Teaching from afar: The online *"International Program in Occupational Health Practice"* for OH/OccMed education in low-resource countries

http://www.uic.edu/sph/glakes/ce/IntPrgOHP.html

Norbert Wagner, MD, PhD
Director, International Program in Occupational Health
Department of Environmental and Occupational Health Sciences
School of Public Health, University of Illinois at Chicago (UIC)
NLWagner@uic.edu
APHA 2010, Denver

UIC UNIVERSITY OF ILLINOIS AT CHICAGO

Overview

1. Goal
2. Target group
3. Structure
4. Delivery Mode & Methods
5. Teaching Philosophy
6. Participants & Examples
7. Results, Assessment, Impact
8. Limits, Challenges, Obstacles

The short version: Why & How?

Why?

- In most countries, OSH/OccMed is practiced by people with no training in OccMed, hence a need for training
- Most countries cannot afford an expert-focused OH/OccMed approach

How?

- Distance-education, internet-based, instructor-led, prevention-centered program

Target Group & Goal

Designed for:

- OSH service providers (doctors and nurses) in companies or governments worldwide
- Professionals in developing countries with no formal training

Goal:

- Improving skills and leadership competencies for effective occupational health programs
- Focus in universal principles and prevention with international outlook
- Introductory to intermediate level training
- Focus on practice, i.e. including out-of-the-box issues for field company doctors

Structure of Program

- One program of three courses
- Approximately 340 hours of work during nine months (equivalent of a three month residential course)

- Foundation Course: 10 weeks
  Foundations of Occupational Health Practice
- Advanced Course: 8 weeks
  Clinical Occupational Medicine and Medical Surveillance
- Advanced Course: 8 weeks
  Management in Occupational Health Practice

Delivery Mode

- **100% online**, no visits on campus
- **Asynchronous** (different time zones)
- Instructor-led with **individual feedback**
- Cohort of participants ('all start together')
- Professional e-learning platform Blackboard™
- **Languages:** English for teaching plus Spanish, French, German for assignments & communication (possibly Arabic in 2011)
- **Co-instructors** to provide additional content expert support and mentorship (IH, OM, no OHN)

UNIVERSITY OF ILLINOIS
AT CHICAGO

Occupational and Environmental Health and Safety Education and Research Center (MC922)
School of Public Health
2121 West Taylor Street
Chicago, Illinois 60612-7260

Great Lakes Centers for Occupational and Environmental Safety and Health

World Health Organization Collaborating Center

INTERNATIONAL PROGRAM IN OCCUPATIONAL HEALTH PRACTICE

Module 1

International Codes of Conduct and Professional Ethics

Welcome to the module 1 of our new Course!!

Hello everybody!

This week we want to look at International Codes of Conduct and Professional Ethics. But, in everything we do we HAVE a concept in our mind which guides our practice. Now, which concept do we have in mind when we conduct medical examinations, decide if a person can get a job or not, write an opinion on fitness-for-work, pass on or refuse to pass on medical information to the employer etc????

This is the area of professional ethics and of guidelines that help us make good decisions (Note: I am not saying "perfect" decisions!). The goal is to come to a decision that would be supported by other experts or professional organizations in the same situation.

*In this **Course II** we will look specifically at Medical Surveillance in companies: What are we doing or supposed to do to watch over the health of the employees? What does the law in your country require us to do? How do other countries regulate medical surveillance in the workplace?*

But we also want to look behind the scene: Why are we doing it? What is the medical, economic and ethical rationale behind it? What kind of examination does actually make medical sense? What is the evidence that medical examinations at the workplace actually help to improve health or prevent diseases?

As we are working with confidential data: What are we allowed to tell management? How do we inform the patients of the results? How do we inform management of the results? What happens when we find an occupational disease?

Teaching Modules

Teaching Philosophy

Focus on

- ***Practical Competencies***,
  e.g. extensive use of checklists for skills' training, case-based exercises, realistic challenges for problem-solving skills
- ***Application of knowledge***
  e.g. use of case studies, discussions and complex challenges, individualized assignments

Chemical Safety Checklist

This checklist has been developed to provide guidance on hazard identification in industrial workplaces concerning safe work practices with chemicals. It is confined to questions that can be easily answered by observation and questioning the workers. It is therefore not all-inclusive in coverage. Answers that do not comply with the preset ones (☐) indicate problem areas, which should receive further attention. Further investigation ma a decision on whether corrective measures are required.

Use of checklists for practical exercises and increased learning impact

Facility name and location: _____

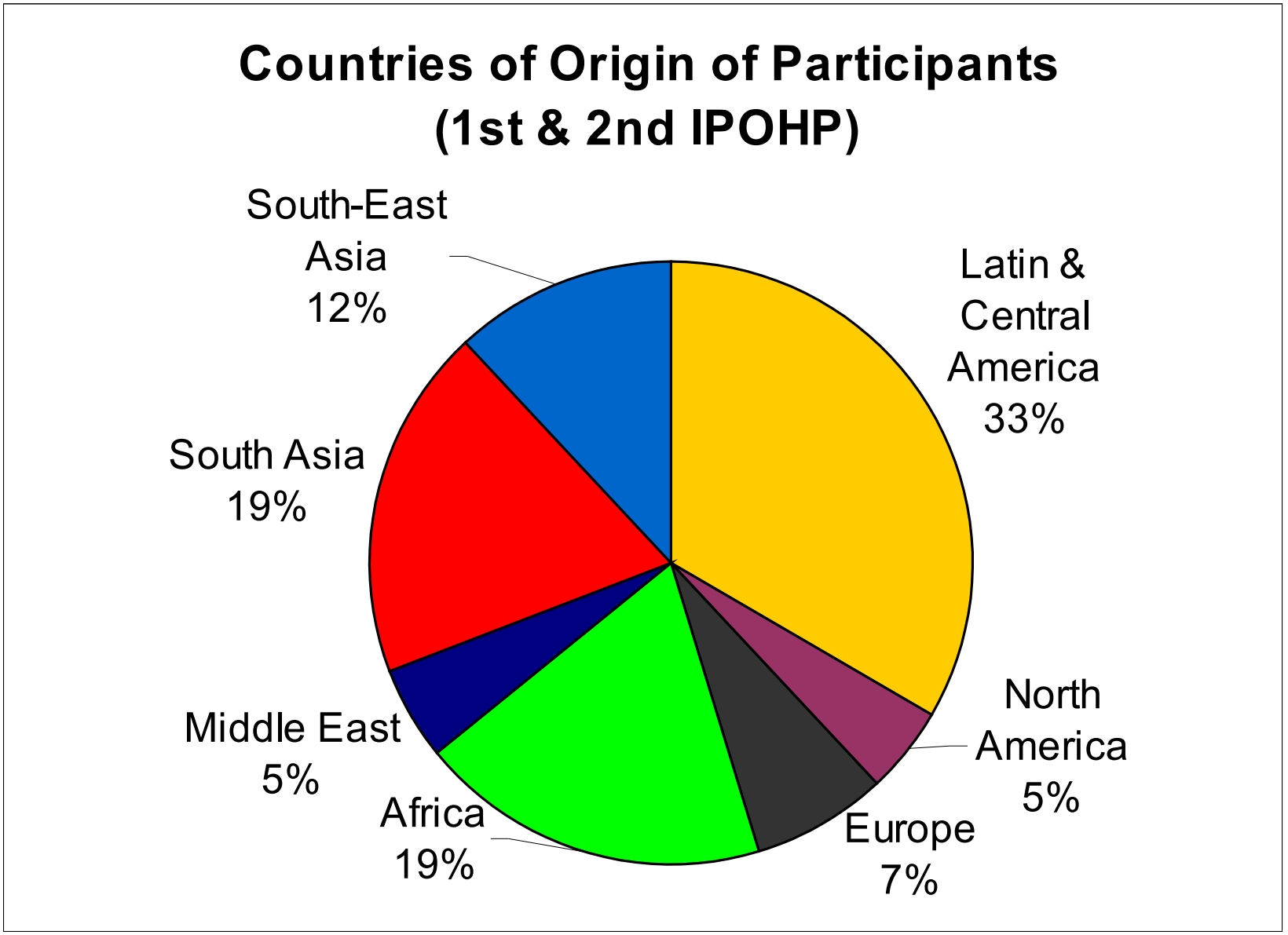
Evaluation conducted by: _____

Work area inspected: _____

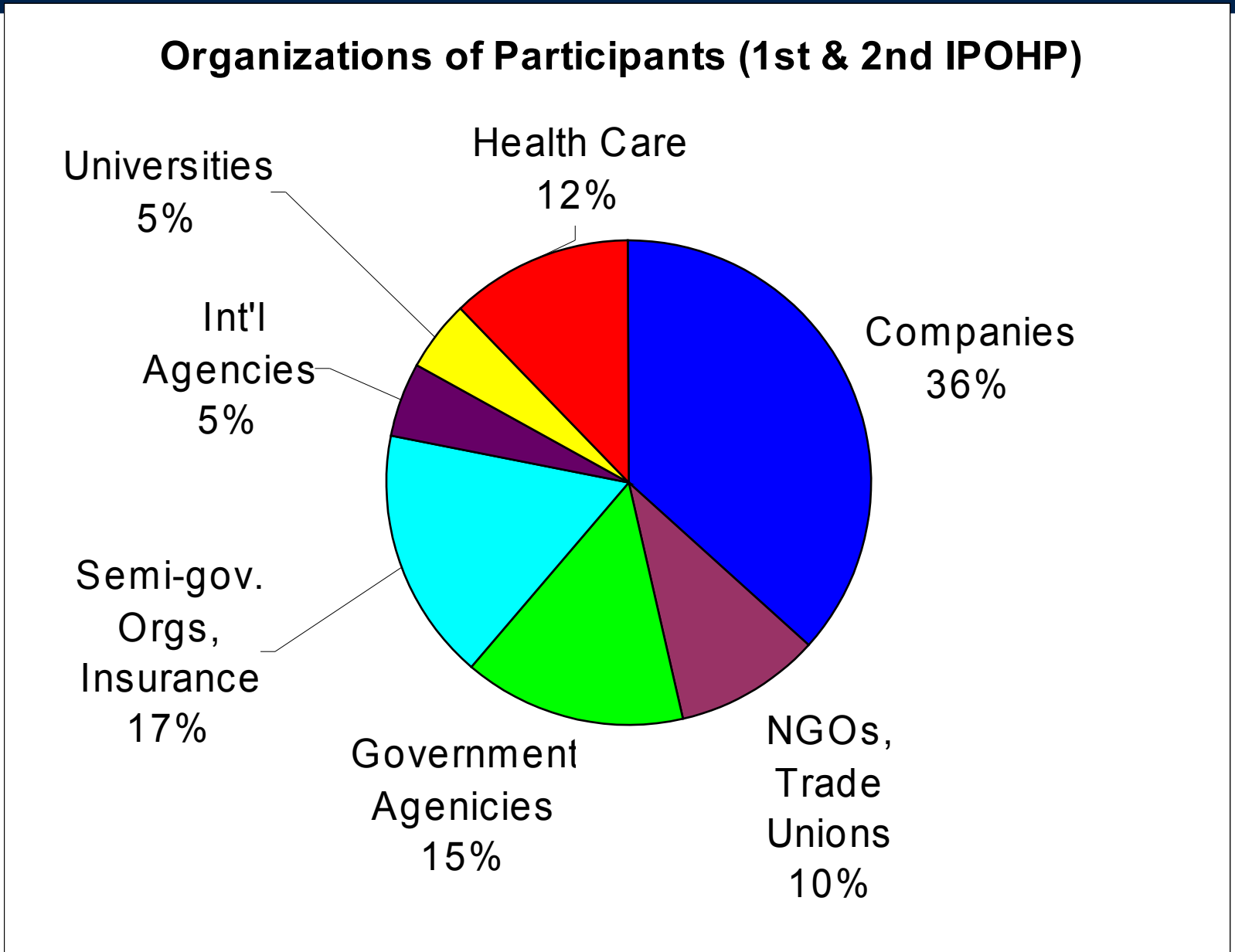
Product manufactured:

	Question	Yes	No	Comments
(1)	Do the employees know with which substances (not only brand names) they are working?	☐		
(2)	Has the employer informed all workers of the hazards involved?	☐		
(3)	Are the Material Safety Data Sheets present in the company?	☐		
(4)	Are the Material Safety Data Sheets present at the workplaces and easily accessible to the workers?	☐		
(5)	Are employees trained in the safe handling practices of hazardous chemicals, such as acids and caustics?	☐		
(6)	Are employees aware of the potential hazards involving various chemicals stored or used in the workplace, including acids, bases, caustics, epoxies, and phenols?	☐		
(7)	Is there skin contact with chemicals?		☐	
(8)	If gloves are used: has the employer checked that these gloves are suitable and appropriate for the chemical and task?	☐		
(9)	Has the employer checked (by estimates or measurements) if the employee exposure to chemicals is within acceptable and permissible levels?	☐		
(10)	Is there any smell of chemicals in the air or are particles visible (fumes, dusts, aerosols)?		☐	
(11)	Are eye wash fountains and safety showers provided in areas where corrosive chemicals are handled?	☐		

Countries of Origin of Participants

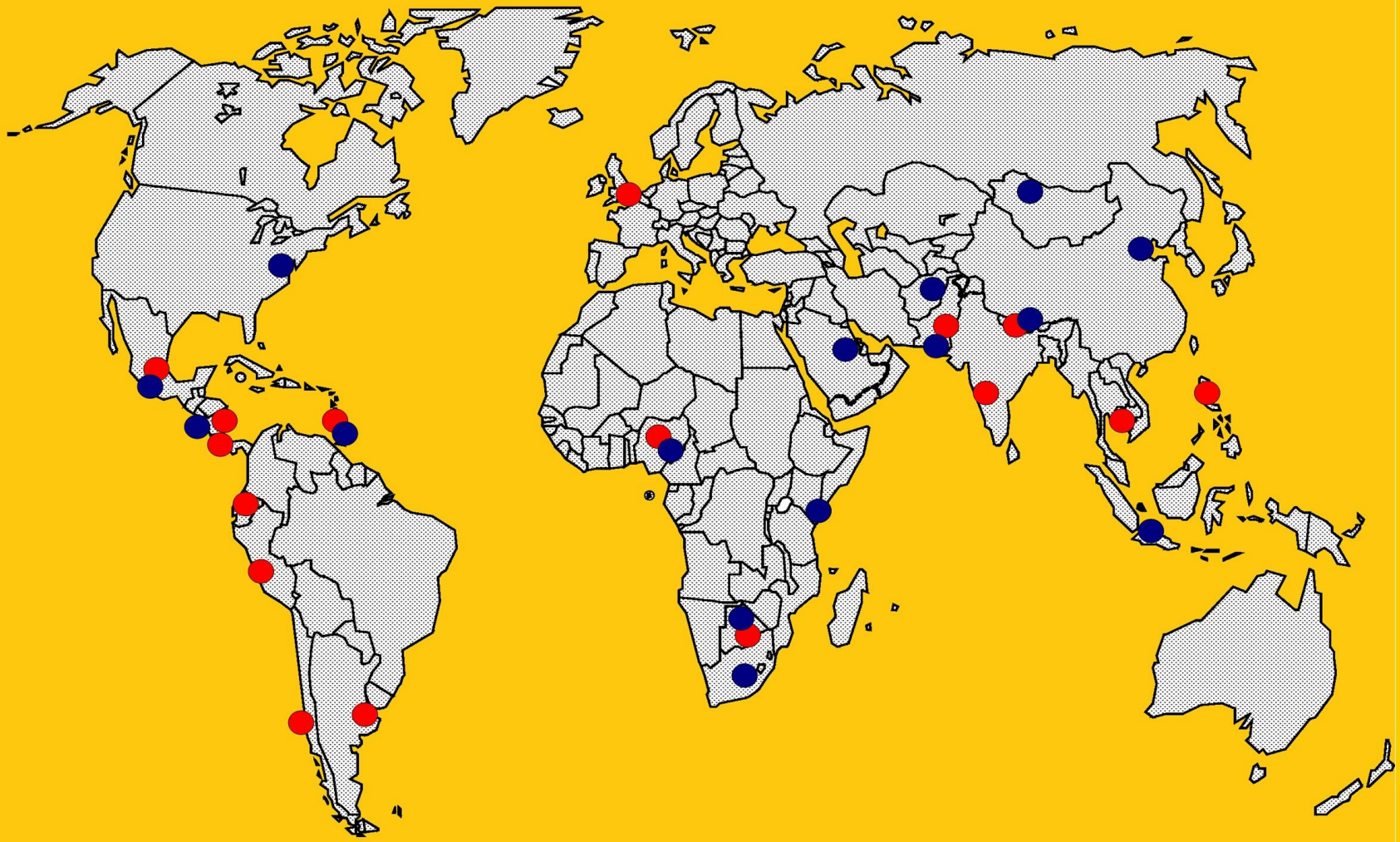


Organizations of Participants



Participants come from ….

Where do our participants come from?



Examples of participants' work

Practical Assignments: e.g. workplace assessment of dentist

b. **Identify all the chemicals that are present**

The process to treat caries is:

1)Check the patient, identify caries, drill and clean the carie, opening the hole

2) Calcium hydroxide (Dycal) is made with a base and catalyst to as a pulp capping material.

3) The mix preparation to cover the cavity:

The Amalgam

Ag46,5% Sn30% Cu23,5%

Spray Painting

Workplace Hazard Assessment Form

Pg ①

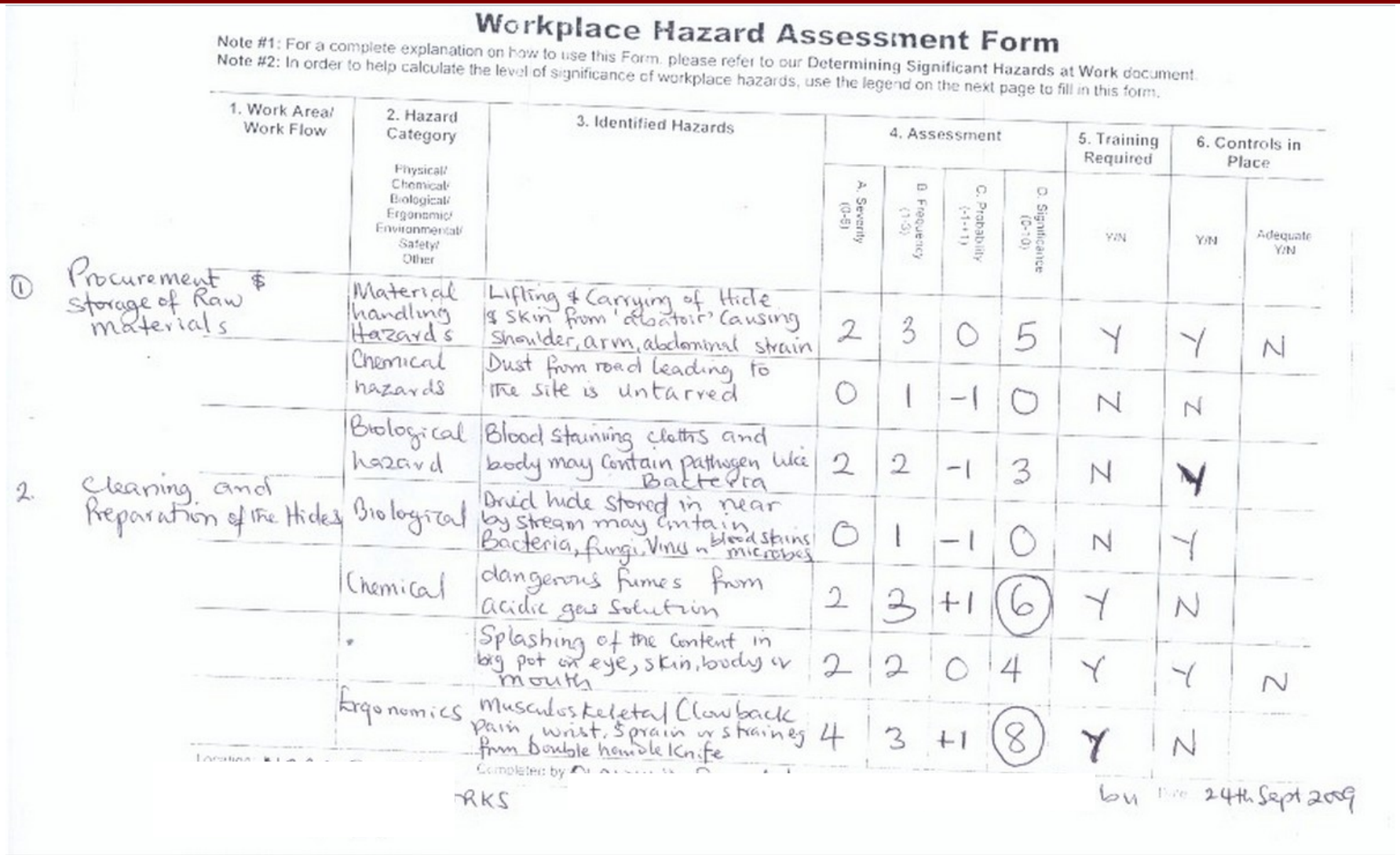
Note #1: For a complete explanation on how to use this Form, please refer to our **Determining Significant Hazards at Work** document.
Note #2: In order to help calculate the level of significance of workplace hazards, use the legend on the next page to fill in this form.

1. Work Area/ Work Flow	2. Hazard Category (Physical/ Chemical/ Biological/ Ergonomic/ Environmental/ Safety/ Other)	3. Identified Hazards	4. Assessment				5. Training Required	6. Controls in Place	
			A. Severity (0-6)	B. Frequency (1-3)	C. Probability (-1-+1)	D. Significance (0-10)	Y/N	Y/N	Adequate Y/N
① BELT MOVEMENT OF VEHICLE INTO SPRAY PAINTING BOOTH	MATERIAL HANDLING HAZARD	VEHICLE MIGHT FALL OFF CONVEYER BELT RESULTING IN ACCIDENTAL CONTACT WITH MOVING LOAD	6	1	0	⑦	Y	Y	Y
② SPRAY PAINTING OF VEHICLE	CHEMICAL HAZARD	SPRAY PAINT MIST MIGHT BE ACCIDENTALLY BE INHALED OR INGESTED THERE MIGHT BE EXPOSURE THROUGH SKIN OR EYES	6	3	+1	⑩	Y	Y	Y
	ERGONOMIC HAZARD	SPRAY PAINTING INVOLVES STRETCHING, TWISTING & BENDING OF THE BODY & HOLDING SPRAY GUN ABOVE SHOULDER HT.	4	3	+1	⑧	Y	Y	N
	PHYSICAL HAZARD	NOISE GENERATED WHILE SPRAY PAINTING IS A PHYSICAL HAZARD	6	3	-1	⑧	Y	Y	Y
	FIRE HAZARD	SOLVENT MIST IN THE AIR MIGHT RESULT IN FIRE IF EXPOSED TO ELECTRICAL WIRING (SPARK) ETC	6	1	0	⑦	Y	Y	Y
	STRESS HAZARD	NOISE CAN BE A CONSTANT PHYSICAL STRESSOR & CAN LEAD TO EXCESS STRESS OR DISTRESS.	2	3	0	5	Y	Y	N
	ENVIRONMENTAL HAZARD	SLIPPERY FLOOR MIGHT RESULT IN FALL	2	1	0	3	Y	Y	N

Date: 25/SEPT/09

IAPA
It's About Making A Difference.

Tannery



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	1. Work Area/ Work Flow	2. Hazard Category (Physical/ Chemical/ Biological/ Ergonomic/ Environmental/ Safety/ Other)	3. Identified Hazards	4. Assessment A. Severity (0-5)	B. Frequency (1-3)	C. Probability (-1-+1)	D. Significance (0-10)	5. Training Required Y/N	6. Controls in Place Y/N	Adequate Y/N
①	Procurement & storage of Raw materials	Material handling Hazards	Lifting & Carrying of Hide & Skin from 'abatoir' Causing Shoulder, arm, abdominal strain	2	3	0	5	Y	Y	N
		Chemical hazards	Dust from road leading to the site is untarred	0	1	-1	0	N	N	
		Biological hazard	Blood staining cloths and body may contain pathogen like Bacteria	2	2	-1	3	N	Y	
2.	Cleaning and Preparation of the Hides	Biological	Dried hide stored in near by stream may contain Bacteria, fungi, Virus n blood stains microbes	0	1	-1	0	N	Y	
		Chemical	dangerous fumes from acidic gas Solution	2	3	+1	(6)	Y	N	
			Splashing of the content in big pot on eye, skin, body or mouth	2	2	0	4	Y	Y	N
		Ergonomics	Musculoskeletal Clowback pain, wrist, Sprain or straineg from Double handle Knife	4	3	+1	(8)	Y	N	

Completed by RKS

Date 24th Sept 2009

UIC UNIVERSITY OF ILLINOIS AT CHICAGO

Chemical Safety Checklist

Chemical Safety Checklist

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Facility name and location: [illegible] Date: 15/10/2009

Evaluation conducted by:

Work area inspected: Warehouse - Fuel oil station.
Product manufactured:

	Question	Yes	No	Comments
(1)	Do the employees know with which substances (not only brand names) they are working?		✓	they do not have training.
(2)	Has the employer informed all workers of the hazards involved?		✓	NO training program.
(3)	Are the Material Safety Data Sheets present in the company?		✓	they do not know this
(4)	Are the Material Safety Data Sheets present at the workplaces and easily accessible to the workers?		✓	
(5)	Are employees trained in the safe handling practices of hazardous chemicals, such as acids and caustics?		✓	
(6)	Are employees aware of the potential hazards involving various chemicals stored or used in the workplace, including acids, bases, caustics, epoxies, and phenols?		✓	
(7)	Is there skin contact with chemicals?	✓		they only use gloves.
(8)	If gloves are used: has the employer checked that these gloves are suitable and appropriate for the chemical and task?	✓		
(9)	Has the employer checked (by estimates or measurements) if the employee exposure to chemicals is within acceptable and permissible levels?		✓	they do not checked. it is so expensive
(10)	Is there any smell of chemicals in the air or are particles visible (fumes, dusts, aerosols)?	✓		
(11)	Are eye wash fountains and safety showers provided in areas where corrosive chemicals are handled?		✓	dont have.
(12)	Are all containers, such as vats and storage tanks, labeled as to their contents?	✓		
(13)	Are employees required to use personal protective clothing and equipment when handling chemicals?	✓		but partially they needs improve
(14)	Do these personal protective clothing and equipment appear to be sufficient?		✓	
(15)	Are flammable or toxic chemicals kept in closed containers when not in use?	✓		
(16)	Are chemical piping systems clearly marked as to their contents?	✓		they need improve
(17)	Where corrosive liquids are frequently handled in open containers or drawn from storage vessels or pipelines, are adequate means readily available for neutralizing or disposing of spills or overflows?		✓	they not prepared for chemical spills.
(18)	Have standard operating procedures been established for cleaning up chemical spills?		✓	they do not have any equipment for
(19)	Where needed for emergency use, are respirators stored in a convenient, clean, and sanitary location?		✓	they don't have respirators for.
(20)	Are respirators intended for emergency use adequate for the various uses for which they may be needed?		✓	
(21)	Are employees prohibited from eating in areas where hazardous chemicals are present?		✓	they do not have safety program

Version 4

Ergonomic Semi-Quantitative Assessments

REBA Employee Assessment Worksheet

Based on Technical note: Rapid Entire Body Assessment (REBA), Hignett, McAtamney, Applied Ergonomics 31 (2000) 201-205

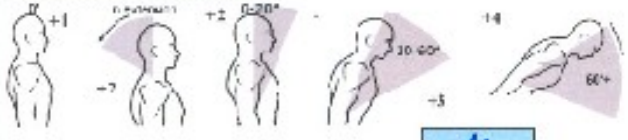
A. Neck, Trunk and Leg Analysis

Step 1: Locate Neck Position

Step 1a: Adjust...
If neck is twisted: +1
If neck is side bending: +1

3 — Neck Score

Step 2: Locate Trunk Position



Step 2a: Adjust...
If trunk is twisted: +1
If trunk is side bending: +1

4 — Trunk Score

Step 3: Legs

2 — Leg Score

Step 4: Look up Posture Score in Table A
Using values from steps 1-3 above, locate score in Table A

7 — Posture Score A

Step 5: Add Force/Load Score
If load < 11 lbs: +0
If load 11 to 22 lbs: +1
If load > 22 lbs: +2
Adjust: If shock or rapid build up of force: add +1

1 — Force/Load Score

Step 6: Score A. Find Row in Table C
Add values from steps 4 & 5 to obtain Score A.
Find Row in Table C.

8 — Score A

Scoring:
1 = negligible risk
2 or 3 = low risk, change may be needed
4 to 7 = medium risk, further investigation, change soon
8 to 10 = high risk, investigate and implement change
11+ = very high risk, implement change

SCORES

Table A

Trunk Posture Score	Neck 1	Neck 2	Neck 3
1	1	2	3
2	2	3	4
3	2	4	5
4	3	5	6
5	4	5	7

Table B

Upper Arm Score	Lower Arm 1	Lower Arm 2
1	1	2
2	1	2
3	3	4
4	4	5
5	5	7
6	7	8

Table C

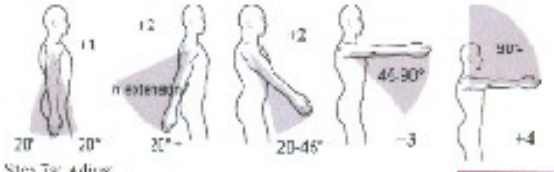
Score A	Score B 1	2	3	4	5	6	7	8	9	10	11	12
1	1	1	1	2	3	3	4	5	6	7	7	7
2	1	2	2	3	4	4	5	6	6	7	7	8
3	2	3	3	3	4	5	6	7	7	8	8	8
4	3	4	4	4	5	6	7	8	8	8	8	8
5	4	4	4	5	6	7	8	8	9	9	9	9
6	6	6	6	7	8	8	9	9	10	10	10	10
7	7	7	7	8	9	9	9	10	10	11	11	11
8	8	8	8	9	10	10	10	10	10	11	11	11
9	9	9	9	10	10	10	11	11	11	12	12	12
10	10	10	10	11	11	11	11	12	12	12	12	12
11	11	11	11	11	12	12	12	12	12	12	12	12
12	12	12	12	12	12	12	12	12	12	12	12	12

10 — Table C Score + 1 — Activity Score

11 — Final REBA Score

B. Arm and Wrist Analysis

Step 7: Locate Upper Arm Position:



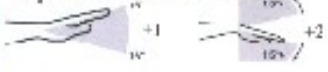
Step 7a: Adjust...
If shoulder is raised: +1
If upper arm is abducted: +1
If arm is supported or person is leaning: -1

4 — Upper Arm Score

Step 8: Locate Lower Arm Position:

2 — Lower Arm Score

Step 9: Locate Wrist Position:



Step 9a: Adjust...
If wrist is bent from midline or twisted: Add +1

1 — Wrist Score

Step 10: Look-up Posture Score in Table B
Using values from steps 7-9 above, locate score in Table B

5 — Posture Score B

Step 11: Add Coupling Score
Well fitting Handle and mid range power grip, *good: +0*
Acceptable but not ideal hand hold or coupling acceptable with another body part, *fair: +1*
Hand hold not acceptable but possible, *poor: +2*
No handles, awkward, unsafe with any body part, *unacceptable: +3*

1 — Coupling Score

Step 12: Score B. Find Column in Table C
Add values from steps 10 & 11 to obtain Score B. Find column in Table C, and match with Score A in row from step 8 to obtain Table C Score

6 — Score B

Step 13: Activity Score
+1 1 or more body parts are held for longer than 1 minute (static)
+1 Repeated small range actions (more than 4x per minute)
+1 Action causes rapid large range changes in postures or unstable base

Results

Overall Pass Rate (as of Nov 2010): 85%

Out of which:

- drop-out rate: ~ 10%, mostly scholarship recipients
- incomplete rate: ~ 5%

Reasons for discontinuing:

- money ran out …
- too much work for current situation …

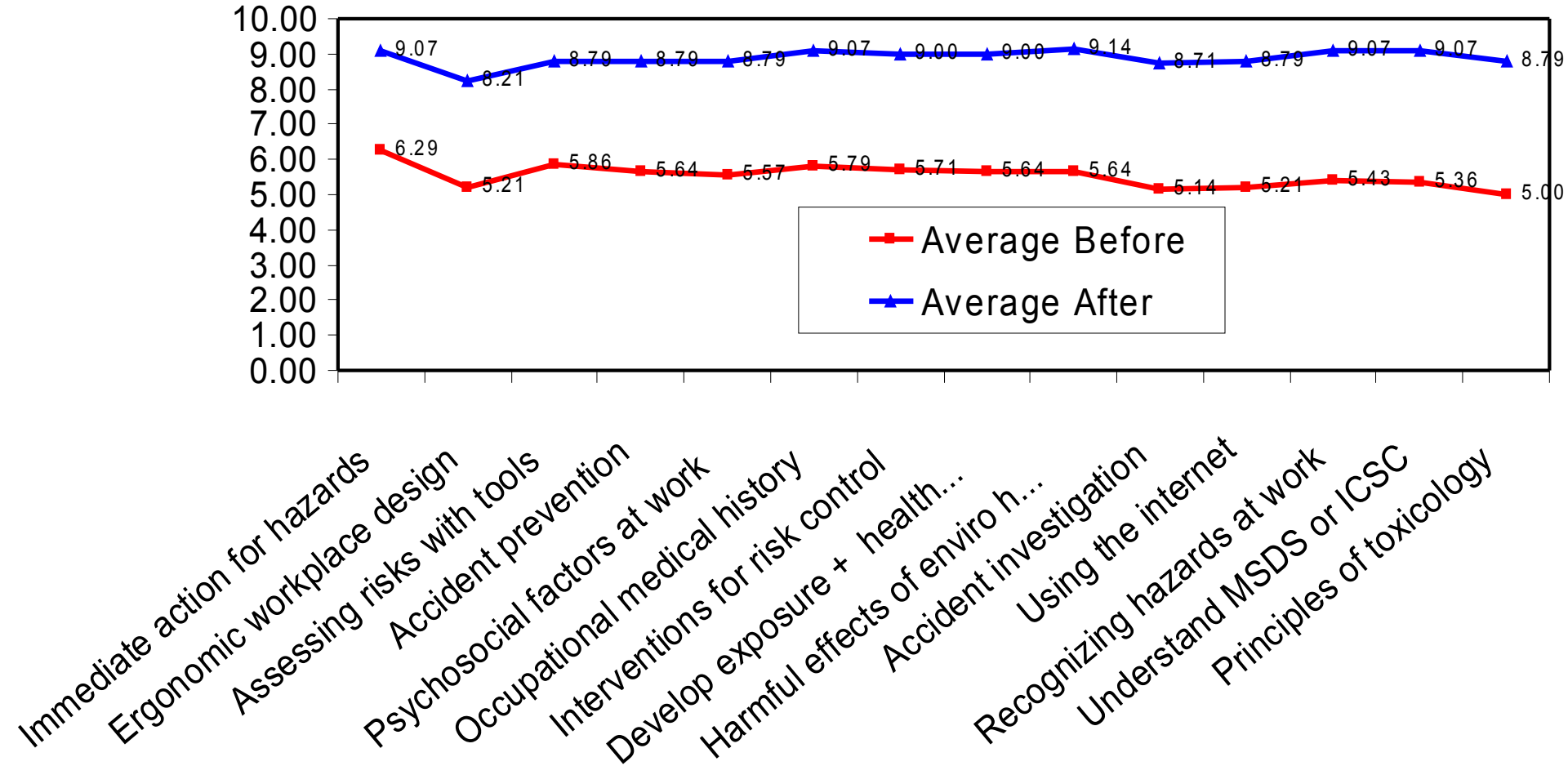
Post-Impact Assessment

On a scale from 1 (not good) to 10 (very good),

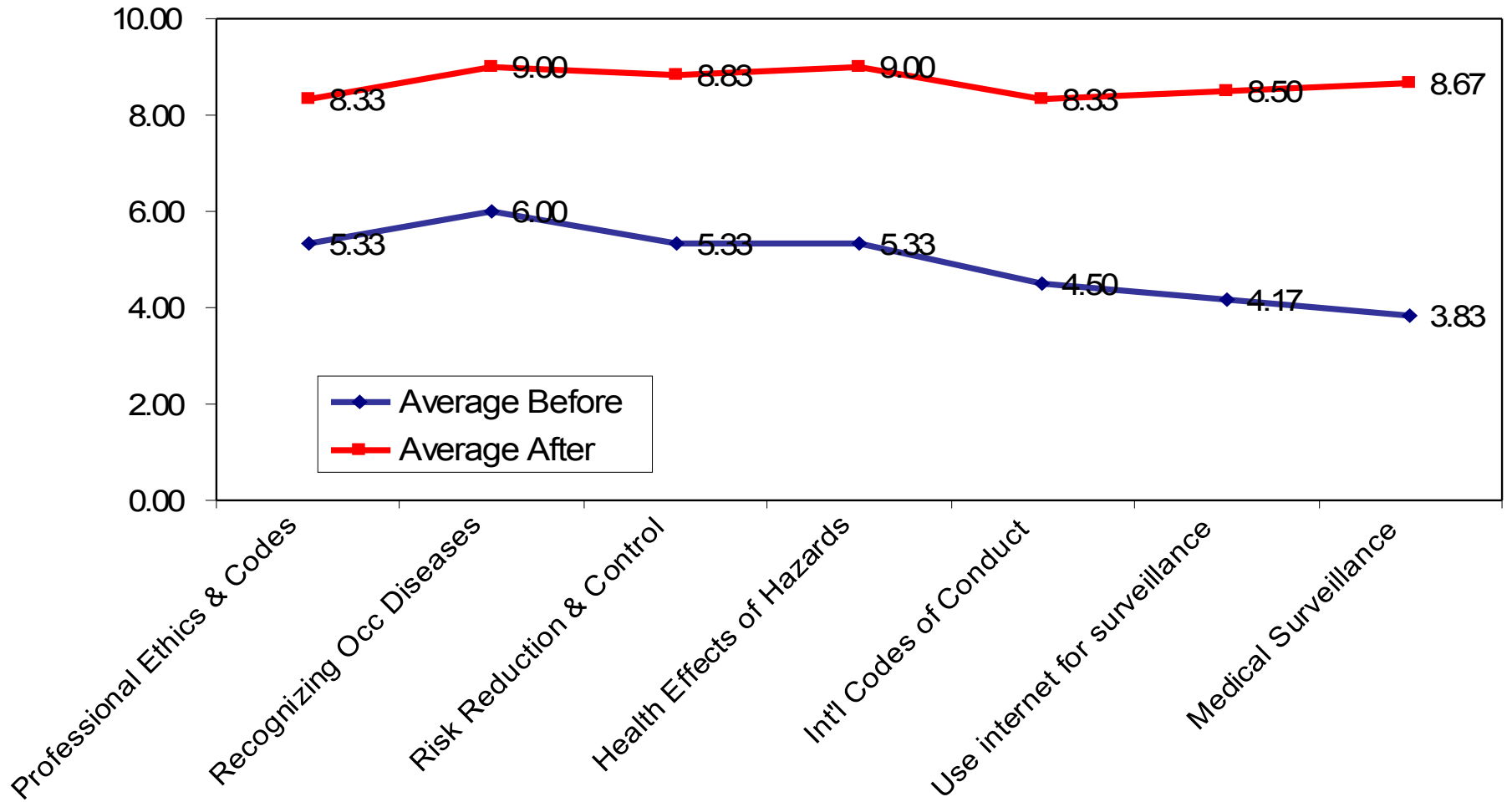
How capable were BEFORE …

How capable are you AFTER the course?

Post-Impact Assessment 1st IPOHP, Course I 2009:



Post-Impact Assessment 1st IPOHP, Course II 2010:



Limits, Challenges, Obstacles

- Bandwidth limits use of audio & video, conferencing tools
- Asynchronous = no face-to-face interaction
- Learning styles and cultural pattern in instructor-student interactions
- Communication styles, interpersonal and intercultural
- Language
- Purchase power parity, funds for not-for-profit organizations

Summary: *Why can we do this prg?*

- UIC - WHO Collaborating Center commitment to capacity building = support for promotion, fundraising, scholarships
- Received seed funding for course development
- Access to University resources (IT, administration) for inclusion of non-academic students
- Instructor/s
  - Experiences in teaching incl. web-based education
  - Content experts in both health and exposure assessment and prevention (risk assessment and risk management)
  - Experiences with multi-national corporate clients and with capacity building in developing countries
  - Multi-lingual

Summary: *Online teaching in occupational health …*

- Is possible, effective and can be very intense
- Serves the training gap for a worldwide target group that cannot travel
- Can be very practical and applied
- Provides tools for personal feedback and individual coaching
- Ideal as first training to OH/OccMed for corporate, government and health care providers

Thank you!

Please mail questions to

nlwagner@uic.edu

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