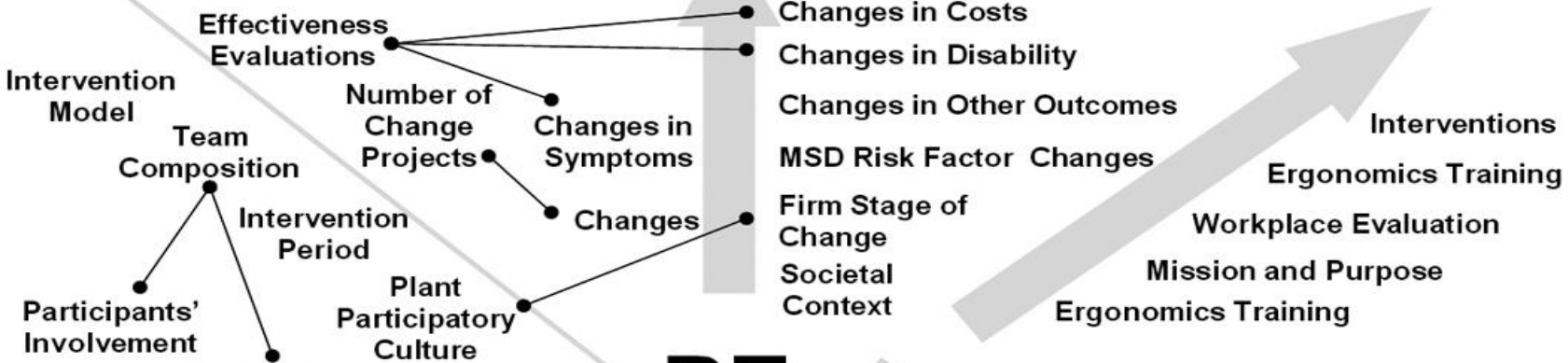


Descriptions/ Dimensions

Process

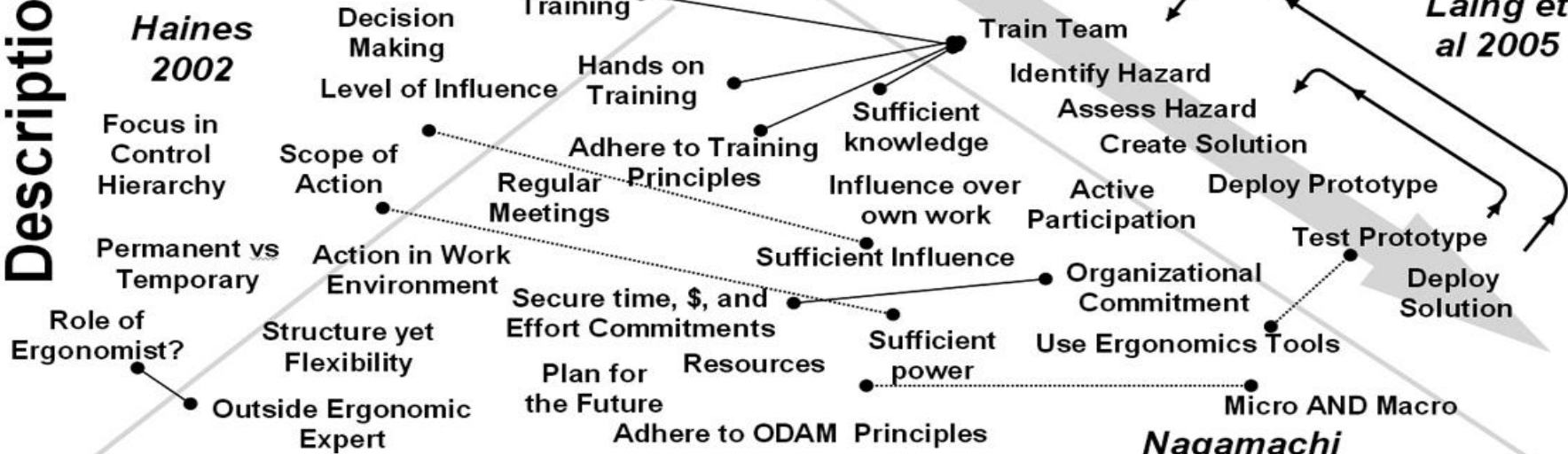
Cole et al 2004

Haines and Carayon 1998



PE

Laing et al 2005



Prerequisites

Wilson 1995

Nagamachi 1995

De Looze et al 2001

In: Cole, D., Theberge, N., Dixon*, S., Rivillis*, I., Neumann, P., Wells, R. Reflecting on a program of participatory ergonomics interventions: A multiple case study, *Work*; 34:161-178, 2009.



Contrasting participatory ergonomics program elements with standard requirements for occupational health and safety management systems

Richard Wells^{1,2} and Amin Yazdani¹

¹Department of Kinesiology, Applied Health Sciences, University of Waterloo, Waterloo, Ontario, Canada

²Centre for Research Expertise for the Prevention of Musculoskeletal Disorders (CRE-MSD), University of Waterloo, Waterloo, Ontario, Canada



Presentation at IWH 2013, Oct



Purpose

To contrast the program elements described in well-cited participatory ergonomics (PE) program literature with the requirements in occupational health and safety management system (OHSMS) standards such as OHSAS 18001.



Management Systems

Occupational Health and Safety Management System (OHSMS)

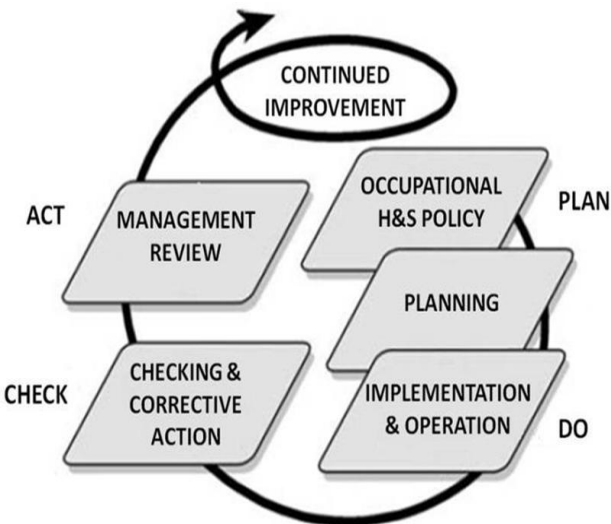


OHSAS 18001: Occupation Health and Safety Assessment Series



Management Systems

1. Quality Management System (QMS)
2. Environmental Management System (EMS)
3. Occupational Health and Safety Management System (OHSMS)



OHSAS 18001

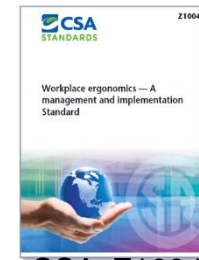
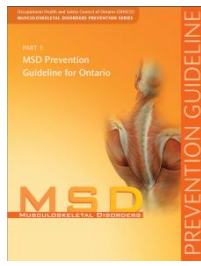


ISO 9001: QMS



ISO 14001: EMS





CSA Z1004

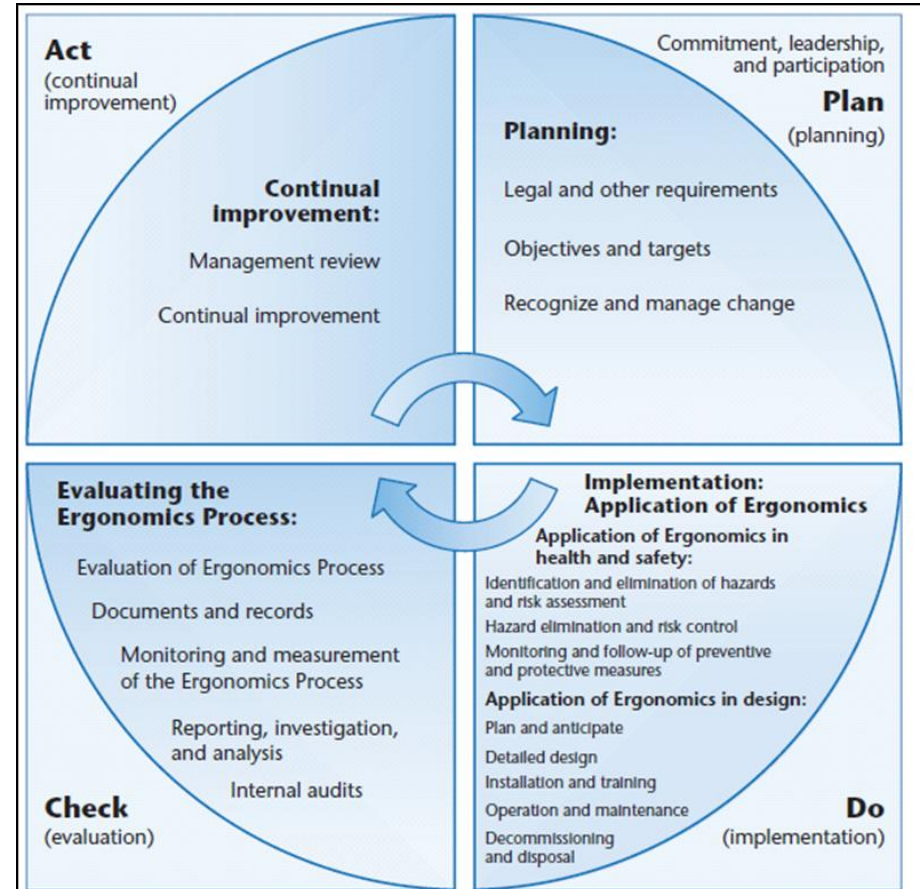
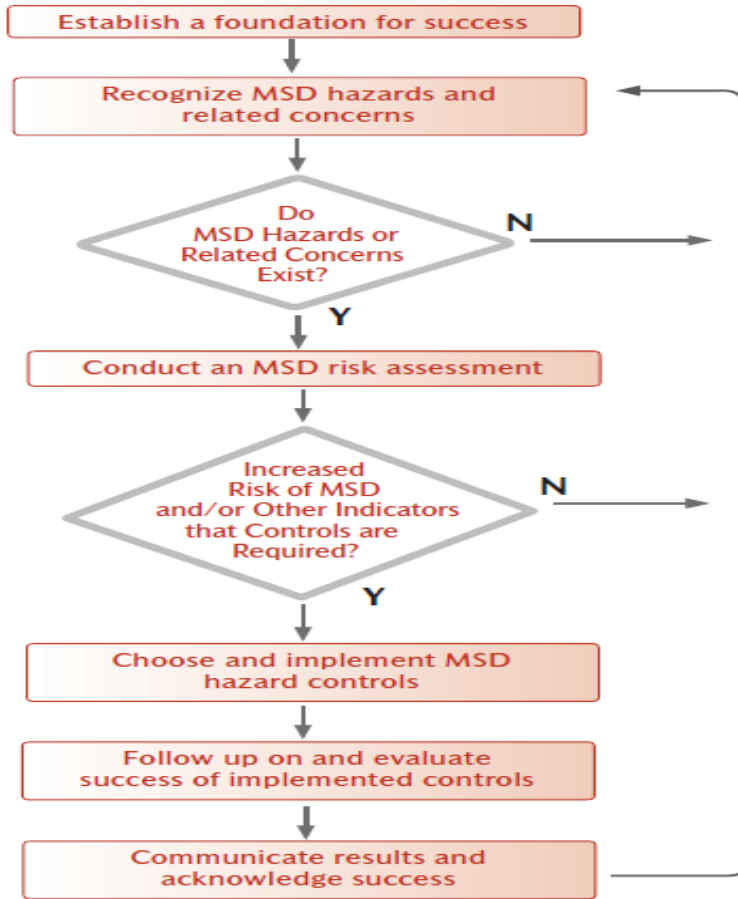


Figure 1
Elements of an OHSMS and the Ergonomics Process



OHSAS 18001

OHSAS 18001 HEALTH & SAFETY ZONE

OHSAS 18001 Occupational Health and Safety Zone

MENU

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[What It Is](#)

What is OHSAS 18001?

OHSAS 18000 is an international occupational health and safety management system specification. It comprises two parts, 18001 and 18002 and embraces a number of other publications.

What is OHSAS 18001?

OHSAS 18001 is an *Occupation Health and Safety Assessment Series* for health and safety management systems. It is intended to help an organizations to control occupational health and safety risks. It was developed in response to widespread demand for a recognized standard against which to be certified and assessed.

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5001: 1997 Guide to an occupational health
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Health & safety management systems

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RECOMMENDED SITE

[OHSAS 18001 Guide](#)

OHSAS 18001 is an *Occupation Health and Safety Assessment Series* for health and safety management systems. It is intended to help an organizations to control occupational health and safety risks. It was developed in response to widespread demand for a recognized standard against which to be certified and assessed.



Generic Elements of OHSAS 18001

- 1) Scope
- 2) Application
- 3) General Requirements
- 4) Policy
- 5) Legal and other Requirements
- 6) Hazard ID, RA, and determining controls
- 7) Objectives and Program
- 8) Resources, roles, responsibility, and accountability
- 9) Competence, training and awareness
- 10) Communication
- 11) Participation and consultation
- 12) Documentation
- 13) Control of documents
- 14) Operational control
- 15) Emergency preparedness and response
- 16) Performance measurement and monitoring
- 17) Evaluation of compliance
- 18) Incident investigation
- 19) Nonconformity, corrective action and prevention action
- 20) Control of records
- 21) Internal audit
- 22) Management review

OHSAS 18001: Occupation Health and Safety Assessment Series



Research Questions

- 1. Based upon the elements contained in OHSMS, what elements are described in the Participative Ergonomics (PE) literature?**
- 2. What are the similarities and differences between OHSMS and PE elements?**
- 3. What elements may help improve the implementation, effectiveness and sustainability of PE programs **OR** enhance OHSMS for the prevention of MSD?**



Methods

No single description of Participative Ergonomics exists, so the peer-reviewed literature was used to determine commonly accepted elements of programs aiming to prevent MSDs

- **Total citations and average citation per year were determined for 52 papers cited in a recent systematic review of PE, (van Eerd et al., 2008).**
- **Papers with a total citation of ten or more and an average citation of one or more per year were included.**
- **20 papers were selected**

Information relevant to the OHSMS themes were then extracted from the selected papers by 2 persons independently and tabulated



Results

Scope	13
Application	0
General Requirements	0
OH&S policy	0
Legal and other requirements	0
Hazard identification, risk assessment and determining control	17
Objectives and programme(s)	12
Resources, roles, responsibility, accountability and authority	17
Competence, training and awareness	13
Communication	0
Participation and consultation	10
Documentation	0
Control of documents	0
Operational Control	0
Emergency preparedness and response	0
Performance measurement and monitoring	17
Evaluation of compliance	0
Incident investigation	2
Nonconformity, corrective action and preventive action	0
Control of records	0
Internal audit	0
Management review	2



In the PE literature... 9 elements described

- 1.** for scope, PE was usually implemented at departmental or similar level;
- 2.** the majority of PE papers addressed hazard identification, risk assessment and determining controls;
- 3.** more than half of the papers indicated the objectives and program;
- 4.** most of the PE papers described the resources, roles, responsibility, accountability and authority, while the financial resources were described by a few papers as being provided by a company's leadership;
- 5.** more than half of the papers described the competence and awareness training sessions and seminars;



In the PE literature...

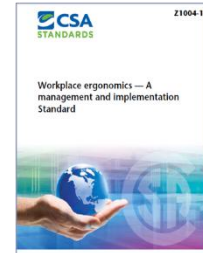
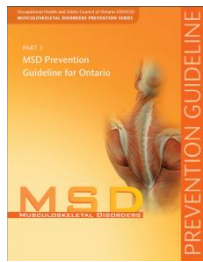
- 6.** about half of the papers provided some information about participation and the consultation element;
- 7.** the majority of papers provided information about the performance measurements and monitoring of their project/program;
- 8.** information about the application, general requirements, legal and other requirements, policy, control of documents and records, operational control and incident investigation were typically not provided;
- 9.** A small amount of information was provided about communication, management review, and documentation;



Results

Scope	13
Application	0
General Requirements	0
OH&S policy	0
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Evaluation of compliance	0
Incident investigation	2
Nonconformity, corrective action and preventive action	0
Control of records	0
Internal audit	0
Management review	2





CSA Z1004

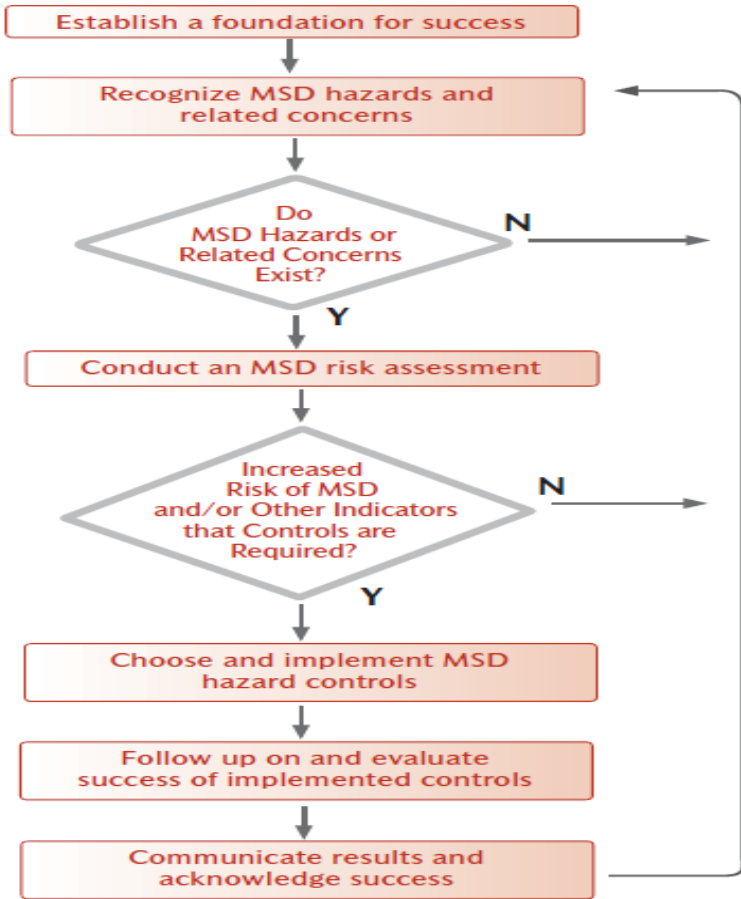


Figure 2.0: Steps in the MSD prevention framework

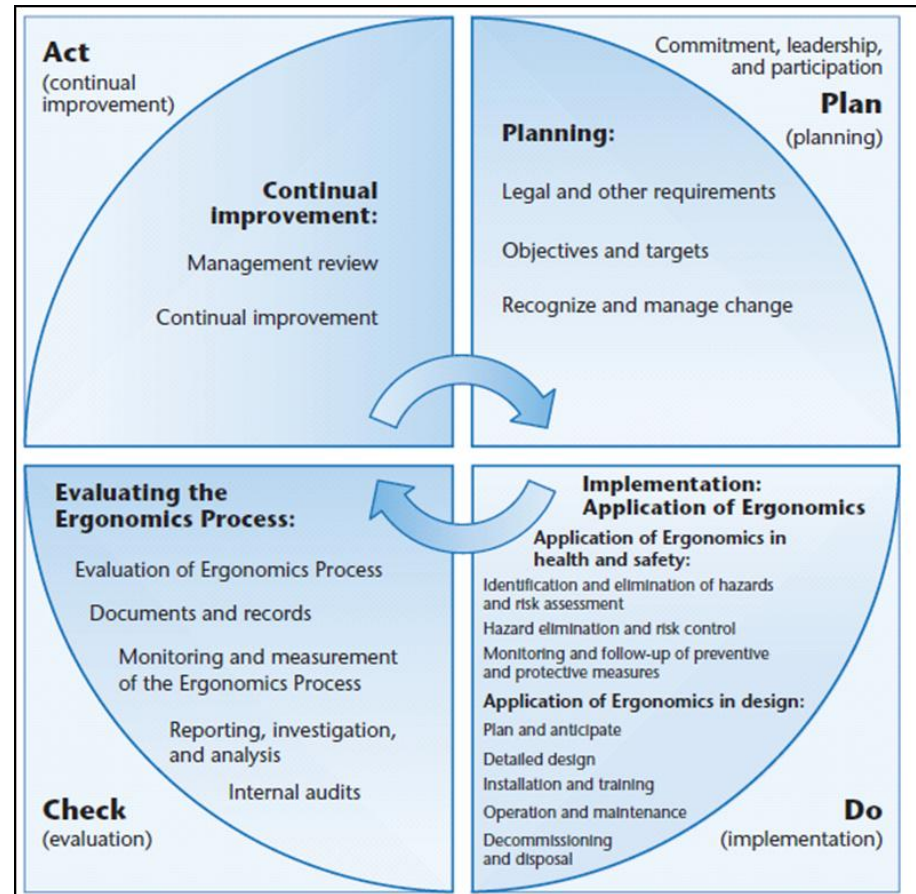
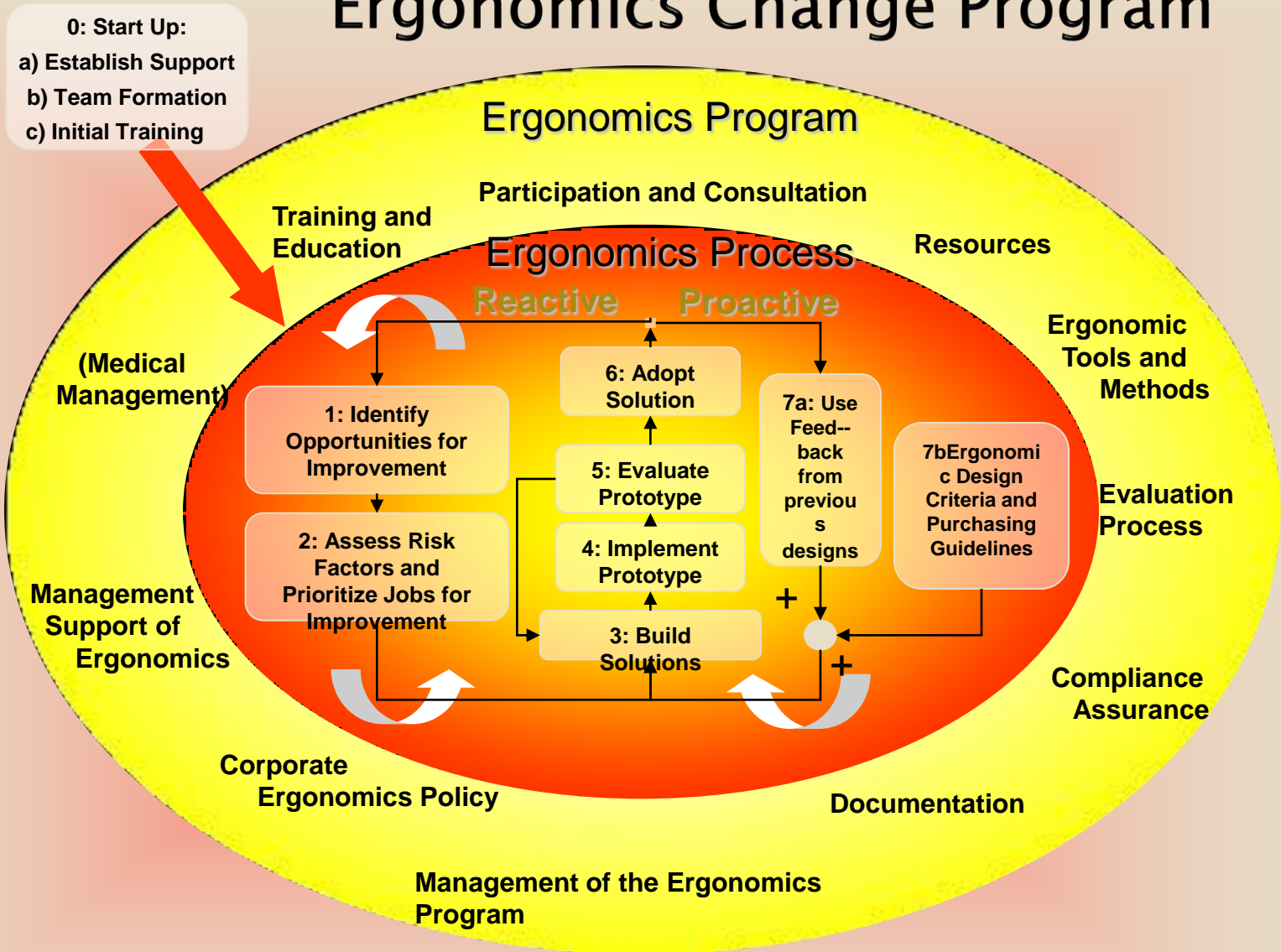


Figure 1
Elements of an OHSMS and the Ergonomics Process



Ergonomics Change Program



Ergonomics and Safety Consulting Services

www.ergonomics.uwaterloo.ca/bprint.html

PE and Management Systems

Communication General requirements

Control of documents

Internal audit

Documentation

OH&S policy

Application

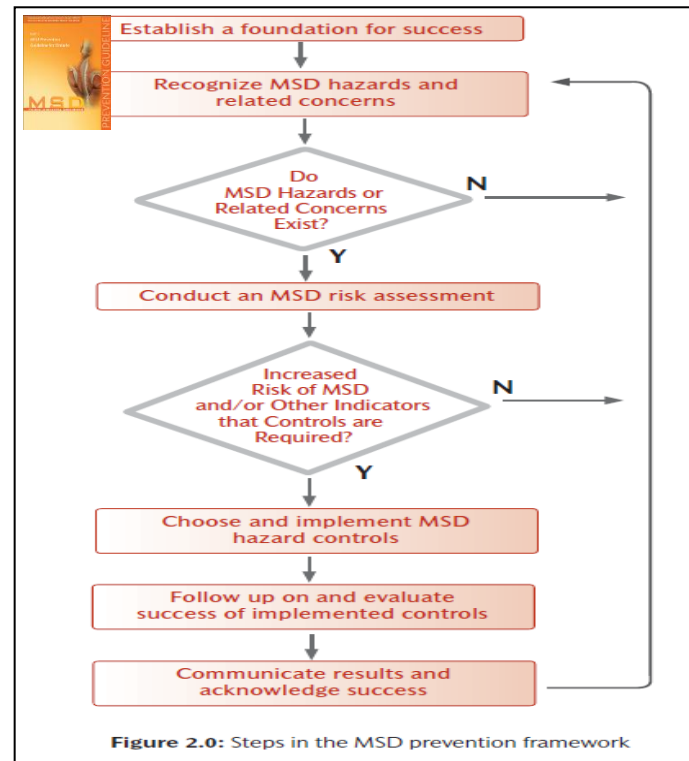
Evaluation of compliance

Nonconformity, corrective action and preventive action

Control of records

Operational control

Legal and other requirements



Discussion

- 1. PE programs were usually implemented as a “project”**
- 2. Practices seem to have been written by researchers for researchers.**
- 3. There was little detail on implementation: this makes PE difficult to implement successfully by practitioners and organizations.**
- 4. The PE approaches described did not speak to many elements in OHSMS and other management standards.**
- 5. This silence may negatively affect the effectiveness and sustainability of PE initiatives**
- 6. *Paying attention to management approaches and language could make prevention of MSD activities more effective and sustainable.***



Prevention of MSD and Ergonomics

Wells et al., (2013) found that ergonomists engaged in the prevention of MSD:

- 1. Most frequently used simple observational tools**
- 2. Only employed more in-depth risk assessment when:**
 - a. Needed to understand, often for design***
 - b. Needed to persuade decision makers***
- 3. Spend a lot of their time doing “Organizational Work”.***

*Theberge et al., (2010) Doing ‘organizational work’: Expanding the conception of professional practice in ergonomics. *Appl Ergonomics*, 42:76-84, 2010.

Wells, R., Neumann, P, Nageed, T., Theberge, N., Solution Building Versus Problem Convincing: Ergonomists Report on Conducting Workplace Assessments, *IIE Transactions on Occupational Ergonomics and Human Factors*, 1:1, 50-65, 2013.



Looking Forward

- 1. Pay attention to management approaches, processes, procedures and language**
- 2. Base MSD prevention activities (and other H&S activities) on Standards such as Z1004**
- 3. Free ergonomists to spend time on Hazard ID, Design and Controls rather than “Organizational Work”***
- 4. Use the rich resources on hazard identification, risk assessment and controls from the PE literature....**

*Theberge et al., (2010) Doing ‘organizational work’: Expanding the conception of professional practice in ergonomics. *Appl Ergonomics*, 42:76-84.



Looking Forward

5. Dig deeper into how PE interfaces with a company's management approach.

We are currently performing an interview study with key informants and undertaking case studies in multiple companies, asking questions such as:

- What is the importance and practicality of incorporating MSD prevention into an organization's formal or existing management system?
- What do you think are the barriers and challenges for successful prevention of MSDs in organizations?
- Do you think prevention of MSDs is different from prevention activities in any other OH&S issue?
- Do you see a link between psychological hazards and psychosocial factors in the prevention of MSDs?



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- Mark Pagell, Smurfit Graduate School of Business, University College Dublin, Dublin
- Nancy Theberge, Sociology and Kinesiology, uWaterloo, ON

Project Coordinator: Amin Yazdani, M.Sc.

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Workplace Methodology

Incorporating MSD Prevention into Health and Safety and Integrated Management Systems

Description

An Occupational Health and Safety Management System (OHSMS) is a framework that helps organizations reduce or prevent injuries, occupational diseases and fatalities in the workplace. It uses systematic models and techniques to identify and control health and safety hazards. While there are many (ergonomic) techniques that organizations can use to assess risk factors

Project Description
Research Project Team
Research Partners
Publications and Newsletters

http://www.cre-msd.uwaterloo.ca/Project_Description.aspx



Publications included...

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Publications included... cont

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