, its offices are located in Dhaka. It has several local branches distributed throughout the country. Its mission supports an associative and scientific life. It encourages the emulation of its members but also participates in charitable, humanitarian and public health education activities. It also makes political representations on the issues affecting the medical world.[52]

The regulatory authority for medical practice in Bangladesh, existing since 1973, is the Bangladesh Medical & Dental Council (BM&DC)[53] is a statutory body with the responsibility of establishing and maintaining high standards of medical education and recognition of medical qualifications in Bangladesh. It registers doctors to practice in Bangladesh, in order to protect and promote the health and safety of the public by ensuring proper standards in the practice of medicine. Through its committees, it has authority over the ethical and disciplinary issues of the profession. It also makes recommendations regarding the registration, necessary training and certification of members.

There is no mandatory continuing medical education (CME) system, nor is there a requirement for periodic professional recertification. Once the license is obtained, the only obligation is to pay the fees and renewal of registration every three years.

[52] http://www.bma.org.bd/
[53] http://bmdc.org.bd/

PROPOSE TREATMENT PROTOCOLS OR CONTINUUM OF CARE MODELS

Continuity of care is the way care is experienced by a patient as coherent and connected in time. This aspect of care is the result of good information transfer, good interpersonal relationships and care coordination.[54]

Continuum of Care[55] is a concept involving a system that guides and tracks patients over time through a comprehensive array of health services spanning all levels and intensity of care. It covers the delivery of healthcare over a period of time, and may refer to care provided from birth to end of life. Healthcare services are provided for all levels and stages of care.

Continuum of Care includes both services and integrating mechanisms. The services can be broken down into seven basic categories:

- Extended care
- Acute hospital care
- Ambulatory care
- Home care
- Outreach
- Housing
- Wellness

The four basic integrating mechanisms are:

- Planning and management
- Care coordination
- Case-based financing
- Integrated information systems

The Continuum of Care can include a wide set of services, and does not usually refer to a formal system of care delivery. It will vary for each patient depending on their unique needs. The following are examples of the types and settings of healthcare services that are regularly connected through the Continuum of Care:

- Acute healthcare services
- Hospitals
- Emergency departments
- Inpatient services
- Outpatient services
- Urgent care
- Physician practices
- Long-term care
- Assisted living
- Skilled nursing facilities
- Rehabilitation centers
- Home care
- Visiting nurse services
- Hospices / Palliative care
- Behavioral health
- Wellness care
- Government / Public health services
- Care management
- Research
- Deceased – care for the societal needs of the family

For occupational health purposes, continuity of care would be applied at the time of hiring by a set of preventive measures, and then, covering all the therapeutic and rehabilitation actions following an unfortunate event at work, for a return to maximum social reintegration, both of the affected worker and relatives.

The notion of continuity of care is important because in many severe injuries or occupational diseases, the condition will not progress toward a restitution *ad integrum* of the previous well-being state. In many cases, some residual impairment will follow and the situation will need further medical care and follow-up, chronic treatment or medication and even new surgeries.

[54] Concepts et mesures de la continuité des soins[PDF] (free transl.) *www.fcass-cfhi.ca/Migrated/PDF/ResearchReports/.../cr_contcare_f.pdf*

[55] http://www.himss.org/definition-continuum-care

Injury time line	Hiring	Pre-employment health status Specific training in OHS and to work tasks
	 Work injury	
	First Aid	First responders /Secure area Stabilization and support Local medical services
	Acute care Nearest hospitals of the Ell pool (pre-selected).	Admit medical emergency Treatment start
	Hospital care	Investigation and Imaging Surgery or Medical care Discharge and Follow-up
	Recovery Phase	Medical follow-up Chronic treatments if needed
Full	With sequelae	
Return to work (RtW)	Rehabilitation	Rehabilitation
	Permanent Partial disability	Total Permanent disability
	Return to work (RtW) and/or Vocational therapy and/or Earning capacity replacement /pension	Earning capacity replacement /pension

An integrated and multi-tiered system with specific competencies is proposed for full national ownership of Occupational Health and Safety could include the following elements:

Primary care level		
	Working population	First Aid / First responders
	Field staff	- Occupational Hygiene and Safety inspectors - Occupational Health nurses
	Physicians	- Company doctors - General practitioners - Polyclinics
	Professionals and technicians	- Audiologist - Audio-prosthetist
Hospital care level		
	Nurses	- General & surgical nurses - Special interest: wound care, ostomy care

	Professionals and technicians	- Occupational therapist - Orthotist / prosthetist - Psychologist	- Physical therapist-Respiratory therapist - Speech therapist
	Physicians	- General practitioners - Anesthesiologist - Dermatologist - ENT - General surgeon - Lung specialist - Neurologist - Neurosurgeon - Ophthalmologist - Orthopedic surgeon - Physiatrist (Physical Medicine and Rehab.) - Plastic surgeon - Psychiatrist - Radiology	Should be occasionally required: - Anatomo-pathologist - Cardiologist - Internal medicine - Oncologist
Academic level			
	Specialists in occupational health and hygiene	- Toxicologists - Community and Public Health - Researchers	

PROPOSE RECOMMENDATIONS ON THE DELIVERY OF HEALTHCARE SERVICES

Convention C 121 (C121 - Employment Injury Benefits Convention, 1964 [Schedule I Amended in 1980])[56] of the ILO, specifically pertains to benefits available in case of accidents and occupational diseases. For purposes of recall, and without minimizing the values of the other Articles of the Convention, we retain especially the following concepts in order to list Benefit Package for health care of disabled workers:

- ***Article 6***
  - *The contingencies covered shall include the following where due to an employment injury:*
    - *(a) a morbid condition;*
    - *(b) incapacity for work resulting from such a condition and involving suspension of earnings, as defined by national legislation;*
    - *(c) total loss of earning capacity or partial loss thereof in excess of a prescribed degree, likely to be permanent, or corresponding loss of faculty; and*
    - *(d) the loss of support suffered as the result of the death of the breadwinner by prescribed categories of beneficiaries.*
- ***Article 10***
  - *Medical care and allied benefits in respect of a morbid condition shall comprise:*
    - *(a) general practitioner and specialist in-patient and out-patient care, including domiciliary visiting;*
    - *(b) dental care;*
    - *(c) nursing care at home or in hospital or other medical institutions;*

[56] http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C121

        - *(d) maintenance in hospitals, convalescent homes, sanatoria or other medical institutions;*
        - *(e) dental, pharmaceutical and other medical or surgical supplies, including prosthetic appliances kept in repair and renewed as necessary, and eyeglasses;*
        - *(f) the care furnished by members of such other professions as may at any time be legally recognised as allied to the medical profession, under the supervision of a medical or dental practitioner; and*
        - *(g) the following treatment at the place of work wherever possible:*
            - *(i) emergency treatment of persons sustaining a serious accident;*
            - *(ii) follow-up treatment of those whose injury is slight and does not entail discontinuance of work.*
    - *The benefits provided in accordance with paragraph 1 of this Article shall be afforded, using all suitable means, with a view to maintaining, restoring or, where this is not possible, improving the health of the injured person and his ability to work and to attend to his personal needs.*
- ***Article 12***
    - *Where a declaration provided for in Article 2 is in force, medical care and allied benefits shall include at least--*
    - *(a) general practitioner care, including domiciliary visiting;*
    - *(b) specialist care at hospitals for in-patients and out-patients, and such specialist care as may be available outside hospitals;*
    - *(c) the essential pharmaceutical supplies on prescription by a medical or other qualified practitioner;*
    - *(d) hospitalisation, where necessary; and*
    - *(e) wherever possible, emergency treatment at the place of work of persons sustaining an industrial accident.*

- ***Article 14***
    - *Cash benefits in respect of loss of earning capacity likely to be permanent or corresponding loss of faculty shall be payable in all cases in which such loss, in excess of a prescribed degree, remains at the expiration of the period during which benefits are payable in accordance with Article 13.*
    - *In case of total loss of earning capacity likely to be permanent or corresponding loss of faculty, the benefit shall be a periodical payment calculated in such a manner as to comply either with the requirements of Article 19 or with the requirements of Article 20.*
    - *In case of substantial partial loss of earning capacity likely to be permanent which is in excess of a prescribed degree, or corresponding loss of faculty, the benefit shall be a periodical payment representing a suitable proportion of that provided for in paragraph 2 of this Article.*
    - *In case of partial loss of earning capacity likely to be permanent which is not substantial but which is in excess of the prescribed degree referred to in paragraph 1 of this Article, or corresponding loss of faculty, the cash benefit may take the form of a lump-sum payment.*
    - *The degrees of loss of earning capacity or corresponding loss of faculty referred to in paragraphs 1 and 3 of this Article shall be prescribed in such manner as to avoid hardship.*

Payment arrangements usually operate at the institutional level. The current practice of remunerating doctors in the public system is in the form of wage-earners obtained through the hospital administrations, budgeted by the government. The same concept applies to the level of services provided by institutions affiliated to

NGOs or private institutions. However, in the latter, especially for some specialists or recognized doctors, a lump sum of performance can be added for each patient seen.

The payment method may be open in two forms:

- **Cash**: From the estimation of service provider, a cash advance to be given to the injured worker or his assistance, so that procedural delay can be avoided at the beginning of medical or rehabilitation service. Any service from freelance professionals or providers not in the pool should be directly paid cash by the injured worker/someone on his behalf.

- **Electronic/typed Billing**: Once the rehabilitation services are completed or the person is discharged, then service provider will make a bill to the concern EII payment unit, mentioning the ID number of the worker and the service provided. The bill should be acknowledged by the worker who receives the service. This kind of payment will be made through issuing bank cheque or fund transfer from bank to bank.

- **OUTPUT 4-Recommend options for benefit packages reflecting the scope for physical and vocational training of disabled workers to be provided by the proposed scheme and payment methods to training institutions to be practiced by the proposed scheme.**
    - Map an overview of current situation
        - A brief profile of the physical and vocational training system in Bangladesh and its accessibility.
        - A brief profile of the current rules and regulations in Bangladesh addressing rehabilitation and reintegration of persons with disabilities.
        - The available statistical portrait regarding rehabilitation services in Bangladesh.
    - Identify the providers of rehabilitation services in Bangladesh.
    - Identify the providers of physical and vocational training.
    - Report on :
        - How payment for these services is made:
        - Do the service providers receive payment from third parties (e.g. insurance companies).
        - Do these service providers have access to electronic billing procedures?
        - Do trainers and/or training providing institutions have governing professional associations that act collectively of behalf of their members in matters of service delivery and billing procedures?
        - Discuss the need for specific accreditation of the trainers, other rehabilitation/ reintegration services' providers.
    - Propose rehabilitation protocols or continuum of rehabilitation/ reintegration models are an accepted part of medical practice in Bangladesh,
        - Enforce the capacity for a multi-disciplinary approach to rehabilitation when an injury becomes chronic, and
        - Plan the availability of expertise in functional capacity evaluation of injured workers.
    - Propose recommendations on the delivery of rehabilitation services
        - Benefit package for physical and vocational rehabilitation of disabled workers.
        - Payment methods to training institutions by the upcoming EII scheme.

MAP AN OVERVIEW OF CURRENT SITUATION IN REHABILITATION

Physical and vocational training system in Bangladesh is being under policy and strategic framework. Under the Ministry of Education, a council[57] called National Skills Development Council (NSDC) is responsible for implementation of National Skills Development Policy 2011, formulation of National Skills Development and Employment Law 2016 (draft), formulating strategic paper on Inclusion of people with disabilities into Technical Education and Training and its implementation. The council recognizes skills level of the formally trained persons from registered Technical and Vocational Education and Training (TVET) centres or informally trained persons or under the National Training and Vocational Qualifications Framework (NTVQF). A list of Industry Skills Councils (ISC) has been formed with recognition of NSDC. RMG and Textile ISC (RTISC)[58] is one of them, has been operational since September 2015. The council regularly updates skills based occupations, training, competency and employment prospects of them.

Physical and vocational training specially designed for people with disabilities are inadequate. However, there is a hope for future development as the strategic paper for disability inclusion into the training centres are in progress, to be approved and implemented. On the other hand, a few Government and NGOs provide

[57] NSDC website: http://www.nsdc.gov.bd/en
[58] Annual Report 2015 – 2016, NSDC Secretariat, MoLE

vocational training specially designed for people with disabilities. Centre for the Rehabilitation of the Paralysed (CRP)[59] is one of them that provides both physical and vocational training as part of their comprehensive rehabilitation and community reintegration programme. Employment and Rehabilitation center for Physically Handicap (ERCPH) under the Department of Social Service[60] has a vocational centre established in 1978, dedicated for those youth with physical, visual and speech and hearing impairments. The department also provides same service at Bagerhat sub-centre.

Clause 8 of the 'Disability Rights and Protection Act 2013' states that the habilitation and rehabilitation of persons with disabilities will be secured at minimum care of standard level. The act makes provision of both community and institution based rehabilitation depending on the disability types and severity and take specified steps to produce professional caregivers. Non-government initiative in this regard should be encouraged.

World Report on Disability[61] defines rehabilitation as, "a set of measures that assist individuals who experience, or are likely to experience, disability to achieve and maintain optimal functioning in interaction with their environments". Whereas, the national Disability Rights and Protection Act 2013 describes rehabilitation as "assisting disabled people within their own community, so that it can ensure participation of them". Although the concept of rehabilitation is broad, not everything to do with disability can be included in the term. Rehabilitation targets improvements in individual functioning – for example, by improving a person's ability to eat and drink independently. Rehabilitation also includes making changes to the individual's environment – for example, by installing a toilet handrail. But barrier removal initiatives at societal level, such as fitting a ramp to a public building, are not considered rehabilitation in the World Report.

Rehabilitation services, in particularly physiotherapy, occupational therapy, speech therapy, assistive devices are inadequately regulated and unevenly distributed. Most of the services are located in Dhaka and some are in major divisional cities. Mainly Ministry of Social Welfare[62] is the concern regulatory and public service providers. Under this ministry, the Department of Social Service[63] is broadly deals with welfare or rehabilitation for vulnerable population in Bangladesh. Jatyo Protibandhi Unnaon Foundation (JPUF)[64] (in English: National Disability Development Foundation) is a government entity established in 1999 as an autonomous body under the line ministry of Social Welfare, dedicated to serve people with disabilities through different means of rehabilitation. The foundation runs 18 programmes to serve people with disabilities. A fifteen-storied complex has been under construction in order to cater rehabilitation and specialised services of people with disabilities and awareness of disability.

Apart from government facilities, CRP, as an NGO is a major rehabilitation service provider in Bangladesh. The organization not only renders rehabilitation services, vocational training and specialised SCI[65] indoor treatment, but also provide certificate, diploma and graduation level professional training (Occupational Therapy, Physiotherapy, Speech Therapy, P&O and Rehabilitation).

[59] CRP website - http://www.crp-bangladesh.org/
[60] Department of Social Service: http://www.dss.gov.bd/
[61] World Report on Disability 2011, Page 96; WHO & World Bank
[62] Ministry of Social Welfare's website: http://www.msw.gov.bd/
[63] Website – Department of Social Service: http://www.dss.gov.bd/
[64] Disability Foundation - http://www.jpuf.gov.bd/
[65] Spinal Cord Injury

Rehabilitation service coverage, at a glance, by these two major organizations is stated below:

Organization	Centres	Rehabilitation Services	Vocation Training	Job placement
JPUF	103[66]	376,642	---	---
CRP	8[67]	350378	3094	1593

IDENTIFY BENGLADESH PROVIDERS OF REHABILITATION SERVICES.

The Meeting Report and web sources reveal that dedicated rehabilitation services in Bangladesh are mainly provided by public and NGO service providers. There are some private service providers that sell assistive devices including wheelchair, crutches, walker etc. The general hospitals at major cities and districts have some therapy intervention service unit. Ministry of Labour and Employment reports that there are two hospitals under PPP (Public Private Partnership) are being built in Tungi an Narayangonj, to render specialised medical and rehabilitation service available for the injured workers. In this scenario, following major rehabilitation service providers are identified, most of them have service coverage in different divisional or district locations other than Dhaka: -

No.	Service Provider	Major Services	Websites
Public (Government)			
1	NITOR	- PT and OT[68] treatment - Specialised orthopedic in/out patient treatment - Assistive devices service and production - P&O[69] - PT courses - Advance orthopedic courses	http://nitorbd.com/
2	JPUF	- PT and OT treatment - Assistive devices - Mobile therapy service	http://www.jpuf.gov.bd/
NGOs			
3	CRP	- PT, OT and Speech Therapy treatment - Specialised SCI in/out patient treatment - Assistive devices service and production - P&O services and training - PT, OT & Speech Therapy courses	http://www.crp-bangladesh.org/

[66] Centres for Disability Services and Supports
[67] Divisional and Dhaka based
[68] Physiotherapy and Occupational Therapy
[69] Prosthesis and Orthesis to support missing and deformed limbs

4	CDD	- Assistive devices service and production - P&O services and training - Field based rehabilitation therapy training	http://www.cdd.org.bd/
5	SAHIC[70]	- Audio-metric test - Assessing and fitting hearing aid - ENT medical treatment - Sign language training	www.sahic.org/
6	HI Care[71]	- Audio-metric test - Assessing and fitting hearing aid - ENT medical treatment - Sign language training	www.hicarebd.org/

IDENTIFY BANGLADESH PROVIDERS OF PHYSICAL AND VOCATONAL TRAINING.

No.	Service Provider	Major Services	Websites
Public (Government)			
1	ERCPH	- Physical and vocational training for physical, visual and speech-hearing impaired persons - Job placement at plastic industry, poultry, tailoring - Full time residential facilities	http://www.dss.gov.bd/
NGOs			
2	CRP	- Physical training (Therapeutic) - Vocational training (e,g. sewing, tailoring etc)	http://www.crp-bangladesh.org/

REPORT ON PAYMENT AND PROFESSIONAL ACCREDITATION.

Common payment method practiced by the service providers is direct by cash from the consumer. Bank payment for the services is normally discouraged, unless otherwise the service paid by an institute. As a part of the payment process, money receipt is produced upon full payment, mentioning service details and charges in a bill.

It is not unlikely to receive payment from third parties, on behalf of service consumer. There were instances that BRAC made payment, as a third party on behalf of the workers injured by Rana Plaza collapse to CRP and GK for the services. Generally accepted practice by the service provider is to instantly pay, when the service is accomplished. It is common practice for health care institutions to agree to contract services with a third-party payer by agreement (MoU) if the beneficiaries are identified under this agreement.

The service providers listed have usually practice manual or computer typed billing rather than electronic billing process. Some private hospitals practice electronic billing.

[70] Society for Assistance To Hearing Impaired Children
[71] Society for Education & Care of Hearing Impaired Children of Bangladesh

There is no existence of professional association of the training providing institutes. NGO service providers have networks on development issues, in which the matters of service delivery and billing process can be raised.

National Training and Vocational Qualifications Framework (NTVQF) has been developed in Bangladesh. Under this framework NSDC is entrusted to monitor the quality of training providers and recognize skills level. In this framework, the accreditation of trainers and rehabilitation service providers will improve quality of services.

PROPOSE REHABILITATION PROTOCOLS OR CONTINUUM REHABILITATION/REINTEGRATION MODELS.

A continuum from the onset of injury to the workers to medical and/or rehabilitation and then to the RTW (return to work) is necessary to be designed. Principle of this continuum is to practice a barrier free access system to the services in the process and ensure optimal efficiency. Following sequential steps with necessary support are recommended: -

Step	Action	Inputs	Instruction
Step 1: Onset of accident/injury and screening	- Shift to assigned general medical practitioner - Quick screening - Refer to specialised hospitals/rehabilitation centres/bed rest	- Transport - Assistance - Identity documents	General medical practitioner must be reached within 15 minutes of the onset. Factory needs to assigned staff and logistics readily avail for such emergency. Every worker under this scheme must have unique ID number. ID number will be cancelled on job completion.
Step 2: Transfer to the Medical Emergency or Bed rest	- Move to bed rest - Admit medical emergency - Treatment start	- Transport - Assistance - Identity documents - Petty cash	Nearest hospitals of the EII pool (pre-selected). Shift within 30 minutes after referral. In case of critical emergence, shift to nearest available non-pool hospital, as advised by the Doctor. Petty cash is subject to reimburse.
Step 3: Transfer to rehabilitation service.	- Rehabilitation and/or disability assessment - Plan for rehab process - Continue sessions for physical and psycho-social recovery/adjustment - Training for disability appliances (if needed)	- Transport - DAT or other tools - Identity documents - Petty cash	Standard Disability Assessment Tools (DAT) will be used for assessment. Rehabilitation service providers must be from the pool of EII. Petty cash is subject to reimburse.
Step 4:	- Training needs assessment	- Assessment tools	This training might not be necessary in case of mild

Physical and Vocational Training	- Select mutually agreed training	- Identity documents - Petty cash	level of injury and impairment.
Step 5: Return to work (RtW)	- Job skills assessment - Job matching - Meeting with employer - Agreement	- Documents - Assessment tools	RtW will depend on job skills matching to the jobs variety of previous workplace. In case of not matching, then options will be searched from other EII covered employers or any self-employment options.

Along this continuum, there must be a grievance mechanism in the process of in-time financing, employer's supports, medical/rehabilitation/vocational training services and RtW. A set of 10 hotline numbers will be given to all workers at the time of employment, regarding any complain on the issue of workplace injury and the necessary intervention entitled. The hotline numbers will be controlled by a few designated officers working at DIFE. The aggrieved persons' verbal complain will be recorded and preserved as evidence for investigation to be started immediately. However, the assigned investigating officer will prepare a written complain (on a prescribed format) alongside the recorded one.

In case of chronic stage of injury recovery or permanent impairment, a multi-disciplinary approach is recommended through joint assessment and intervention by a rehabilitation professionals group such as:

- Occupational Therapist for functional skills assessment and activity analysis and design occupational performance development programme
- Physiotherapist to assess physical endurance, movement, range of motion and alignment; and apply therapeutic modalities
- Clinical psychologist to assess mental state (stress, anxiety, shock, self-esteem, mood etc.) and provide counseling or psychotherapy
- Speech and language therapist to assess articulation and apply muscle relearning or stimulation techniques
- P&O Specialist for fitting of missing limbs and align the deformed position

In order to ensure availability, the EII scheme is recommended to a pool of 3-4 rehabilitation service providers that have minimum 10 years of experience in providing major therapeutic intervention mentioned in the above list of professionals. The number of service providers may increase with estimated needs. Alongside the service providers, a pool of 10 – 20 freelance professionals having minimum 5 years of clinical experience is recommended for addressing sudden increase of caseload of workers injury.

PROPOSE RECOMMENDATIONS ON THE DELIVERY OF REHABILITATION SERVICES

Physical and vocation rehabilitation of disabled workers are recommended with following benefit items:

1. Physical rehabilitation may include:
   - Occupational therapy
   - Physiotherapy
   - Reconstructive surgery
   - Artificial limbs and prosthetics fitting
   - Mobility aids such as wheel chairs, walking stick, hearing aids
   - Workplace or home modification for functional comfortability

2. Vocational rehabilitation may include:
   - Training in selected areas such as electrical wiring, sewing, radio / TV repair, air conditioner and fridge repair, plumbing, stenography, secretarial skills and others.

- Return To Work (RtW) programme

The payment method may be open in two forms:

- Cash: From the estimation of service provider, a cash advance to be given to the injured worker or his assistance, so that procedural delay can be avoided at the beginning of medical or rehabilitation service. Any service from freelance professionals or providers not in the pool should be directly paid cash by the injured worker/someone on his behalf.
- Electronic/typed Billing: Once the rehabilitation services are completed or the person is discharged, then service provider will make a bill to the concern EII payment unit, mentioning the ID number of the worker and the service provided. The bill should be acknowledged by the worker who receives the service. This kind of payment will be made through issuing bank cheque or fund transfer from bank to bank.

2

2 SEMINAR ON HEALTH CARE AND BENEFIT PACKAGES FOR INJURED WORKERS DUE TO WORK RELATED INJURIES AND DISEASES

Accompanying PowerPoint of the seminar on health care, extracted from the original study.

SEMINAR ON HEALTH CARE AND BENEFIT PACKAGES FOR INJURED WORKERS DUE TO WORK RELATED INJURIES AND DISEASE

Benefit packages for health care and rehabilitation

Jacques Pelletier, md

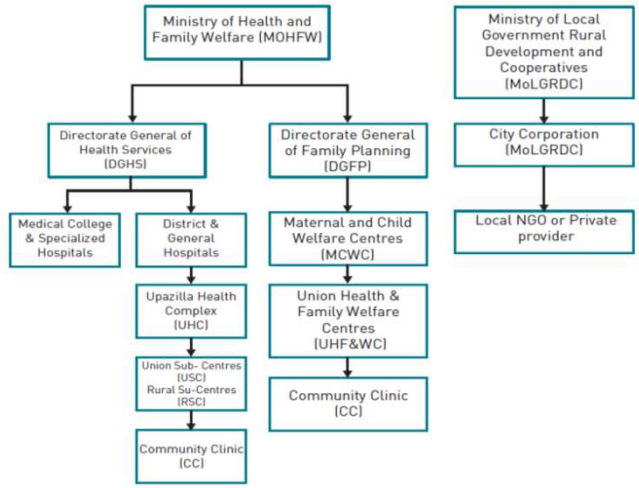
International Labour Organization

Agenda

- Health services in Bangladesh
- Useful Service providers in Occupational Health and Rehabilitation
- Impacts
- Some basic definitions
- Medical benefits
- How neighbors go?
- Impairment? Disability?
- Medical care by MoLE?

International Labour Organization

Health Service delivery organizational structure in Bangladesh



Source: Asia Pacific Observatory on Health Systems and Policies

International Labour Organization

Health Service delivery organizational structure in Bangladesh

The health service delivery system of Bangladesh is an intricate web of public health departments, NGOs, and private institutions. Bangladesh public health system remains highly centralized. The MOHFW is responsible for formulating national-level policy, planning, and decision-making for the provision of healthcare and education.

A review of the health in Bangladesh shows that the health status of the country's population has improved substantially over the past decade. Life expectancy at birth increased by 6 years from 2000-2012 (BBS 2014). Progress were mostly under Millennium Development Goal (MDG) 1, 4 and 5 (malnutrition, under-5 and maternal mortality)

However, several stakeholders in the community expressed concern about the capacity and quality of services provided by government institutions, since the primary purpose of the service is to provide basic services to the disadvantaged population.

International Labour Organization

July 2017

Seminar on Health care and Benefit Packages for Injured workers due to work related injuries and diseases

Health Service delivery organizational structure in Bangladesh

Bangladesh has an extensive health infrastructure in the public and private sectors, but is not equipped with adequate human and other resources such as drugs, instruments and supplies.

Despite a very fast-growing private sector, the number of existing hospital beds is not adequate to meet current demand. There is a critical shortage of trained health providers and an inappropriate skill mix, thus the country remains at a ratio of doctors to nurses much lower than the WHO recommended ratio of 1:3:5. The trained medical doctors are being rapidly absorbed by the private sector, albeit there is less than one doctor per 3000 population and a constant rate of 20% vacancies among public sector health service posts, suggesting an alarming shortage of doctors to provide adequate services.

Given these limited resources, the culture of rehabilitation is poorly developed in the country. Some coverage is promoted by the Ministry of Welfare, but the burden usually falls to the relatives of a beneficiary. Rehabilitative services are limited in availability. Most of the services are concentrated in urban areas, particularly in metropolitan regions. NGOs are the main providers of rehabilitative services, followed by the public sector.

List of professionals and service providers useful in Occupational Health and Rehabilitation

Primary care level		
	Working population	First Aid / First responders
	Field staff	- Occupational Hygiene inspectors - Occupational Health nurses,
	Physicians	- Company doctors - General practitioners - Polyclinics
	Professionals and technicians	- Audiologist - Audio-prosthetist
Hospital care level		
	Nurses	- General & surgical nurses - Special interest: wound care, ostomy care
	Professionals and technicians	- Occupational therapist - Orthotist / prosthetist - Psychologist - Physical therapist - Respiratory therapist - Speech therapist
	Physicians	- General practitioners - Anesthesiologist - Dermatologist - ENT - General surgeon - Lung specialist - Neurologist - Neurosurgeon - Ophthalmologist - Orthopedic surgeon - Physiatrist (Physical Medicine and Rehabilitation) - Plastic surgeon - Psychiatrist - Radiology Should be occasionally required: - Anatomo-pathologist - Cardiologist - Internal medicine - Oncologist
Academic level		
	Specialists in occupational health and hygiene Academist	- Toxicologists - Community and Public Health - Researchers

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Impacts

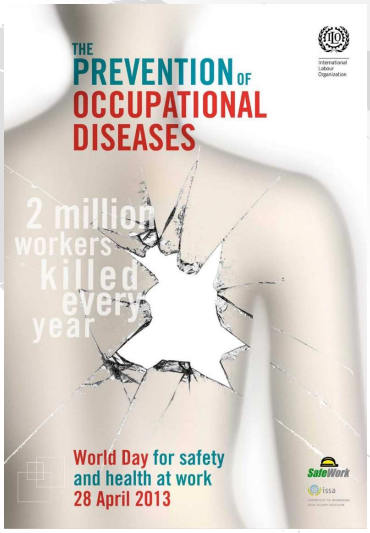
Each year, work-related injuries and diseases kill an estimated 2 million people worldwide, which roughly equals the global annual number of deaths from malaria.

Only 5-10% of workers in developing countries and 20-50% of workers in industrial countries (with a few exceptions) are estimated to have access to adequate occupational health services.

The health status of the workforce in every country has an immediate and direct impact on national and world economies. Total economic losses due to occupational illnesses and injuries are enormous (WHO 1999)

Occupational diseases and injuries are, in principle, preventable.

To develop a structure specifically addressing the issues of Occupational Health sends a clear message that the population at work, becomes a national priority. Creating an Employment Injury Insurance (EII) is a mark of respect and a fair component of a national development plan.



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Some basic definitions

The Workplace Accident:

An unforeseen and sudden event attributable to any cause, occurring to a person by the fact or at the time of his work and which leads to a professional injury to the worker.

+/- commuting ?

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The ILO Employment Injury Benefits Recommendation, 1964 (No. 121), Paragraph 6(1), defines occupational diseases in the following terms: "under prescribed conditions, regard diseases known to arise out of the exposure to substances and dangerous conditions in processes, trades or occupations as occupational diseases."

Two main elements are present in the definition of an occupational disease:

- the causal relationship between exposure in a specific working environment or work activity and a specific disease; and
- the fact that the disease occurs among a group of exposed persons with a frequency above the average morbidity of the rest of the population

Industrial (occupational) diseases

Accidents
Chemical and organic exposures
Biological agents
Physical exposures
Ergonomics and musculoskeletal exposures
Psychosocial exposures
Respiratory Diseases
Skin and Eye Diseases

A date of occurrence is determined. It is usually defined as the date when the disablement is first noted.

By regulation:

Recommendation is to use the List of Occupational Diseases produces by ILO.
(List of Occupational Diseases (revised 2010): Identification and recognition of occupational diseases: Criteria for incorporating diseases in the ILO list of occupational diseases. Occupational Safety and Health Series 74, http://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---safework/documents/publication/wcms_150323.pdf)

Adoption of a classification system for occupational injuries and accidents.

Ensure a reliable mechanism for documenting events

Medical benefit: Convention C 121 (C121 - Employment Injury Benefits Convention, 1964 [Schedule I Amended in 1980]

- ***Article 6***
  - *The contingencies covered shall include the following where due to an employment injury:*
    - *(a) a morbid condition;*
    - *(b) incapacity for work resulting from such a condition and involving suspension of earnings, as defined by national legislation;*
    - *(c) total loss of earning capacity or partial loss thereof in excess of a prescribed degree, likely to be permanent, or corresponding loss of faculty; and*
    - *(d) the loss of support suffered as the result of the death of the breadwinner by prescribed categories of beneficiaries.*

- ***Article 12***
  - *Where a declaration provided for in Article 2 is in force, medical care and allied benefits shall include at least--*
  - *(a) general practitioner care, including domiciliary visiting;*
  - *(b) specialist care at hospitals for in-patients and out-patients, and such specialist care as may be available outside hospitals;*
  - *(c) the essential pharmaceutical supplies on prescription by a medical or other qualified practitioner;*
  - *(d) hospitalisation, where necessary; and*
  - *(e) wherever possible, emergency treatment at the place of work of persons sustaining an industrial accident.*

- ***Article 10***
  - *Medical care and allied benefits in respect of a morbid condition shall comprise:*
    - *(a) general practitioner and specialist in-patient and out-patient care, including domiciliary visiting;*
    - *(b) dental care;*
    - *(c) nursing care at home or in hospital or other medical institutions;*
    - *(d) maintenance in hospitals, convalescent homes, sanatoria or other medical institutions;*
    - *(e) dental, pharmaceutical and other medical or surgical supplies, including prosthetic appliances kept in repair and renewed as necessary, and eyeglasses;*
    - *(f) the care furnished by members of such other professions as may at any time be legally recognised as allied to the medical profession, under the supervision of a medical or dental practitioner; and*
    - *(g) the following treatment at the place of work wherever possible:*
      - *(i) emergency treatment of persons sustaining a serious accident;*
      - *(ii) follow-up treatment of those whose injury is slight and does not entail discontinuance of work.*
  - *The benefits provided in accordance with paragraph 1 of this Article shall be afforded, using all suitable means, with a view to maintaining, restoring or, where this is not possible, improving the health of the injured person and his ability to work and to attend to his personal needs.*

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	Cambodia	Malaysia	Bangladesh	Korea	Quebec
Type of program	Social insurance	Social insurance	Employer liability	Social insurance	Social insurance
Contribution rate - Employee - Employer	- No contribution - 0.8% of payroll	- No contribution -1.25% of payroll	- No contribution - Whole cost		- 12 level risk related - retro x3 large empl.
Maxi. insurable earning (/mth)	1 M. Riel	RM 3,000		Max. 192,000 Won Min. 48,000	Max. 6,000 CAN$ Min. 1,900 CAN$
Work injury	Workplace accident Commuting accident Occupational disease	Workplace accident Commuting accident Occupational disease	Workplace accident Occupational disease	Workplace accident Commuting accident Occupational disease	Workplace accident Occupational disease
Temporary disability	70% x wage	80% x wage Min. RM 30/d Max 78.67/d	100% x wage first 2 mth 66.7% x wage next 2 mth 50% x wage next 8 mth	70% x wage	90% x net salary
Permanent total disability	70% x wage x 80% (+ constant attendance 28% wage)	90% x wage (+ attendance RM 500)	Lumpsum:125,000 tk (list of injuries)	Grade 1 ?	Lumpsum: 106,000CAN$ x age factor x disability deg) + pension 90% x net salary
Permanent partial disability	70% x wage x 80% x disability degree(> 20%) (<20% lumpsum 70% x wage x disab. deg. X 20% x factor)	80% x wage x disability degree(> 20%) (<20% lumpsum 20% x wage x disab. deg. x factor)	Lumpsum:125,000 tk x disab. degree (list of injuries)	14 descriptive grades 1-3 pension 4-7 opt. Pension / lumpsum 8-14 lumpsum	Lumpsum: 106,000CAN$ x age factor x disability deg) + pension according to lost of earning capacity
Survivors' benefit	70% x wage spouse + child, other cases: 28% spouse, child, parents	90% x wage (6/10 spouse, 4/10 child), Min RM 30, max 88,5/d	Lumpsum 100,000 tk	Any dependant: annuity 365 x (52%~75%) x average wage -parent > 60, children < 19, sibling Cor >60 Other (spouse?) lumpsum: 1,300 x average wage	Spouse and children < 18, lump sum for spouse or annuities for 2 to 3 years, - no amounts provided for parents except if unmarried.
Funeral benefit	1,000$	MR 1,500	Cost	120 x average wage Min and max	Actual indexed cost With a maximum
First / Current law	2002 / 2002	1929 / 1969 (social security)	1923 / 2006		1941 / 1985
Administration	National soccial sec. Fund (NSSF)	Social security organization (SOCSO)	Ministery of Labor and Employement	Social security Organisation (KWCWS)	Social Security Organisation (CNESST)

Disability assessment tool

"Since the cuts this is what we get instead of an incapacity benefits officer."

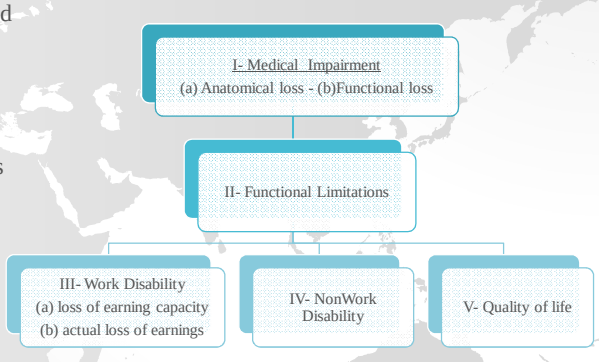
By jurisdiction, policies and intentions retained by the states, various forms of compensation may be brought forward to cover losses relating to workplace injuries.

- impairment based approach:
  Based on the degree of impairment. No links with future earning loss
- loss of earning capacity approach:
  Imply a projected economic impact on the ability to re-enter the labor market
- wage loss approach:
  Permanent "extension" of temporary disability benefit until return to work (if any)
- mixed approach

Disability assessment tool

Distinguishing the difference between impairment and disability is imperative. One individual can be impaired significantly and have no disability, while another person can be quite disabled with only limited impairment.

In practice, jurisdictions choosing to adopt impairment ratings as a procedural surrogate for disability ratings pose a misapplication dilemma as follows. All disability systems seeking to fairly compensate for disability are faced with the challenge of adequately accounting for losses in three major domains: these typically can be viewed as losses due to work disability, non-work disability, and quality of life (QOL)



Disability assessment tool

THE SCHEDULES
THE FIRST SCHEDULE
[see sections 2(1), (67) and section 151]
LIST OF INJURIES DEEMED TO RESULT IN PERMANENT PARTIAL DISABLEMENT

Serial No.	Description of injury	Percentage of loss of earning capacity
1	2	3
1.	Loss of both hands or amputation from higher parts	100
2.	Loss of 1 (one) hand or one leg	100
3.	Loss of sight of both eyes to such an extent as to render the claimant unable to perform any work for which eye-sight is essential	100
4.	Amputation of both legs or thighs, or amputation of one leg or thigh and loss of any leg	100
5.	Severe facial disfigurement	100
6.	Absolute deafness	100
	Amputation cases-upper limbs (either arm)	
7.	Amputation upto shoulder joint	80
8.	Amputation below shoulder with stump less than 20 centimetres from tip of acromion	70
9.	Amputation from 20 centimetres from tip of acromion to less than 11 centimetres below tip of olecranon	60
10.	Loss of a hand or of the thumb and four fingers of one hand or amputation from 20 centimetres below tip of olecranon	60
11.	Loss of thumb	30
12.	Loss of thumb and its metacarpal bone	30
13.	Loss of 4 (four) fingers of 1 (one) hand	50
14.	Loss of 3 (three) fingers of 1 (one) hand	30
15.	Loss of 2 (two) fingers of 1 (one) hand	20
16.	Loss of terminal phalanx of thumb	10
	Amputation cases-lower limbs	
17.	Amputation of both feet	90
18.	Amputation through both feet proximal to the metatarso-phalangeal joint	80
19.	Loss of all toes of both feet through the metatarso-phalangeal joint	40
20.	Loss of all toes of both feet from proximal to the proximal inter-phalangeal joint	30
21.	Loss of all toes of both feet from distal to the proximal inter-phalangeal joint	20
22.	Amputation from lower part of the hip	90
23.	Amputation from lower part of the hip with stump exceeding 12.5 centimetres measured from tip of great trenchanter, but not beyond middle thigh	80
24.	Amputation from lower part of the hip with stump not exceeding 12.5 centimetres measured from tip of great trenchanter	70
25.	Amputation from middle thigh to 9 centimetres below knee	60
26.	Amputation below knee with stump exceeding 9 centimetres but not exceeding 12.5 centimetres	50
27.	Amputation below knee with stump exceeding 12.5 centimetres	40
28.	Amputation of 1 (one) foot resulting in end-bearing	30
29.	Amputation of one foot from proximal to the metatarso-phalangeal joint	30
30.	Loss of all toes of 1 (one) foot through the metatarso-phalangeal joint	20
	Other injuries	
31.	Loss of 1 (one) eye, without any complications, the other being normal	40
32.	Loss of vision of 1 (one) eye, without any complications or disfigurement of eye-ball, the other being normal	30
	Loss of fingers of right or left hand (Index finger)	
33.	Whole	14
34.	2 (two) phalanges	11
35.	1 (one) phalanx of finger	9
36.	Guillotine amputation of tip without loss of bone	5
	(Middle finger)	
37.	Whole	12
38.	2 (two) phalanges	9
39.	1 (one) phalanx	7
40.	Guillotine amputation of tip without loss of bone	5
	(Ring or little finger)	
41.	Whole	7
42.	2 (two) phalanges	6
43.	1 (one) phalanx	5
44.	Guillotine amputation of tip without loss of bone	5
	(Toes of right or left foot (great toe))	
45.	Through metatarso-phalangeal joint	10
46.	Part, with some loss of bone	3
	(Any other toe)	
47.	Through metatarso-phalangeal joint	3
48.	Part, with some loss of bone	2
	(2 (two) toes of one foot excluding great toe)	
49.	Through metatarso-phalangeal joint	5
50.	Part, with some loss of bone	2
	(3 (three) toes of 1 (one) foot, excluding great toe)	
51.	Through metatarso-phalangeal joint	6
52.	Part, with some loss of bone	3
	(4 (four) toes of 1 (one) foot, excluding great toe)	
53.	Through metatarso-phalangeal joint	9
54.	Part, with some loss of bone	5

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DAT

WHODAS 12 Items scoring Template		
	0 = No Difficulty	
	1 = Mild Difficulty	
	2 = Moderate Difficulty	
	3 = Severe Difficulty	
	4 = Extreme Difficulty or Cannot Do	
		Score
S1	Standing for long periods such as 30 minutes?	0
S2	Taking care of your household responsibilities?	0
S3	Learning a new task, for example, learning how to get to a new place?	0
S4	How much of a problem did you have in joining in community activities (for example, festivities, religious or other activities) in the same way as anyone else can?	0
S5	How much have you been emotionally affected by your health problems?	0
S6	Concentrating on doing something for ten minutes?	0
S7	Walking a long distance such as a kilometre (or equivalent)?	0
S8	Washing your whole body?	0
S9	Getting dressed?	0
S10	Dealing with people you do not know?	0
S11	Maintaining a friendship?	0
S12	Your day-to-day work/school?	0
	Overall Score	0,00%
H1	Overall, in the past 30 days, how many days were these difficulties present?	
H2	In the past 30 days, for how many days were you totally unable to carry out your usual activities or work because of any health condition?	
H3	In the past 30 days, not counting the days that you were totally unable, for how many days did you cut back or reduce your usual activities or work because of any health condition?	

WHODAS 2.0 covers 6 Domains of Functioning, including:

- Cognition – understanding & communicating
- Mobility– moving & getting around
- Self-care– hygiene, dressing, eating & staying alone
- Getting along– interacting with other people
- Life activities– domestic responsibilities, leisure, work & school
- Participation– joining in community activities

Functional limitations

Any reduction or restriction (resulting from an occupational injury) of the physical or mental capacity to perform certain activities or suffer some effects.

International Labour Organization

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Seminar on Health care and Benefit Packages for Injured workers due to work related injuries and diseases

MANAGEMENT STRUCTURE OF MEDICAL CARE BY MoLE

Advantages
Administrative and financial control of an integrated network Development of a medical culture geared towards recovery and rehabilitation Development of medical and technical expertise Independence in the situation of a public network considered insufficient Possible links with academic level and research

Disadvantages
Questionable independence of medical opinions and expertise Loss of opportunity for development of the national public health network / duplication Complexity of network identification for workers' clientele Prioritization of mandates: services to injured workers vs other clients Complex geographical distribution to avoid isolation of workers in treatment

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July 2017 Seminar on Health care and Benefit Packages for Injured workers due to work related injuries and diseases

3

3 BANGLADESH HEALTH CARE, DISABILITY ASSESSMENT AND REHABILITATION SERVICES: COMPARATIVE CASE STUDIES

Case studies that were extracted from the original study.

Bangladesh
Health Care, Disability Assessment and Rehabilitation Services: Comparative Case Study

01/07/2017

Jacques Pelletier, md
Salauddin Ahmed Sharif, BOT

International Labour Organization

The International Labour organization Country Office Dhaka (ILO CO) is conducting a feasibility study for the Implementation of an Employment Injury Insurance Scheme in Bangladesh starting with the Ready-Made Garments (RMG) Sector with its further extension to all sectors. An important part of this feasibility study concerns the provision of health care services to the injured workers, the assessment of permanent disability and its impact on loss of earnings capacity in the Bangladesh context as well as the provision of physical and vocational rehabilitation services.

Table of Content

Contents

While conducting the feasibility study for the Implementation of an Employment Injury Insurance Scheme in Bangladesh, the ILO looked at other countries' schemes for comparison.

To get a full range of comparable systems, the ILO studied the Employment Injury Insurance Schemes in used in two developing southeast-Asian countries, as well as the schemes used in South Korea and in the province of Quebec, in Canada.

These four different Employment Injury Insurance Scheme as well as the actual situation in Bangladesh are presented in this companion document to "Bangladesh: Health Care, Disability Assessment and Rehabilitation Services:"

BANGLADESH CURRENT SITUATION:

The current situation in Bangladesh falls within the specifications set out in the Bangladesh Labor Act 2006[1] (BLA 2006) and updated by a regulation in 2015[2] .These documents include a list of diseases notifiable to the authorities (with the adjunction of a list of occupational diseases). Refer to sections 82 and 83 of BLA 2006 and to its Second and Third Schedules.

Chapter XII of the Act describes the obligations of the employer to compensate workers who are victims of accidents at work. Sections 150 to 174 contain, inter alia, specifications on enforcement mechanisms, medical care and follow-up, the role of the Labor Court in case records and appeals mechanisms. Note that in order to access the specifications of the law, the incident must have a consequence resulting in a withdrawal from work for at least 3 days.

Two other Schedules at the end of the 2006 BLA are of interest. The Fifth, which describes compensation amounts in some cases and the First describes the list of injuries deemed to result in partial permanent handicaps.

THE SCHEDULES
THE FIRST SCHEDULE
[see sections 2(1), (67) and section 151]

LIST OF INJURIES DEEMED TO RESULT IN PERMANENT PARTIAL DISABLEMENT

Serial No.	Description of injury	Percentage of loss of earning capacity
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3.	Loss of sight of both eyes to such an extent as to render the claimant unable to perform any work for which eye-sight is essential	100
4.	Amputation of both legs or thighs, or amputation of one leg or thigh and loss of any leg	100
5.	Severe facial disfigurement	100
6.	Absolute deafness	100
	Amputation cases-upper limbs (either arm)	
7.	Amputation upto shoulder joint	80
8.	Amputation below shoulder with stump less than 20 centimetres from tip of acromion	70
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	(3 (three) toes of 1 (one) foot, excluding great toe)	
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54.	Part, with some loss of bone	5

[1] https://resource.ogrlegal.com/official-english-translation-bangladesh-labour-act-2006/

[2] Gazette Notification **S.R.O. No. 291-Law/2015**. *The Bangladesh Gazette Additional Issue*, Published by the Authority Tuesday, September 15/2015. The People's Republic of Bangladesh Ministry of Labour and Employment. - In exercise of the power conferred by Section 351 of the Bangladesh Labour Act, 2006 (Act Nº. 42)

CAMBODIA NATIONAL SOCIAL SECURITY FUND (NSSF)

The Entitlement to Employment Injury

All workers of the enterprises/establishments, registered in NSSF, are entitled to enjoy the benefits of employment injury when the workers suffering from the employment injury.

Employment injury consists of work injury, commuting accident, and occupational diseases. Health facilities, poly clinics, or general practitioners are recognized by the NSSF.

The benefits of employment injury comprising:

Provision of Emergency Services

In the event of workplace accident, employer shall provide the nearest emergency services and then send the victim to the health facility or poly clinic recognized by NSSF. The expense of emergency service and sending the victim to the health facility or poly clinic above is borne by NSSF. In case of commuting accident, the victim or employer can claim the reimbursement for the expense of emergency service from NSSF.

Provision of Medical Care and Treatment

Medical care and treatment for the workers suffer from the employment injury in the health facility or poly clinic recognized by NSSF.

Workers suffering from the work injury are entitled to get medical care and treatment or confinement in the health facilities or poly clinics recognized by NSSF based on the agreement between NSSF and health facilities or poly clinics concerned.

Provision of the Temporary Disability Benefits

A period of in-patient or treatment of occupational diseases in the health facilities or poly clinic, medical convalescent, and temporary disability. The workers suffering from the employment injury are entitled to receive the benefits from NSSF as follows:

- Daily allowance is granted by calculating from the second day following the date of accident.
- Caretaker allowance of the victim in a period of in-patient in the health facilities or poly clinics.

The first day wage of the working suspension of victim shall be borne by the employers.

Daily allowance for temporary disability equals 70% of daily average wage. Caretaker allowance in the health facilities or poly-clinics equals 50% of daily allowance of the victim.

Daily allowance for temporary disability shall be granted to the victim until recovery.

Provision of the Permanent Disability Benefits

The workers suffering from the work injury results in permanent disability incurred less than 20% are entitled to enjoy the disability allowance. This allowance shall only be granted to the victim by calculating as the following formula:

LS = DAW x DD x 20% APV

– LS: Lump Sum
– DAW: Daily Average Wage
– DD: Degree of Disability
– APV: Actuarial Present Value

The workers suffering from the work injury results in the disability incurred at least equally to 20% are entitled to enjoy the permanent disability pension. This pension shall be calculated the following formula:

P = DAW x (DD – 1/5DD)

– P: Disability Pension

Permanent disability pension shall always be regarded as the temporariness. NSSF shall reorganize to investigate the medical check-up and earning capacity no later than a period of 1 year. The victim enjoying pension shall be compulsory to have the medical check-up regulated by NSSF.

Funeral Allowance

In the event that the work injury results in death, the survivor who organize the funeral shall be granted 4,000,000 (four million) Riel for the funeral allowance. This allowance shall be provided to the survivor of the victim for holding the funeral.

Survivors' Benefit

The Survivor of the victim suffering from the work injury, as set forth in Article 34 of Sub-decree No. 16 SD/E, dated March 02, 2007 concerning the Establishment of the National Social Security Fund, is entitled to have the survivors' benefit.

Survivors' benefit is pension that is granted to the beneficiary of victim as the following rate:

a. In the case that beneficiary has spouse, children, parents, or ageing persons

- Spouse = 3/5 x 63% DAW
- Pension for children = 2/5 x 63% DAW
- Pension for parents or ageing persons = 7% DAW

b. In the case that beneficiary has spouse and children

- Spouse = 3/5 x 70% DAW
- Pension for children = 2/5 x 70% DAW

c. In the case that beneficiary has only parents or ageing persons

- Pension for parents or ageing persons = 28% DAW

d. In the case of beneficiary has children, parents, or ageing persons

- Pension for children = 28% DAW
- Pension for parents or ageing persons = 28% DAW

e. In the case that beneficiary has spouse, parents, or ageing persons

- Spouse = 28% DAW
- Pension for parents or ageing persons = 28% DAW

The beneficiary as a spouse of the victim has to have legal marriage certificate. The entitlement of pension for the beneficiary, as a spouse, shall be expired as long as the spouse engages in the new marriage. In case of remarriage, the spouse concerned shall inform NSSF no later than a qualified period of 30 days following the date of the registration of legal marriage certificate. If the spouses concerned fails to notify their own legal marriage certificate, they shall be fined as set forth in Article 38 of the Law on the Social Security Schemes for Persons Defined by the Provisions of the Labour Law.

The beneficiary as children shall have conditions as set forth in **B** of Article 34 of Sub-decree No. 16 SD/E, dated March 02, 2007.

The entitlement of pension of beneficiary shall be abolished when the beneficiary passes away.

Rehabilitation Services

The workers suffering from the work injury results in the permanent disability are entitled to have prosthesis limp / tools in compliance with the doctor or medical practitioner recognized by NSSF.

The workers suffering from the work injury results in the permanent disability are entitled to get the rehabilitation services in compliance with the partly regulated conditions in Prakas of Ministry of Labour and Vocational Training.

CAMBODIA TABLE OF DEGREE OF DISABILITY

PART I LIST OF COMPLETELY PERMANENT DISABILITY

No.	Description of Injury	Percentage of Disability
1	Loss of both hands or amputation at higher sites	100
2	Loss of a hand and a foot	100
3	Double amputation through leg or thigh, or amputation through leg or thigh on one side and loss of other foot	100
4	Loss of sight to such an extent as to render the claimant unable to perform any work for which eyesight is essential	100
5	Very severe facial disfigurement	100
6	Absolute deafness	100

PART II LIST OF PARTLY PERMANENT DISABILITY

Amputation-upper limbs (either arm) cases		
1	Amputation through shoulder joint	90
2	Amputation below shoulder with stump less than 8" from tip of acromion	80
3	Amputation from 8" from tip of acromion to less than 4Vi" below tip of olecranon	70
4	Loss of a hand or of the thumb and four fingers of one hand or amputation from 41/2" below tip of olecranon	60
5	Loss of thumb	30
6	Loss of thumb and its metacarpal bone	40
7	Loss of four fingers of one hand	50
8	Loss of three fingers of one hand	30
9	Loss of two fingers of one hand	20
10	Loss of terminal phalanx of thumb	20
Amputation –Lower Limbs Cases		
11	Amputation of both feet resulting in end-bearing stumps	90
12	Amputation through both feet proximal to the metatarsal-phalangeal joint	80
13	Loss of all toes of both feet through the metatarsal-phalangeal joints	40
14	Loss of all toes of both feet proximal to the proximal inter-phalange joint	30
15	Loss of all toes of both feet distal to the proximal inter-phalangeal joint	20
16	Amputation at hip	90
17	Amputation below hip with stump not exceeding 5" in length measured from tip of great trochanter	80
18	Amputation below hip with stump exceeding 5" in length measured from tip of great trochanter but not beyond middle thigh	70
19	Amputation below middle thigh to 3'/2 below knee	60
20	Amputation below knee with stump exceeding 3 1/2" but not exceeding 5"	50
21	Amputation below knees with stump exceeding 5"	40
22	Amputation of one foot resulting in end-bearing	30
23	Amputation through one foot proximal to the meta torso phalangeal joint	30
24	Loss of all toes of one foot through the meta torso phalangeal joint	20
25	Loss of one eye, without complications, the other being normal	40
26	Loss of vision of one-eye without complications or disfigurement of eye-ball, the other being normal	30
27	Permanent total loss of hearing in one ear loss of	20
A. Fingers of right or left hand		
28	Whole	14
29	Two phalanges	11
30	One phalanx	9
31	Guillotine amputation of tip without loss of bone	5
Middle Finger		
32	Whole	12
33	Two phalanges	9
34	One phalanx	7
35	Guillotine amputation of tip without loss of bone	4
Ring or Little Finger		
36	Whole	7
37	Two phalanges	6
38	One phalanx	5

39 Guillotine amputation of tip without loss of bone	2
B. Toes of right or left foot	
Great toe	
40 Through metatarsal-phalangeal joint	14
41 Part, with some loss of bone	3
Any other toe	
42 Through metatarsal-phalangeal joint	3
43 Part, with some loss of bone	1
Two toes of one foot, excluding great toe	
44 Through metatarsal- phalangeal joint	5
45 Part, with some loss of bone	2
Three toes of one foot, excluding great toe	
46 Through metatarsal-phalangeal joint	6
47 Through metatarsal-phalangeal joint	3
Four toes of one foot, excluding great toe	
48 Through metatarsal-phalangeal joint	9
49 Through metatarsal-phalangeal joint	3

QUÉBEC (CANADA)

In Canada, federal and provincial levels occupy the fields of legal powers defined by the Constitution. Each province (10), considering this separation of powers, is responsible for health services and labor legislation. Although many provincial objectives and structures are alike in all Canada, this section will cover the Quebec model.

The para-governmental body responsible for the mandate in Quebec is called CNESST for the Norms, Equity and Occupational Safety and Health Commission. This is a broad mandate. But it has the advantage of offering several levers, with legislative support, especially when it comes to promoting reintegration into the workplace after rehabilitation.

CNESST Commission des normes, de l'équité, de la santé et de la sécurité du travail
cnesst.gouv.qc.ca/medecins

Benefits under the Act respecting Industrial Accidents and Occupational Diseases (AIAOD)[3]

In Québec, the process for compensating employment injuries includes providing the care required for consolidation of an injury, the physical, social and occupational rehabilitation required by a worker who has sustained an injury, the payment of income replacement indemnities, indemnities for bodily injuries and, where applicable, death benefits.

If you decide to file a claim under Québec's occupational health and safety plan, the following is a summary of the benefits to which you may be entitled under the AIAOD.

Medical aid

You are entitled to the medical aid required by your condition as a result of the employment injury. The CNESST pays for the costs of that medical aid, which includes the following:

- the services of a healthcare professional (physician, dentist, optometrist, pharmacist);
- the care and treatment provided in an institution in Québec's health services and social services network (for example, a hospital or a health and social services centre);
- drugs and other pharmaceutical products;
- orthosis and prostheses, under certain circumstances;
- the care and treatment provided in private healthcare establishments by healthcare workers as determined under the Regulation respecting medical aid, if that care and treatment was prescribed by your attending physician (for example, audiology or physiotherapy);
- the technical aids and other costs provided for by the Regulation.

Indemnities

- **Income replacement indemnity**

Should you become unable to do your job because of an employment injury, you would be entitled to an income replacement indemnity. You would also be entitled to such an indemnity if you required rehabilitation to be able to do your job or, if that goal is not achievable, to be able to work full-time at some other suitable employment.

- The day of the accident, your employer must pay you 100% of your usual earnings.
- For the first 14 days of absence, your employer must pay you 90% of your net income for the periods that you normally would have worked.
- As of the 15th day of absence, the CNESST will pay you an indemnity equal to 90% of your net income.

To establish your net income, your gross income taken into consideration may not exceed the maximum yearly insurable earnings in effect at the time of the event.

- **Indemnity for bodily injuries**

[3] http://www.csst.qc.ca/en/workers/Pages/benefits_AIAOD.aspx

You could also be entitled to an indemnity for bodily injuries if, as a result of the employment injury, you are left with physical or psychological impairment. The indemnity is paid in the form of a lump sum, determined according to your percentage of impairment and your age.

- **Death benefit**

The spouse and dependents of a worker who dies as the result of an employment injury are entitled to a death benefit. If the worker does not have a spouse or dependents at the time of his or her death, then the deceased worker's parents are entitled to a death benefit. If both parents are deceased, the death benefit is paid to the worker's succession. The amount of the death benefit is determined according to special rules if the person entitled to the benefit is an invalid.
Funeral expenses are reimbursed to the person who pays them up to the maximum provided for by law, as are the **actual costs** of transporting the body.
A lump sum is paid to the spouse, or if there is no spouse, to the other dependents, so that the spouse or dependents can pay the unforeseen expenses caused by the worker's death.

Rehabilitation

If, because of an employment injury, you are left with permanent physical or psychological impairment, you are entitled to the rehabilitation required by your physical or psychological condition.
Rehabilitation may include physical rehabilitation (physiotherapy, prosthesis adaptation, etc.), social rehabilitation (personal home assistance, psychosocial intervention, etc.) or occupational rehabilitation (assessment of occupational possibilities, work station adaptation, etc.).

All employers in Quebec have an obligation to subscribe to CNESST and all employees are covered. The insurable salary covers an annual indexed range between CDN $ 23,500 (US $ 17,500) and CDN $ 74,000 (US $ 55,000). Which means an annualized minimum wage even for seasonal or temporary workers, with a risk of distortion that can delay healing but has the opposite effect for the highest wage earners.

Self-employed workers have the option of subscribing to the organization if they wish, rather than private insurance. Only employers fund the OSH activities of the CNESST and the contributions are based on the risks inherent in the sector of activity.

An injured worker, or suffering from an occupational disease, receives 90% of his net salary as soon as he is out from work. The first two weeks paid by the employer, then CNESST takes over. There is no prescription and if the total disability is permanent, income replacement will be continued until the expected retirement (65 years), to which is added a progressive regression of 65 to 68 years (-25% /year).

Quebec has a universal and free public health system. However, the law provides that medical assistance required by workers is the responsibility of the CNESST. The managers of the Health Care system ensure that they invoice the CNESST for the services received by the workers. This includes medical and surgical care, acute or rehabilitation hospital costs, investigations, medication and other ancillary costs (orthotics, prostheses, physiotherapy, travel for specialized care not available in the region, etc.).

In the event of death, several modalities are defined:
- funeral expenses,
- pensions for dependent children up to 18 years old (or 25 years old if still attending an educational institution),
- lump sum for spouse or annuities for 2 to 3 years,
- no amounts provided for parents except if unmarried.

As previously mentioned, an injured worker, or suffering from an occupational disease, receives 90% of his net salary while receiving care. In the event of a full recovery, the law provides an obligation for the employer to take him back to work (ad 1 year if small employer, ad 2 years if employer with more than 20 employees).

Other workers unfortunately will suffer permanent sequelae or residual disability. The permanent sequelae to physical integrity will be compensated from the Annotated Scale of Bodily Injury[4]. It is a guide of more than 300 pages describing an impairment percentage according to the level of function for each of the body segments and internal organs. Surprisingly, an injured worker may be cumulated more than 100% in the event of multiple severe injuries. The percentage reached is converted into a lump sum based on an indexed reference to the year of the accident and the worker's age at the time of the accident (table). For example, 100% for an accident in 2017 would be around $ 106,000 CAD ($ 80,000 US) for an 18 y.o. worker and $ 53,000 CAD ($ 40,000 US) for a 65 y.o. worker.

But more interesting for the worker, concerns the actions taken if a handicap is always related to the bodily injury after the rehabilitation efforts. In such case, the Commission shall determine, with the assistance of its advisers, the possibility and the capacity of any gains resulting from the employment in a new job, considering residual disability. The differential (still 90% of net income) between old and future earnings will be paid as annuities until retirement (65 y.o.). Adjustment mechanisms are regularly carried out to verify if this annuity is always adequate according to actual income and indexation, but always by subtracting the income that the worker is assumed to be able to earn by himself.

Commuting accidents are not covered. But there is another para-governmental body administering Québec's public automobile insurance plan by compensating road accident victims.

[4] http://legisquebec.gouv.qc.ca/en/ShowDoc/cr/A-3.001,%20r.%202

KOREA WORKERS' COMPENSATION & WELFARE SERVICE (COMWEL)

Submission of Claim for Medical Care Benefits for Occupational injury or disease, Investigation, Submission of Claim for Medical Care Benefits.

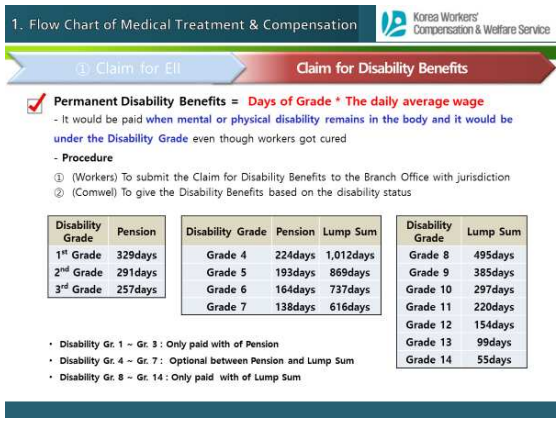
1. An accident which happens while the worker is **performing work** or an act in accordance with his/her **employment contract**
2. An accident which happens due to **a defect in, or the careless management of, facilities, etc.,** provided by the employer while the worker is using these facilities, etc.
3. Any accident that occurs while he/she **commutes to or from work** using a transportation means provided by his/her business owner or other similar means under the control and management of his/her business owner
4. An accident that happens while the worker **is participating in or preparing an event** organized by the employer or an event following the directions of the employer
5. An accident which happens during **recess hours** due to an act that can be seen as **under the control of the employer**
6. Other accidents which happen in relation to work

Temporary Disability Benefits (70% of average wage, minimum and maximum specified)

- It would be paid to any worker, who suffers an Employment injury or disease, for a period during which the worker is unable to work for receiving medical care

Survivors' Benefits

- It shall be paid to a survivor of any worker who has died due to a cause related to his/her duties
- the lump-sum survivors' benefits shall be paid where there is no person eligible for a survivors' annuity



* Persons eligible for a survivors' annuity: Any of the following survivors whose livelihood had been supported by such worker as at the time of the worker's death

1. Parents or grandparents respectively aged 60 years at least;
2. Children or grandchildren respectively aged below 19 years;
3. Siblings aged below 19 years or 60 years at least

- Annuity: 365 x (52%~75%) x average wage
- Lump Sum: 1,300 x average wage

Funeral Expenses

- It shall be paid to a survivor or somebody who arranges funeral services
- Standard: 120 x average wage

No English description could be found for the description of the different grades and the correspondence of disability attributed to it.

MALAYSIA[5] SOCSO

SOCSO has a staff of 2,000 persons to administer the employment injury and invalidity schemes as well as ancillary programmes such as the dialysis treatment and the heath screening programme. SOCSO commits to pay out benefits within 14 days of complete documentation and information submission. Temporary disablement benefit can be paid within 7 days while funeral benefit can be paid within 3 days and registration of new employers and employees can be completed within 1 day.
The return to work program is available under employment injury and invalidity branches. It was established in 2007 in the spirit of ILO standards (C. 102, C. 159, R. 169). SOCSO wanted to shift from "paying the worker to stay off work" to "paying the worker to return to work". It targets 59.4 days to finalise a case.
IT is critical and crucial at implementation (right first time, right all the times!).
The waiting period is 3 days and needs not be consecutive.
Hearing used to be a problem 20 years ago. Better industrial noise control has brought improvement. Nowadays a claim related to hearing problem would involve noise mapping.
Back problems have increased a lot and deserve attention.
Cancer treatment cost is not covered under SOCSO unless it is established as occupational disease. SOCSO has a list of occupation diseases and the medical board has to decide on diseases beyond the list. SOCSO can provide a pension if the cancer results in disability.

Is there a maximum on the period of temporary disability?

After 180 days, the case is referred to the medical board to determine whether the temporary disability continues or the permanent disability can be established.
Foreign workers are covered under the Workmen's compensation Act, which provides lower benefits than SOCSO. The government facilitates benefit payment through its embassies.

Particular benefits

Under the invalidity branch, suicides are covered, dialysis and rehabilitation services are available even in case of grant. A child of a PDB's recipient can apply for education benefit.

Commuting accidents

Employment injury scheme in Malaysia as well as Cambodia covers commuting accidents related to work. Establishing whether a commuting accident is work related adds a complexity to the administration.
SOCSO statistics have shown a decreasing trend in the number of industrial accidents and an increasing trend in number of commuting accidents. These bring the extension of coverage to all types of accidents to the first plan ("no-fault" or 24h coverage).
The challenges in commuting injury prevention include the increased usage of motorcycles (cheaper, petrol cost risen, traffic jam), the increasing severity, commuting injury involving mostly young workers and behavior factors (helmet wearing, riding style, speed).
Of course, there are needs for covering commuting accidents between home and work place in Bangladesh, but great care should be given to the difficulties in the administration of such provision. Bangladesh should be ready to implement prevention programs.

Replacement rate - permanent disability

The replacement rates for permanent disability at 90% is now being questioned by SOCSO. It is considered at the upper limit of an acceptable range and potentially dissuasive to rehabilitation and return to work. Bangladesh should contemplate a lower rate such as 80 percent as recommended to Cambodia.

Rehabilitation and return-to-work

SOCSO applies recognized best practices in rehabilitation and return-to-work. A sophisticated Rehabilitation Centre has recently started to operate. Administrative costs have increased rapidly in the recent past and some stakeholders question the effectiveness of policies and practices. It is a challenge for

[5] Mission report 18 - 24 November 2015 Phnom Penh (Cambodia), Kuala Lumpur (Malaysia) *Gilles Binet and Doan-Trang Phan, external collaborators*

SOCSO to provide all stakeholders with quantitative and qualitative evidence on the matter. The success of SOCSO and the temptation to replicate may be appealing. The management of those programs relies on highly skilled staff, thus requiring investment in training and supervision by experienced people. As each country is different, the development process must be adapted to socio-economic and cultural specificities of each one.

[Section 2] [6]

PART I

List of injuries deemed to result in permanent total disablement Serial No.	*Description of Injury*	*Percentage of loss of earning capacity*
1.	Loss of both hands or amputation at higher sites	100
2.	Loss of a hand and a foot	100
3.	Double amputation through leg or thigh, or amputation through leg or thigh on one side and loss of other foot	100
4.	Loss of sight to such an extent as to render the claimant unable to perform any work for which eye-sight is essential	100
5.	Very severe facial disfigurement	100
6.	Absolute deafness	100

PART II

List of injuries deemed to result in permanent partial disablement

Amputation—upper limbs (either arm) cases

1.	Amputation through shoulder joint	90
2.	Amputation below shoulder with stump less than 8ll from tip of acromion	80
3.	Amputation below 8ll from tip of acromion to less than 41/2ll below tip of olecranon	70
4.	Loss of a hand or of the thumb and four fingers of one hand or amputation from 41/2ll below tip of olecranon	60
5.	Loss of thumb	30
6.	Loss of thumb and its metacarpal bone	40
7.	Loss of four fingers of one hand	50
8.	Loss of three fingers of one hand	30
9.	Loss of two fingers of one hand	20
10.	Loss of terminal phalanx of thumb	20

Amputation—lower limbs cases

11.	Amputation of both feet resulting in end-bearing stumps	90
12.	Amputation through both feet proximal to the metatarso-phalangeal joint	80
13.	Loss of all toes of both feet through the metatarso-phalangeal joint	40
14.	Loss of all toes of both feet proximal to the proximal inter-phalangeal joint	30
15.	Loss of all toes of both feet distal to the proximal inter-phalangeal joint	20
16.	Amputation at hip	90

[6] Malaysia: *Employees' Social Security Act 1969*, Laws of Malaysia Act 4, January 1, 2006, Second Schedule, p.87-91, http://www.ilo.org/dyn/travail/docs/1626/Employees'%20Social%20Security%20Act%201969%20-%20www.agc.gov.my.pdf

17.	Amputation below hip with stump not exceeding 5ll in length measured from tip of great trenchanter	80
18.	Amputation below hip with stump exceeding 5ll in length measured from tip of great trenchanter but not beyond middle thigh	70
19.	Amputation below middle thigh to 31/2ll below knee	60
20.	Amputation below knee with stump exceeding 31/2ll but not exceeding 5ll	50
21.	Amputation below knee with stump exceeding 5ll	40
22.	Amputation of one foot resulting in end-bearing	30
23.	Amputation through one foot proximal to the metatarso-phalangeal joint	30
	Other injuries	
24.	Loss of all toes of one foot through the metatarso-phalangeal joint	20
25.	Loss of one eye, without complications, the other being normal	40
26.	Loss of vision of one eye without complications or disfigurement of eye-ball, the other being normal	30
27.	Permanent total loss of hearing in one ear	20
Loss of—		
A—Fingers of right or left hand		
Index finger		
28.	Whole	14
29.	Two phalanges	11
30.	One phalanx	9
31.	Guillotine amputation of tip without loss of bone	5
Middle finger		
32.	Whole	12
33.	Two phalanges	9
34.	One phalanx	7
35.	Guillotine amputation of tip without loss of bone	4
Ring or little finger		
36.	Whole	7
37.	Two phalanges	6
38.	One phalanx	5
39.	Guillotine amputation of tip without loss of bone	2
B—Toes of right or left foot		
Great toe		
40.	Through metatarso-phalangeal joint	14
41.	Part, with some loss of bone	3
Any other toe		
42.	Through metatarso-phalangeal joint	3
43.	Part, with some loss of bone	1
Two toes of one foot, excluding great toe		
44.	Through metatarso-phalangeal joint	5
45.	Part, with some loss of bone	2
Three toes of one foot, excluding great toe		
46.	Through metatarso-phalangeal joint	6
47.	Part, with some loss of bone	3
Four toes of one foot, excluding great toe		
48.	Through metatarso-phalangeal joint	9
49.	Part, with some loss of bone	3

ADMINISTRATIVE COMPARISON OF THOSE COUNTRIES

	Cambodia	**Malaysia**	**Bangladesh**	**Korea**	**Quebec**
Type of program	Social insurance	Social insurance	Employer liability	Social insurance	Social insurance
Contribution rate - Employee - Employer	 - No contribution - 0.8% of payroll	 - No contribution -1.25% of payroll	 No contribution - Whole cost		-No contribution 12 level risk % of payroll - retro x3 large empl.
Maxi. insurable earning (/mth)	1 M. Riel	RM 3,000		Max. 192,000 Won Min. 48,000	Max. 6,000 CAN$ Min. 1,900 CAN$
Work injury	Workplace accident Commuting accident Occupational disease	Workplace accident Commuting accident Occupational disease	Workplace accident Occupational disease	Workplace accident Commuting accident Occupational disease	Workplace accident Occupational disease
Temporary disability	70% x wage	80% x wage Min. RM 30/d Max 78.67/d	100% x wage first 2 mth 66.7% x wage next 2 mth 50% x wage next 8 mth	70% x wage	90% x net salary
Permanent total disability	70% x wage x 80% (+ constant attendance 28% wage)	90% x wage (+ attendance RM 500)	Lumpsum:125,000 tk (list of injuries)	Grade 1 ?	Lumpsum: 106,000CAN $ x age factor x disability deg) + pension 90% x net salary

	Cambodia	**Malaysia**	**Bangladesh**	**Korea**	**Quebec**
Permanent partial disability	70% x wage x 80% x disability degree(> 20%) (<20% lumpsum 70% x wage x disab. deg. X 20% x factor)	80% x wage x disability degree(> 20%) (<20% lumpsum 20% x wage x disab. deg. x factor)	Lumpsum:125,000 tk x disab. degree (list of injuries)	14 descriptive grades 1-3 pension 4-7 opt. Pension / lumpsum 8-14 lumpsum	Lumpsum: 106,000CAN $ x age factor x disability deg) + pension according to lost of earning capacity
Survivors' benefit	70% x wage spouse + child, other cases: 28% spouse, child, parents	90% x wage (6/10 spouse, 4/10 child), Min RM 30, max 88,5/d	Lumpsum 100,000 tk	Any dependant: annuity 365 x (52%~75%) x average wage -parent > 60, children < 19, sibling Cor >60 Other (spouse?) lumpsum: 1,300 x average wage	Spouse and children < 18, lump sum for spouse or annuities for 2 to 3 years, - no amounts provided for parents except if unmarried.
Funeral benefit	1,000$	MR 1,500	Cost	120 x average wage Min and max	Actual indexed cost With a maximum
First / Current law	2002 / 2002	1929 / 1969 (social security)	1923 / 2006		1941 / 1985
Administration	National soccial sec. Fund (NSSF)	Social security organization (SOCSO)	Ministery of Labor and Employement	Social security Organisation (KWCWS)	Social Security Organisation (CNESST)

4

4 REPORT ON THE FRAMEWORK ON COMPLIANCE AND LINKAGES TO EXISTING MECHANISMS FOR LABOUR INSPECTION

Reproduced as originally published.

Output 3: A report on the framework on OSH and prevention as a part of the new employment injury insurance law and regulations on contributions is drafted.
Output 4: A report on the framework on compliance and linkages to existing mechanisms for labour inspection as a part of the new employment injury insurance law and regulations on contributions is drafted

Bangladesh is in a position to benefit from the integration of their relatively new OHS prevention, inspection and education efforts with a newly adopted EII program. Bangladesh is still in the initial stages of establishing their OHS programs and are only beginning to consider the legal framework for an EII program. They have no effective workplace accident reporting scheme in place and all of their OHS programs compete for scarce funding with other government priorities.

Bangladesh has established a statutory OHS regime. They have enacted legislated standards for health and hygiene, standards for building safety and precautions against fire as well as standards for machinery safety and physical limitations on work. There is an inspection service within the Ministry of Labour. Since 2013 inspectors have the power to order that work stop where conditions are deemed to be unsafe. The legislation requires the creation of safety committees in certain factories, the establishment of workplace Health Centres in workplaces with over 5000 employees and safety welfare officers in workplaces with more than 500. Other important amendments deal with dangerous work for children; emergency exits from factories; access to gangways and stairs for workers; mandatory use of personal safety equipment; notification of authorities in case of an workplace accident.

Despite the 2013 changes to labour legislation, Bangladesh has not ratified ILO Convention 187 – Promotional Framework for Occupational Safety and Health. Nor have they ratified Convention 155 – Occupational Safety and Health, the Convention dealing with enforcement. Notwithstanding they have not ratified Convention 187, there is a provision in the existing legislation for the creation of a National Council For Industrial Health and Safety. This is a tripartite body responsible for "establishing national health and safety policy". One of the objectives of Convention 187 is to "promote a safe and healthy working environment by formulating a national policy". This National Council For Industrial Health and Safety does not appear to have a direct oversight role in the administration of the OHS programs.

Notwithstanding the provisions in the legislation that allow the Minister to require the reporting of accidents, Bangladesh does not have a reliable database on accident frequency and the cost of workplace accidents in different industrial sectors. The absence of a database on workplace accidents was a problem for the development of a legal framework for an EII system. A specific Establishment Survey on Workplace

Injuries by the Bangladesh Institute of Development Studies (BIDS) was undertaken so that a cost estimate of a model EII scheme could be arrived at.

The legal framework for the EII scheme that is being put forward for Bangladesh establishes a tri-partite governing body responsible for the administration of the system in addition to setting policy. The draft legal framework requires the reporting of accidents to this tripartite body. Because they process all claims for injury arising out of an accident this EII agency will accumulate data on the nature of injuries, the causes of those injuries and the cost of those injuries. Because workers are reporting accidents in order to claim compensation for their injuries, data collected through the EII claims process is generally more robust than a data base that depends on voluntary reporting by employers.

Jurisdictions that have had a long history of autonomous OHS and EII regimes have been experimenting with the integration of these two agencies. Their goal is to reduce the frequency and the cost workplace accidents through efficiencies in program delivery as well as more rational funding mechanisms for OHS programs. In Canada OSH and EII programs are both the responsibility of the Provincial/Territorial governments. There are 13 autonomous jurisdictions and they fall into one of three models. In some of those jurisdictions OSH and EII are run by different governing bodies and there is very little connection between the two. The second model is where there are two independent bodies governing the programs but where the OSH agency uses data from the EII agency to set priorities for their inspection/prevention activities and where there may be some funding arrangements between the two agencies. A third model exists where the same governing agency is responsible for providing EII benefits to injured workers and for administering OSH legislation and funding inspection/prevention programs. Because EII programs are funded by a levy on employers in this third model the levy on Employers directly funds the inspection services and other prevention activities as well as the costs of compensation. In some cases the government also makes a contribution to the agency for the costs of the enforcement activity.

There are several implications to consider in this completely integrated model for EII and OHS prevention/enforcement programs.

Efficiency Implications

When a jurisdiction integrates their workers compensation (EII) programs with their Occupational Health and Safety programs (OHS) they are able to efficiently deploy their resources and reduce the frequency and cost of workplace accidents. Generally the goal of Occupational Safety and Health legislation and related Prevention activities is to reduce the frequency of accidents. They aim to accomplish that goal by regulating hazards that contribute to accidents and by increasing awareness of hazardous conditions. In essence they do this, by establishing standards, enforcement/inspection and through education. Having data on what the real and the costly hazards are, as opposed to those potential hazards that never

materialize into injuries to workers, is key to effective and efficient standard setting, enforcement and education/promotion programs.

Consider these examples:
Data from Employment Injury Insurance injury claims shows that a high number of expensive claims (finger hand amputations) have arisen from a particular type of machine operation in the metal working industry. A policy response might be to develop in Regulations a safety standard for guards on that particular equipment. The inspection/enforcement response might be to assign more of the available inspection resources to that industry to visit plants for the specific purpose of inspecting the operation of that equipment. An education response might be to develop an education program for employers and workers on the safe operation of that equipment.

Data from Employment Injury Insurance injury claims shows a high number of fatalities in the construction industry involving falls from heights. At the same time accident frequency in manufacturing has declined. A policy response might be to develop a safety standard for railings or for workers to be tied off in certain circumstances. An inspection/enforcement response might be to assign more of the available inspection resources to the construction industry to visit work sites for the specific purpose of looking for unsafe conditions. An education response might be to develop a program for employers and workers on safe practices to follow when working at heights.

Data from Employment Injury Insurance injury claims shows that factories of over 1000 workers in the garment industry have a very low frequency of accident claims while smaller factories of fewer than 500 workers have a high rate of claims. The policy response might be that inspection/enforcement resources in the garment industry be directed to those smaller factories. Instead of inspecting all garment factories on a 12 month cycle small ones might be inspected on a 6 month cycle while large ones on an 18 month cycle.

Data from Employment Injury Insurance injury claims shows that shoulder injuries from repetitive heavy lifting in all industries are difficult to administer and expensive because of very long healing times and low numbers of injured workers actually returned to work. It might be that medical practitioners are not aware of best practices in diagnosis and treatment protocols for shoulder injuries. The response might be to develop those protocols and provide professional education for treating physicians

Funding Implications:
Most jurisdictions view OHS programs as being for the general welfare of society and when they were adopted they were funded through general government

revenue. When government resources are scarce these programs compete with every other established regulatory program. EII programs are funded very differently. They are funded from a direct levy on employer payrolls. This is considered to be a fair basis of funding because the cost to the EII scheme are roughly related to over a long period of time. Often these funding mechanisms are risk adjusted. In order to ensure that employers are paying their "fair share" of the costs of the scheme specific employers, or classes of employers, that have established a record of poor performance pay more.

Jurisdictions that have experimented with the integration of OHS with EII programs have been able to tap into the very different EII funding model to finance some or all of their OHS programs. Not only is this a "fairer" way to fund OHS activities, because the cost is born directly by industry, it is also a more secure source of funding, because it is not subject to the vagaries of a government's annual budget exercise and OHS programs do not have to compete for resources with other government priorities.

Who really pays? Although we refer to employers paying the cost of an EII scheme and potentially paying the cost of OHS programs we should acknowledge that it is the consumer of the products of that employer and that industry who will likely pay the costs. From a public policy point of view that is where the costs should flow. The result is the consumers of products pay all the costs of producing those products, including the costs associated with workplace injuries and the efforts to prevent those injuries.

Another important implication from having employers pay the costs of OHS prevention, enforcement and inspection is that it is those employers who are best able to drive those costs down. It is a truism in business that when costs are quantified or measured they get managed. When employers can clearly see the direct cost of their accidents (EII injury claims) and the cost of preventing accidents (OHS program costs as reflected in their assessments) they have the incentive to manage those costs. They can make the decisions to devote their own resources to reducing those costs and they can manage their results.

Governance Implications:

In addition to the efficiencies that are achieved from operationally integrating OHS programs with EII and the advantageous funding possibilities, having one governance body responsible for the two programs makes public policy sense. Having one agency with oversight for the all OHS and EII activity ensures a balanced approach. One governing agency is responsible for the allocation of resources to the various approaches to achieving the goal of protecting workers from the consequences of workplace accidents and compensating them for their loss in the event they are injured. This one governing body sets the balance for their jurisdiction between allocating resources to the prevention of loss and to compensation for loss. On the prevention side of the balance are also capable of

making the resource allocation decision between enforcement activity and promotion/education activity. On the compensation side of the equation they can allocate resources towards compensation, improved treatment and return to work efforts. The single governing agency has access to real information on loss and is able to parse that information in many different ways. This enables them to make a full range of policy responses and focus resources on real workplace health/safety issues as they emerge in a constantly changing workplace.

The tri-partite governance concept is well established in EII programs. Elements of tri-partite governance are present in the administration of OHS legislation. Any jurisdiction has only so many Labour and Employer leaders. Rather than divide that leadership between governing bodies for these different but related policy areas, it makes to bring them together in one tri-partite governing agency.

The Bangladesh Model:

Each jurisdiction must make a decision on the extent to which they want to integrate the administration of OHS and EII. However, it is undisputed that when an OSH program or a prevention education program is based on the data that comes from the EII program resources are focused and efficiency is achieved in the delivery of these programs. Resources are always limited. In most jurisdictions OSH inspections and Education programs do not enjoy unlimited funding. Being able to focus attention on the industries, on the causes of accidents or the nature of the injury allows an OSH agency to achieve its goal of reducing the frequency and seriousness of accidents. When real accident data drives the development of standards, the inspection of workplaces and education programs those limited resources are focused on remedying real workplace health/safety issues that are resulting in injuries to workers.

Bangladesh stakeholders will have to decide on the model that works best for them. It is important, however, that they consider the options open to them and that they take this opportunity to adopt a governance model and program funding process that works best for all three stakeholders.