

*SOM IOMSC Webinar
on Basic Occupational Health Services*

**Opportunities and Challenges in
Basic Occupational Health Services
and similar innovations in health care**

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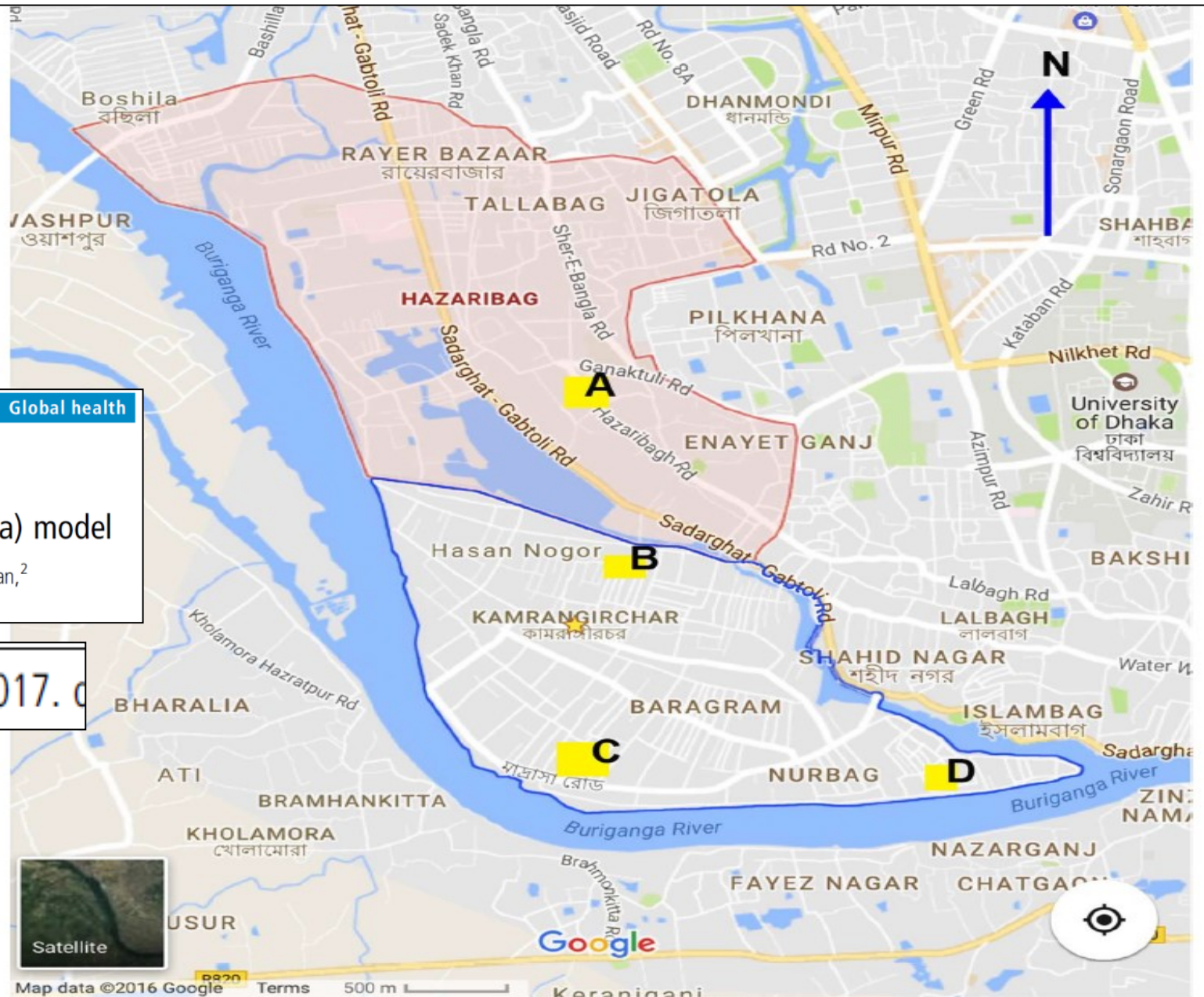
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No conflict of interest to report

- Frank van Dijk
- Suvarna Moti

Médecins sans frontières in Dhaka, Bangladesh: BOHS clinics



Global health

CASE REPORT

Basic occupational health services (BOHS) in community primary care: the MSF (Dhaka) model

Venkiteswaran Muralidhar,^{1,2} Md Faizul Ahasan,² Ahad Mahmud Khan,² Mohammad Shariful Alam²

Muralidhar V, et al. *BMJ Case Rep* 2017. doi:10.1136/bcr-2017-222222

Tanneries
Plastic recycling
Metal industry
Garment industry

Figure 7 Hazaribagh (red outline) and Kamrangirchar (blue outline). The locations of the clinics and the main industries they serve are (A) Hazaribagh, tannery; (B) Aminbagh, garments; (C) Huzurpada, metals and plastics; and (D) Thoda, plastics and metals.

A new structure for occupational health care

Expert-based Occupational Health Services

for large and medium-sized companies

Basic Occupational Health Services

for workers in small companies and agriculture,
self-employed and informal workers
integrated in Primary or Community Health Care

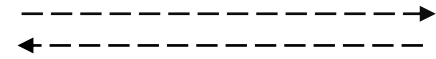


National & regional OSH institutes, research & development, education, professional associations, online infrastructure

Care →
Support →
Referrals →

Labor

Collaboration



Health Care

Hospital Health Care

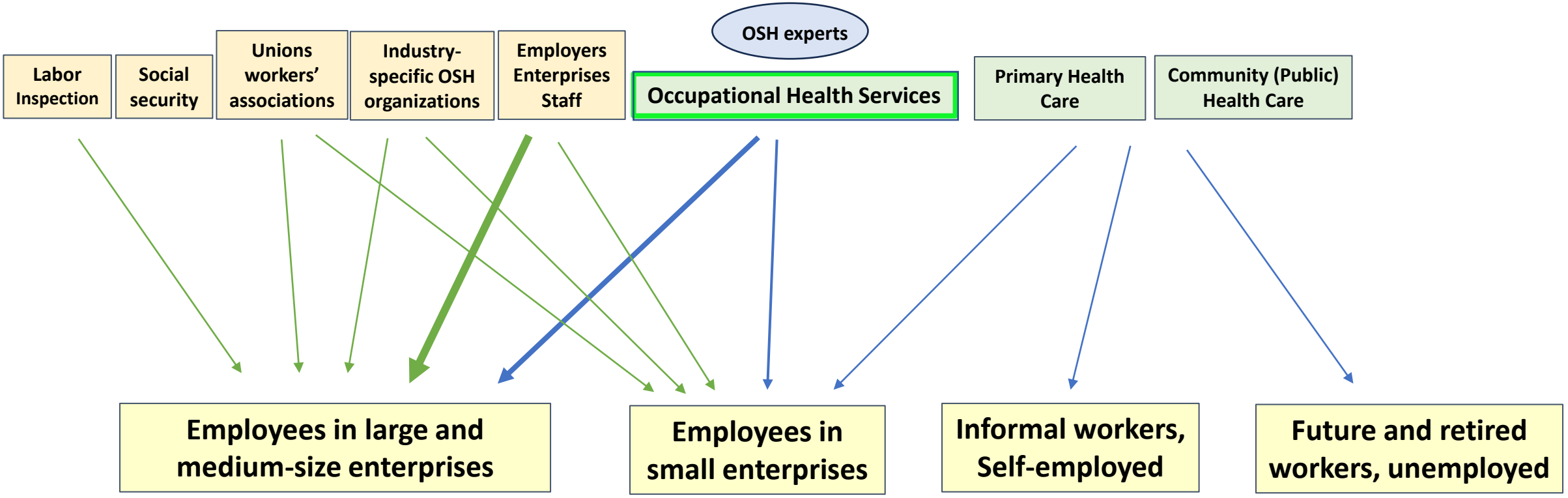


Figure 1. Current structure of OSH care and support for workers

National & regional OSH institutes, research & development, education, professional associations, online infrastructure

Care →
Support →
Referrals →

Introduction of BOHS in Primary or Community Health Care, enhanced Occupational Health Services, improved Labor Support, improved Collaboration Labor-Healthcare, introduction Specialized Occupational Health Care

Labor

Collaboration

Health Care

Hospital Health Care
Specialized Occupational Health Care

OSH experts

Labor Inspection Social security Unions workers' associations Industry-specific OSH organizations Employers Enterprises Staff

OSH experts
Occupational Health Services

Primary Health Care Community (Public) Health Care
Basic Occupational Health Care

Participatory approach

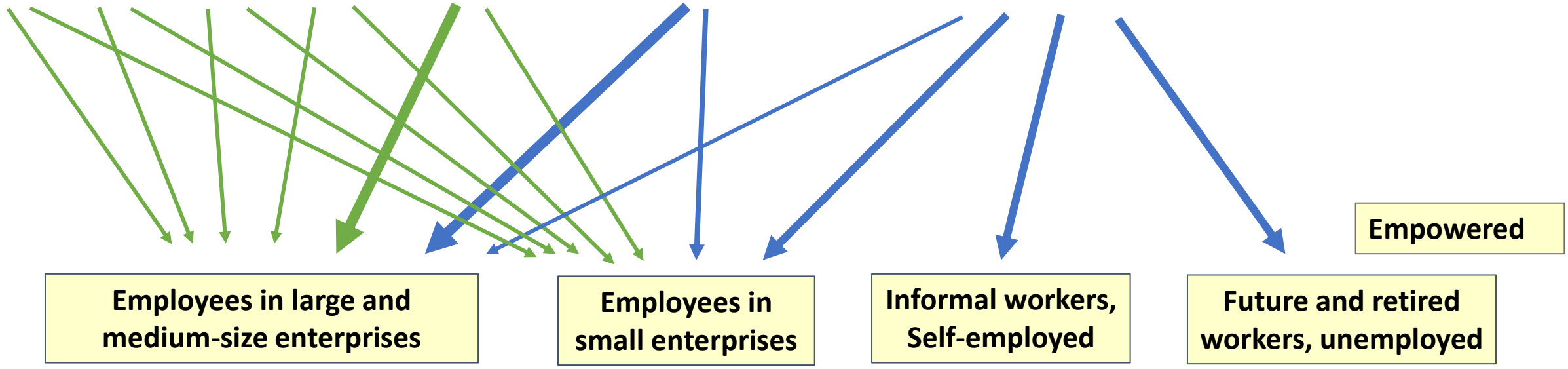


Figure 2. Future structure of OSH care and support for workers

The BOHS Repository, an online database, has been developed to support the aim of realizing universal occupational health coverage

The repository (online bibliography) of the world literature on Basic Occupational Health Services, published in 2022 including references, descriptions and links to 189 publications.






Van Dijk FJ, Moti S. *Repository for publications on basic occupational health services and similar innovations in the world*. Leiden: LDOH Foundation; 2022.

Free available at <https://shop.ldoh.net/>, and at <https://iaohmumbai.org>.

A scientific article published in 2023, for background information.

Van Dijk FJ, Moti S. A Repository for Publications on Basic Occupational Health Services and Similar Health Care Innovations. *Saf Health Work*. 2023; 14:50-58. PMID: 36941938.

Free available at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10024225/>

						Concise standard version Repository 7 Sept 2022 df			
 						Authors: Frank van Dijk and Suvarna Moti		 	
last remarks towards Asia, USA						Concise version of the Repository of references to publications on Basic Occupational Health Services and similar initiatives in the world			
						<i>See also the complete version of the Repository that includes as well a brief introduction, and a description of the content of all publications</i>		Frank van Dijk: v.dijk.workandhealth@gmail.com Suvarna Moti:	
						<i>The repository is a non-commercial initiative and is published as an Open Access publication under Creative Commons Attribution-NonCommercial 4.0 International License (CC BY-NC 4.0).</i>			
Archive number	Author or Institute	Year of publication	Kind of source	Open Access or Not Open Access	Copyright regulations or Creative Commons or otherwise	Core bibliographic data		Global, regional or national perspective	Hyperlinks
Number	AUT = author NAT= national institute INT = internat. institute	A = < 1990 B = 1990-1999 C = 2000-2009 D = 2010-2019 E = 2020-2022	Book, Doctoral Thesis, or Guide Report Article Editorial, Book review, or Letter to editor Policy document or statement Lecture(s) or Session Newsletter or interview	OA = Open Access or NOT OA = Not Open Access	Copyright Creative Commons (CC) (no severe restrictions) No severe restrictions, other than CC, still conditions possible Copyright regulation uncertain	Vancouver bibliographic notation of the publication		Global Regional or Country name	Hyperlinks
						Section 1: Publications using a global perspective			
	WHO					WHO			
17	INT	C	Book	OA	Copyright	WHO Regional Office for the Eastern Mediterranean. Occupational Health. A manual for primary health care workers. Cairo; WHO: 2001. 171 pages		Global	https://apps.who.int/iris/handle/10665/116326
18	INT	C	Report of session of committee OH	OA	Copyright regulation uncertain	ILO. Summary report of Thirteenth Session of Joint ILO/WHO Committee on Occupational Health 9-12 December 2003. JCOH/2003/D.4. Geneva; ILO: 2003. 17 pages		Global	https://www.ilo.org/global/topics/safety-and-health-at-work/resources-library/publications/WCMS_110478/lang-en/index.htm
19	INT	C	Article in Newsletter	OA	Copyright	Eijkemans G. Occupational health services as a part of primary health care. Asian Pacific Newsletter on Occupational Health and Safety. 2004; 11, no 3: 51-53. (FIOH, Helsinki)		Global	https://scholar.google.com/scholar?cluster=16562602559926663698&hl=nl&as_sdt=0,5&as_vis=1
20	INT	C	Report of intercountry workshop	OA	Copyright	World Health Organization. Primary health care and basic occupational health services challenges and opportunities. Report on an intercountry workshop, Sharm El-Sheikh, Egypt, 12-14 July 2005. 2006, 37 pages		Regional Eastern Mediterranean (EMRO)	https://apps.who.int/iris/handle/10665/254052
21	INT	C	Policy document	OA	No severe restrictions	World Health Organization. WHA Resolution 60.26. Global Plan of Action on Workers' Health 2008-2017. Geneva: WHO; 2007. 46 pages		Global	https://www.who.int/publications/i/item/WHO-FWC-PHE-2013-01

149	Chen Y	2010	Article, Open Access, Copyright Wiley presumably	Chen Y, Chen J, Sun Y, Liu Y, Wu L, Wang Y, Yu S. Basic occupational health services in Baoan, China. J Occup Health. 2010;52:82-8.	China Baoan province Evaluation study Experiments National policy Tasks package Quality activities Evaluation output, outcomes	<i>A brief description including a few (shortened) citations. Use the links to read the abstract and article.</i> A new model of basic occupational health services (BOHS) has been developed in Baoan, a province in China, including capacity building, training and education, occupational health surveillance, risk assessment and control, and evaluation. Target groups included underserved migrant workers in small- and medium-sized enterprises (SMEs). The recognition of occupational diseases improved, as well as the coverage of working places and workers. This rather large-scale innovative BOHS implementation was cost-effective, and was well-accepted by workers and enterprises.	https://onlinelibrary.wiley.com/doi/epdf/10.1539/joh.O9005	QC2 link to abstract in PubMed, also accessing full text article: https://pubmed.ncbi.nlm.nih.gov/20032589/
150	He	2010	Letter to editor, Not Open Access, Full text is available, see links, Copyright presumably Taylor and Francis	He Y, Liang Y, Wang X. Basic occupational health services and stakeholders' participation. Int J Occup Environ Health.2010;16:99-100.	China Evaluation opinion Experiments National policy Management quality, participatory approach	<i>The letter to the editor has no abstract. The brief description uses a few citations from the Letter. Use the link to read the publication.</i> In China, Basic Occupational Health Services (BOHS) have been developed for workers in small-scale enterprises or in the informal sector. Stakeholders' participation is needed. IJOEH reported on a participatory model in Thailand including capacity building, risk analysis, problem solving, and monitoring & control. In China, the Work Safety Law and the Prevention and Control of Occupational Disease Act, were enacted in 2002, forming the foundation for pursuing BOHS. However, the work was not satisfactory as in most of the informal sector stakeholder involvement was low. The participatory model might be an appropriate strategy for China and other developing countries. To foster collaboration, coordination is needed to make an action plan. A public forum could be developed for the stakeholders such as workers and their representatives, academic professionals, and industrial hygienists. Building worker capacity is a key component. Local community health centers should be involved.	link to title (PubMed): https://pubmed.ncbi.nlm.nih.gov/20166325/ link to full text: https://www.researchgate.net/profile/Yonghua-He/publication/41484980_Basic_Occupational_Health_Services_and_Stakeholders%27_Participation/links/55482ea40cf2b0cf7aceb71d/Basic-Occupational-Health-Services-and-Stakeholders-Participation.pdf?origin=publication_detail	QC2
151	Zhang X	2010	Article, Open Access, © The Japanese	Zhang X, Wang Z, Li T. The current status of	China Need study	<i>The brief description using a few citations from the abstract. Use the link to read the full abstract and article.</i> Major health problems among Chinese workers are summarized, various strategies and measures, and current challenges.	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2921040/	QC2

BOHS

Development opportunities and challenges, 4 themes and 16 subthemes

Start of BOHS

1. General description status quo
2. Available information on risks, effects, workers' health care
3. Public awareness of risks, effects, workers' health care
4. Experiments in BOHS
5. Start national policy, strategy promoting BOHS

BOHS structures and implementation

6. Legislation, regulations and financing
7. Coverage of diverse worker populations
8. Tasks of BOHS (complete)

Infrastructure, education and support for BOHS

9. Good education and training facilities for students, practitioners, volunteers
10. Support by national and regional expertise centers
11. Support by online facilities
12. Referral system to / support by OSH experts, clinical and laboratory experts

Quality of BOHS in practice

13. Good mix of disciplines; use of volunteers; current competences
14. Management quality, OH engagement of staff, participatory approach, priorities
15. Quality of workers' health services (effective, evidence-informed, accessible)
16. Evaluation of BOHS output, outcomes, costs-benefits

Opportunities and challenges in BOHS development

in four BOHS development themes

Start

Structures and implementation

Infrastructure

Quality

the term primary health care is sometimes taken synonymous with community health care

for the content and examples, we used the BOHS Repository and other sources

Start of BOHS

Frequent challenges

Low public awareness, lack of studies and case reports in the media so missing basic information, no experiments, no intersectoral collaboration between labor and health care), no interdisciplinary teamwork, no national coalitions or meetings or plans and strategies for good legislation, poor international support.

Opportunities

Awareness raising programs in the media, financing studies, creating coalitions, strategy development, promoting better legislation, support by government and national organizations (workers, employers, social security), more support by international organizations (WHO, ILO, ICOH, WONCA, ISSA).

Theme 1. Start of BOHS opportunities, challenges

Experiments in BOHS

- 1. Siriruttanapruk, 2006 Thailand.** Thailand's Ministry of Public Health supported by ILO developed a new model. OSH services were integrated into Primary Care Units (PCU). After a five-day training course, activities in the community and outpatient services were implemented with the help of agricultural work groups and community workers. PCU staff now have the capacity to provide OSH services and health promotion activities to workers. Provincial health personnel provided better support to PCUs. Advocacy is necessary to create a national policy and support by sufficient budget and other resources. Local awareness raising is important.
- 2. Chen, 2010 China.** A model of BOHS has been developed, supported by the Ministry of Health. Report from Baoan, a recent industrialized district. Occupational hazards are shown. BOHS included capacity building, training and education, occupational health surveillance, risk assessment and control, and evaluation. Target groups included migrant workers in small- and medium-sized enterprises. Recognition of occupational diseases and coverage of working places/workers improved. The implementation, well-accepted by workers and enterprises, was cost-effective. Working environment surveillance was a key element. Awareness in workers and managers increased. Employers and government shared financing BOHS. Government paid for self-employed and informal workers. BOHS covered 1.9 out of 2.3 million workers in 2008.

Start of BOHS opportunities, challenges

Experiments in BOHS

- 3. Zhang, 2010 China.** There is a lack of occupational health services for migrant workers. Supervision of small- and medium-scale enterprises needs improvement. In 2006 a 3-year BOHS pilot study is developed in six regions. Goals: survey the situation in OH services, promote the capacity of OHS service building and training in the CDC (Center for Disease Control and prevention) of each district, making plans and develop work assessments. The pilot was basically successful.
- 4. He, 2010 China.** BOHS have been developed in China, but in the informal sector stakeholder involvement was low. The participatory model might be appropriate for China and other countries. A public forum could be developed for the stakeholders. Building worker capacity is crucial, and local community health center involvement.
- 5. Liu, 2013 China:** biggest challenge for community healthcare centers is lack of human resources, and need to empower employees.

Experiments in BOHS

6. Parekh, 2018 India

Book and
24 training videos
for education of
primary and
community health
care workers

Challenges:
large-scale
implementation

The screenshot shows a YouTube channel page for the Indian Association of Occupational Health (IAOH). The channel name is 'Indian Association of Occupational Health' with a red 'ABONNEREN' (Subscribe) button. The video list includes:

- 1 01 - BOHS for Informal Industry Via Primary Care Ecosystem (19:08)
- 2 02 - Agriculture (23:16)
- 3 03 - Animal Husbandry (24:10)
- 4 04 - Toddy Tapping (12:08)
- 5 05 - Forestry Work (15:08)
- 6 06 - Commercial Fishing (16:36)
- 7 07 - Leather and Tanning Work (24:43)
- 8 08 - Weaving Work (24:45)
- 9 09 - Artisans (23:02)
- 10 10 - Salt pans (16:28)

BOHS for informal
industry

Agriculture

Animal Husbandry

Toddy tapping

Forestry Work

Commercial Fishing

Leather & Tanning

Etc

Experiments in BOHS

7. Garrido, 2020 Chili and Peru. Integrating basic occupational health services into primary care is encouraged by the Pan American Health Organization (WHO), concrete initiatives are scarce. Four universities in Chile and Peru piloted a new training program for PHC professionals on prevention of occupational risks. OH and PHC lecturers with representative(s) of one rural primary healthcare center started with a workshop on participatory diagnosis of working conditions. Next, they designed an active teaching intervention targeted at the main occupational health problem in the community. The teams evaluated the program very positive. Hazardous working conditions could be visualized, abilities for problem analysis and preventive actions improved. Challenges are time constraints and difficult geographical access. Lack of national strategies and poor legislation in L.A. Exception: Brazil.

8. Moyo, 2021 Southern Africa. African Union Development Agency (AUDA) supports training of occupational hygienists and doctors in four countries. OSHAfrica is active in guidance on OSH legislation and on education of OSH professionals. Zambia improved OHS provision structures. A big rehabilitation center is established In Zimbabwe by the National Social Security Association that also introduced mobile occupational health services to companies.

Theme 2. BOHS structures and implementation

Frequent challenges

Outdated legislation only covering regular employees or only large & medium- sized industrial enterprises; good laws, but no enforcement; no or insufficient financing of BOHS tasks; insufficient coverage esp. for informal workers and agriculture; incomplete services e.g. no rehabilitation efforts, limited community tasks outside PHC center

Opportunities

Renewing legislation covering also informal workers, self-employed, workers in small companies and agriculture; law enforcement; sufficient financing (social security resources?); central supervision on package of services and coverage.

Legislation, regulations & financing implemented

- 1. Siriruttanapruk, 2022 Thailand.** BOHS activities in Thailand are organized by the DOED, Division of Occupational and Environmental Diseases, part of the Ministry of Public Health (MOPH). The DOED developed a national OH service system by integration in the existing governmental healthcare system in a systematic way including several pilot project phases from 2004. Recently, the Department of Disease Control enacted the Control of Occupational Diseases and Environmental Diseases Act (2019) regulating the quality in all OH services, including the access for informal workers to OH services through PHC services. Financing is a problem because BOHS provision is still not formally covered by universal health coverage. Nevertheless, about 85% of the primary care units reports to perform BOHS services. In 2020, in the Quality Assessment Audit, 75% of PCUs were certified for basic or higher levels of BOHS standards.
- 2. Amorim, 2017 Brazil.** The 1988 constitution and the regulations of the Organic Healthcare Law, assigned to the Unified Healthcare System (SUS) the responsibility of providing comprehensive occupational healthcare. The National Occupational Health Policy (PNSTT) published in 2012, points the way how important worker care is within the scope of Primary Care, considered the coordinator of care and the ordering force of the network.
- 3. Moyo, 2021 Southern Africa.** Occupational health legislation is fragmented and not adequate. Adoption of the BOHS model will improve access to OHS.. A radical transformative approach by governments is needed challenging the status quo.

Theme 3. Infrastructure, education and support for BOHS

Frequent challenges

Limited or no education in OM in undergraduate medical curricula; limited facilities for professional and continuous education of OSH professionals; no national institute for OSH; no regional support or referral opportunities for primary or community health care providing BOHS; poor online facilities.

Opportunities

Integration of OH in medical curricula; academic collaboration realizing inter- or multidisciplinary professional education for OSH professionals: **occup. physicians, nurses, hygienists, safety exp., ergonomists, psychologists, comm. hlth workers** training volunteers; advocating for a national OSH institute & knowledge infrastructure; realizing apps & websites, Q&As, e-learning materials, online or blended courses, MOOCs, webinars, online databases; international collaboration

Support for BOHS by regional expertise centers

1. Denny, 2012 Indonesia. BKKM, a center for occupational health referral services supporting community health care, improved knowledge of and engagement in occupational health among workers and health officers. This is the outcome of a comparison study between West Java and Central Java. Local governments' political commitment to funding occupational health, improved as well.

2. Silva TL, 2014 Brazil. Family Health Teams in PHC are responsible for workers' health. They ask for more pedagogical and technical support from CEREST centers. Worker's Health Reference Centers (CEREST) are effective supporting including occupational health in PHC practice. Important is the sensitization of the PHC professionals for issues involving workers' health, and the definition of the actions. Lack of support was a complaint as well. "We can't do everything alone". Other initiatives of the Ministry of Health: an Information Panel in Environmental Health and Workers' Health, and an online National Network of Comprehensive Care to Workers' Health (RENAST).

3. Amorim LA, 2017 Brazil. Worker's health activities of Family Health teams was supported by CEREST centers (45 % of physicians and nurses in one city. Team support and education should be extended.

Support for BOHS by regional expertise centers

4. Lazarino MSA, 2019 Brazil. CEREST support allowed recognizing a user (patient) as a worker and work as determinant of health in PHC. Better contact between CEREST professionals and PHC network reduced referrals to CEREST.

5. Simmons, 2018 USA. In community health centers, clinicians want the ability to refer complex patients to occupational health specialists or obtain advice through telephone consultation. Also, referral of patients with e.g. exposure issues for non-clinical OSH services and referral of patients to e.g. a health outreach worker to help in legal or social issues. A few states in USA have networks of centers providing OH services for referred patients.

6. Samsuddin N, 2019 Malaysia. Referral options for more complicated workers/patients in BOHS are limited because of limited expertise on OH in the curative health care. Many clinics are private and expensive. A tertiary referral center for occupational disease and poisoning is proposed through cooperation of university hospitals.

Theme 4. Quality of BOHS in practice

Frequent challenges

Poor quality of services e.g. no diagnosis of occupational diseases; PHC practitioners unaware of workers' health; missing occupational health nurses in BOHS team; no volunteers; shortage of OSH experts needed for coordination, encouraging advice, support and referrals; PHC management not engaged with workers' health; overloaded PHC; no participatory approach; no evaluation.

Opportunities

Better education & training of PHC, more online and regional support; realizing coordination by competent OH nurses (OHN); more OSH professionals for support and referrals; OM/OH education in medical faculties; attention for competition in PHC between curative and preventive functions; education in participatory approach; structural evaluation; valuing primary and community health care.

Good mix of disciplines, with a focus on OH Nurses

1. Wittayapun, 2008 Thailand. The BOHS model in Thai primary care units is analyzed via focus groups with nurses, public health professionals and others. In-house and outreach activities are described. Final recommendation: appoint OHNs as mentors, consultants, educators and supervisors.

2. Kerdmuang, 2014 Thailand. Development of the Occupational Health Service Competency Scale, a self-assessment tool for nurses in Thai primary care units. Competences needed in primary health care differ from those in large companies. In PHC most attention is to small companies, OHNs are the main providers of health care services, offering comprehensive and continuous care to all people, requiring a high level of knowledge and traits. The Scale has sound psychometric properties.

3. Mori, 2016 Brazil. Recognition of occupational diseases by doctors and nurses in Primary Care in one municipality is studied. Only 3 of 16 professionals received professional training in occupational health. Primary Care is considered priority for workers' health actions, but practitioners reported inadequate knowledge and tools. Recognition of occupational diseases is a problem. Inexperience is causing feelings of difficulties and discomfort, stressing the need for professional training and continuous education.

Good mix of disciplines, with a focus on OH Nurses

4. Amorim, 2017 Brazil. Worker's Surveillance activities of Family Health teams were studied based on perceptions of physicians and nurses in one city. Productive activities in the community were mapped by 53%, and 30% related these to health hazards. Occupational risks are identified by 47%. Activities to eliminate/mitigate exposure to risk and vulnerabilities by 24%, and occupational health training are both mentioned by 24%. Of the teams, 79% resp. 68% reported that they (almost) always try to find out and understand user (patient) occupations, but workers' surveillance practices are rare and sporadic.

5. Metin, 2023 Türkiye. Experts in a comprehensive Delphi study panel reached consensus on a definition of occupational health nurse (OHN). Responsibilities of OHN are creating a healthy and safe workplace, participation in periodic health examinations, maintaining effective communication with employees. Topics were specified for a certificate program (maximum 500 hr. training time).

Recommendations

Start BOHS	Develop awareness-raising programs and financing of studies. Support case reports in media and organizes BOHS experiments. Create coalitions with PHC organisations, discuss new strategies including proposals for better legislation. Ask for support from national and international organizations.
BOHS structure	Renewal of legislation integrating workers' health in primary or community health care to cover informal workers, self-employed, workers in small enterprises and agriculture. Secure sufficient financing e.g. by social security resources. Secure structural supervision on BOHS services, coverage, and quality.
Infrastructure	Promote integration of OM in medical curricula and in the professional education of PHC disciplines. Organize academic collaboration realizing multidisciplinary professional education of OSH professionals needed for coordination, education, support, and referrals. Advocate for a national OSH institute. Integrate OH in the knowledge infrastructure of PHC inclusive of a variety of online and face-to-face information & education facilities, also for enterprises and workers. Participate in international initiatives, collaboration can help!
Quality of BOHS	Enable continuous education in workers' health for PHC. Realize workers' health coordination in PHC by a competent OH nurse. Make use of online and regional PHC support by OSH experts, clinicians, laboratory facilities. Spend attention to balance issues e.g. when curative and preventive functions compete in PHC. Give due attention to a participatory approach and organize a structural self-evaluation.

Regarding a BOHS working group and the Repository

1. We will start an **International BOHS Working Group** for the promotion and study of BOHS and similar innovations in health care.
2. The **Repository for publications on BOHS** is a good point of departure when starting explorations and studies on BOHS.
3. The **Repository needs to be updated and enriched** per country or region, per theme.

Volunteers are welcome!

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