

EVIDENCED-BASED
APPROACH
TO PROMOTE
WORK SAFE BEHAVIOR

16 May 2013
Hong Kong Convention & Exhibition Centre

ACKNOWLEDGEMENTS

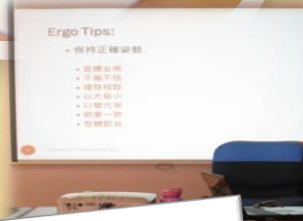
Ms Candic Tang, DOM M&G Dept., PMH

Ms Chor Hing Yip, WM M&G Dept., PMH

Mr. Siu Lun Wong, APN / OSH officer CND, PMH

Mr. Patrick So, OTI(Occup) / KWC OM, PMH

Mr. Eric So, PI (Physio) / KWC OM, PMH



...based approach to promote Work Safe Behavior Program

CONTENT

Background

- Statistics
- Limitations of the traditional measurement in safety
- Safe acts
- Impacts

Work Safe Program

- Objectives
- Schedule on WSB program
- Characteristic : Focus group / Checklist / Coaching
(Hands on practice)/ Stretching exercise

Data Collection

Evaluation

Results

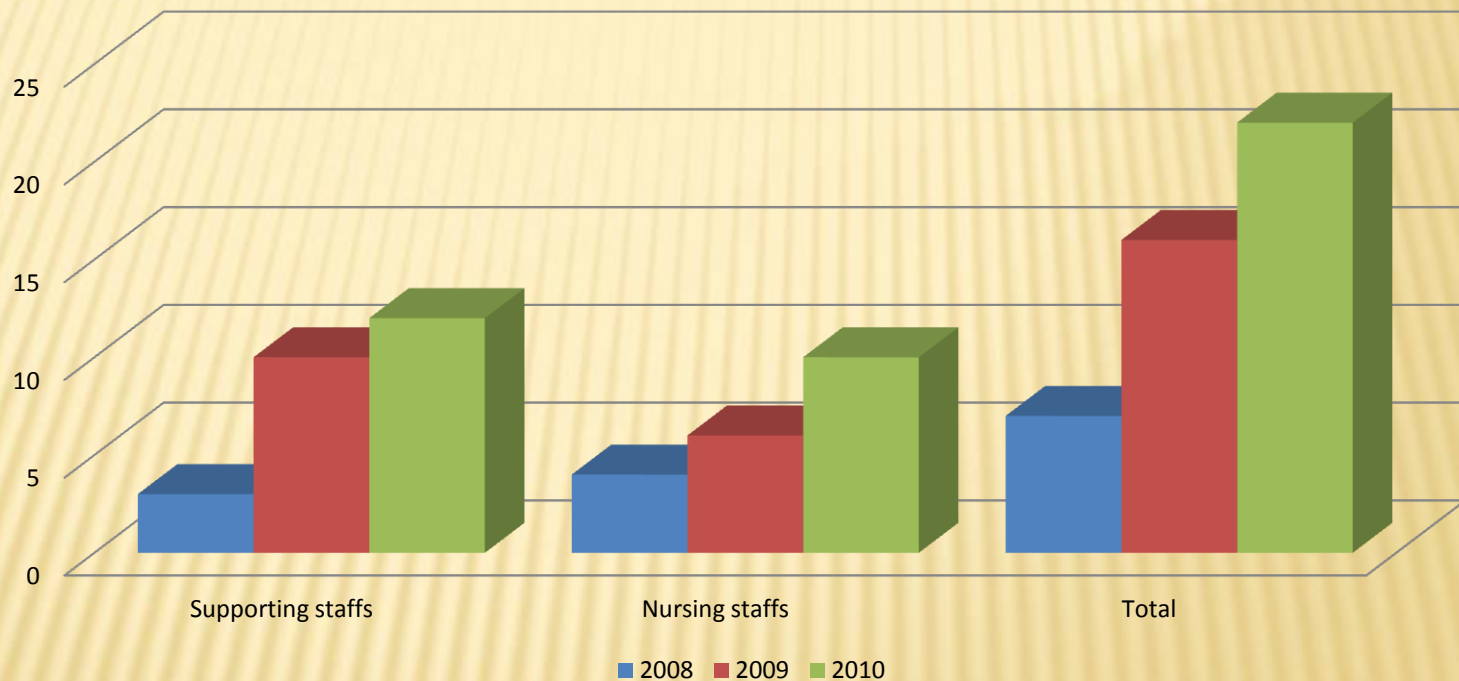
Conclusion

Recommendation

References

BACKGROUND OF THE PROGRAM

Number of IOD cases related to MHO by Rank in M&G Department, PMH from 2008 to 2010

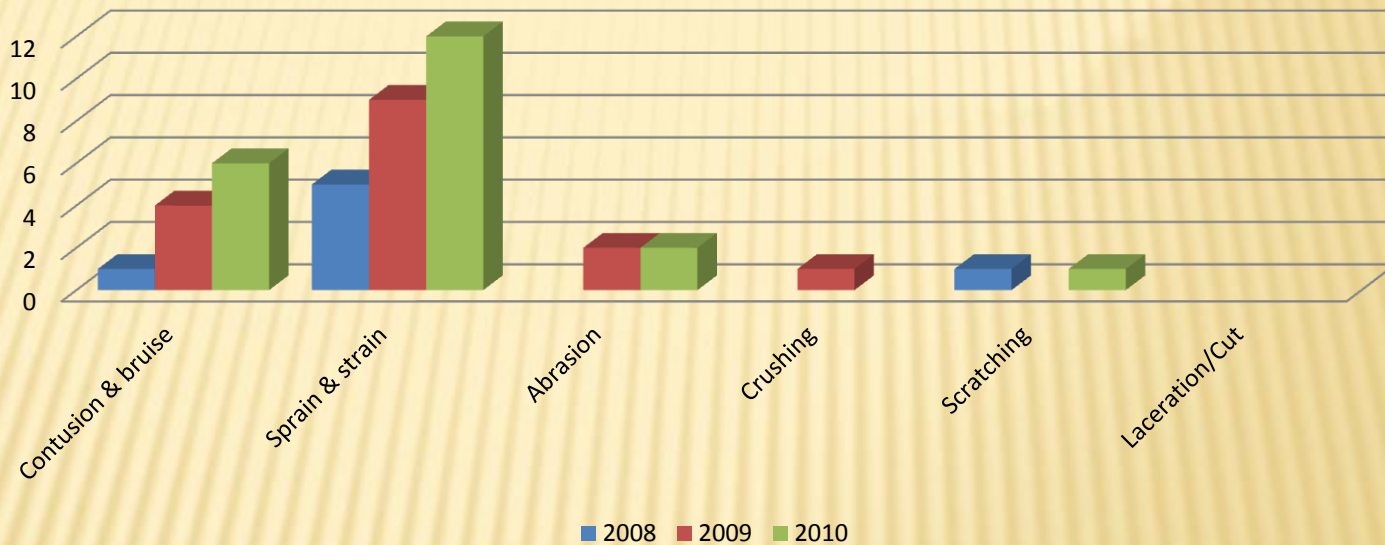


Supporting staffs are the most vulnerable persons

Evidence- based approach to promote Work Safe Behavior Program

BACKGROUND OF THE PROGRAM

Number of IOD cases related to MHO by Category in M&G Department, PMH from 2008 to 2010



Sprain & strain, Contusion & Abrasion are the most category for the nature of injury in the IOD cases

LIMITATIONS OF THE TRADITIONAL MEASUREMENT IN SAFETY

In the past, many organizations had put much effort on its own occupational safe & health in the way of understanding the ordinances, work system improvement, health promotion, safety training & ensure a safe environment. However, those works might not lower down the IOD figures effectively and efficiently.

The weakness of traditional safety measurement (ie. IOD statistic) lies on its own accuracy. The system will be destroyed if the accident hadn't reported.

On the contrary, the system of audit had been criticized for focusing on the documentation and process but neglect the workplace had achieved the safety requirement or not.

SAFE ACTS

- ◆ According to the report from the Advisory Committee on the Safety of Nuclear Installations in 1990, 20% of accident were related to the *inadequate of the equipment and facilities* while 80% of accident were associated with *poor management, unqualified staffs and violated the safety guidelines.*
- ◆ In order to diminish the accident rate, it is worth to change the unsafe act into safe act.

IMPACTS

Work-related musculoskeletal disorders are commonly found in health care setting. (Alexopoulos, Burdorf & Kalokerinou, 2006; Smith, Choe, Jeon et al., 2005; Nahit, Hunt, Lunt et al., 2003)

Various levels of disorders may affect staff's health and the ability to work. (Pransky, Benjamin, Hill-Fotouhi et al., 2002; Pransky, Benjamin, Hill-Fotouhi et al., 2000; Williams, Feuerstein, Durbin & Pezzullo, 1998)

Loss of productivity and staff shortage may in turn diminish the QOC associated with adverse patient outcomes. (Baldwin, 2004)

WORK SAFE BEHAVIOR PROGRAM

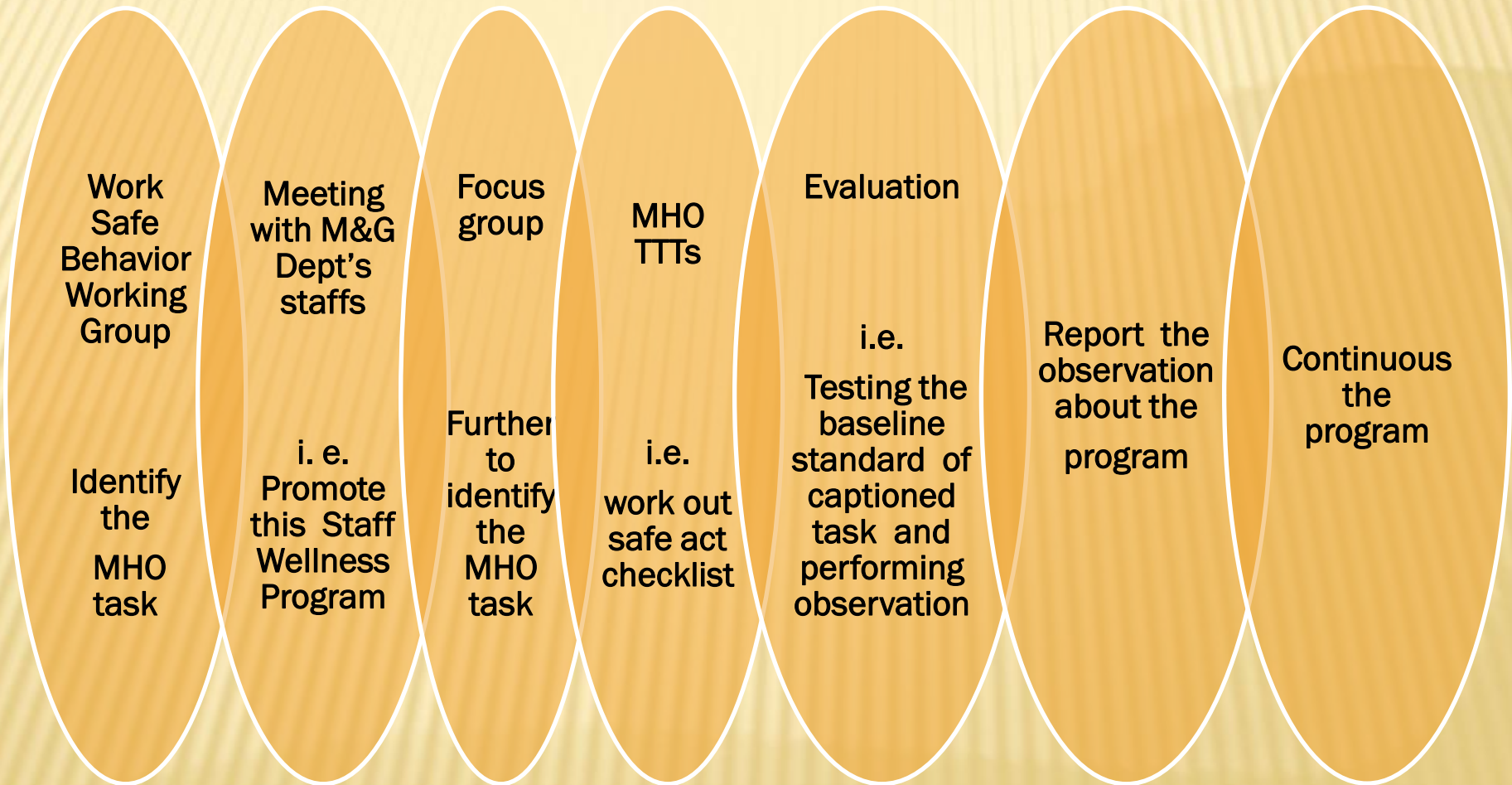
Objectives

1. To promote stretching exercise in order to improve staff's own health
2. To provide education talks on ergonomic related issue
3. To help the staffs to understand self capability and own health status in order to cope with the physical demand of daily work
4. To evaluate the job task , work process, design/usage of tools and environment that may impose MHO health risk to staffs in view of ergonomic perspective
5. To offer tailor-made ergonomic intervention program
(e.g. work posture, selection of tools, using mechanical/transfer aids properly, workplace design, etc.) to M&G Department's staffs

Target

1. Supporting staffs in M& G Department

SCHEDULE ON WORK SAFE BEHAVIOR PROGRAM



CHARACTERISTIC ABOUT THE WSB PROGRAM (1)

Focus group



Evidence-based approach

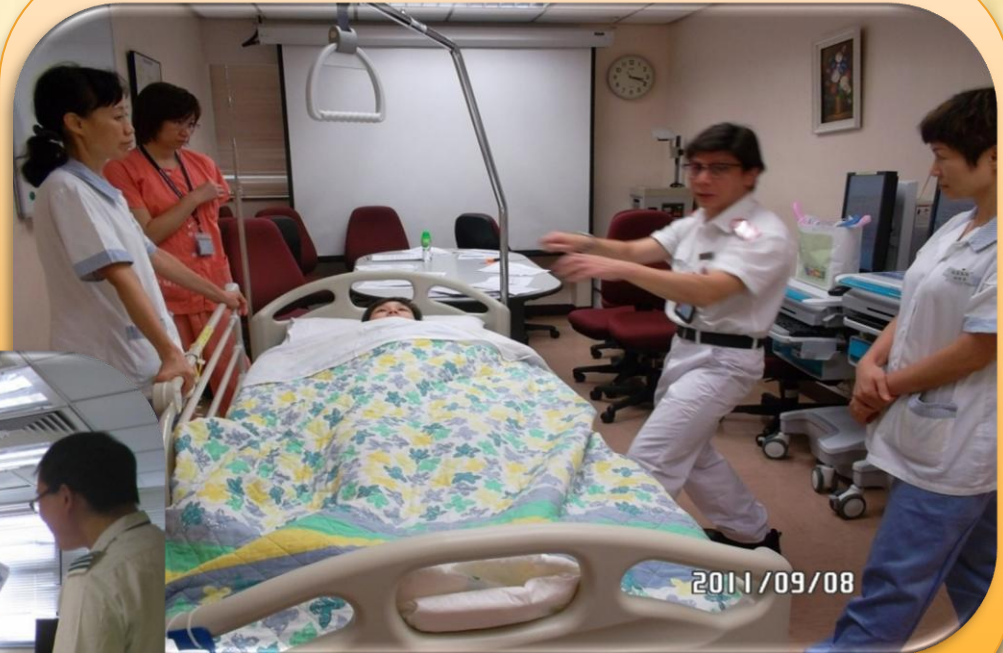
CHARACTERISTIC ABOUT THE WSB PROGRAM (2)

Checklist



CHARACTERISTIC ABOUT THE WSB PROGRAM (3)

Coaching



Evidence-based approach to promote Work Safe Behavior Program

STRETCHING EXERCISE (1)

九龍西聯網物理治療部伸展運動

進行運動時，應注意：

1. 保持自然呼吸
2. 量力而為
3. 動作緩慢進行
4. 盡量伸展肌肉有拉緊的感覺，停留在這位置十至二十秒，然後慢慢地放，每組肌肉重覆二至三次。

頸部：

1. 左望右望
2. 側頭聆聽
3. 低頭仰望
4. 下頷內收



肩膊：

1. 托肘拉肩
2. 屈肘拉臂
3. 挺胸摺臂

腰背：

1. 兩側彎腰
2. 直伸腰背

手腕：

1. 上下屈腕

大腿：

1. 坐式壓腿
2. 斜拉大腿

小腿：

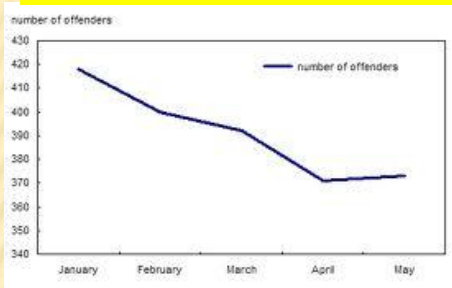
1. 弓步拉腿

STRETCHING EXERCISE (2)

Video & Practice



9. 分析結果及檢討



8. 連續進行觀察



7. 對觀察人員進行培訓



1. 計劃初期由安全主管或顧問帶領



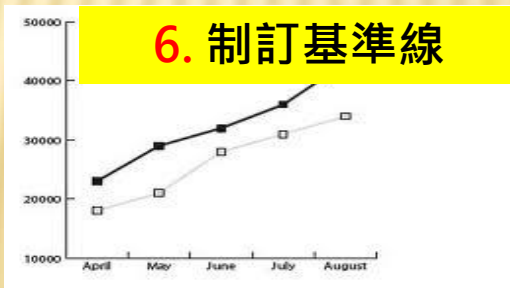
安全主管或顧問帶領

2. 由管理者、觀察員和工人的代表組成一個工作小組

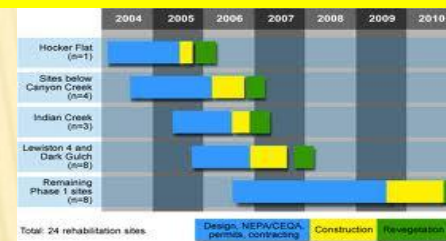


工作小組

6. 制訂基準線



3. 工作目標及時間表



4. 工作安全行為一覽表



5. 選擇觀察點



DATA COLLECTION

- Consensus to identify the MHO task by the working group of the program & MHOTTTs in focus group.
- Checklist of WSB program available which focus on *procedure for napkin round.*
- Each set of data included a quiz and a checklist about napkin round
- 3 sets of data were collected before program implemented , 2 weeks & 10 weeks after the program

DESCRIPTIVE DATA

Number of wards involved: 13

Each set of data included

- A quiz with 10 questions related to proper handling of MHO task
- Practical skill assessment on napkin round : 20 items

Total number of quiz & assessment collected

- Total number of quiz received : 306
- Total number of assessment : 375

EVALUATION

1. Analysis the quiz & practical skill.
2. Comparison IOD Rate
(Total / MHO related) among in M&G Dept/ PMH
&
HA Group 1 Hospitals.
3. Comparison Sick Leave Rate
(Total / MHO related) among in M&G Dept/ PMH
&
HA Group 1 Hospitals.
4. Satisfaction survey on the MHOTTTs &
supporting staffs.

FINDINGS (1) TESTING FOR DIFFERENCE(PAIRED T-TEST ONE TAILED)

QUIZ

Quiz	Baseline --- 2 Wks		Baseline --- 10 Wks		2 wks---10 Wks	
	P-value	N	P-value	N	P-value	N
Overall	<.0001	102	<.0001	102	<.0001	102
E1	0.178	7	0.2064	7	0.5	7
F1	0.1209	10	0.1815	10	0.7457	10
E2	0.1447	7	<.0001	7	<.0001	7
F2	0.0553	7	0.0079	7	0.0998	7
E3	0.0206	8	0.0047	8	0.0056	8
F3	0.4218	8	<.0001	8	0.0015	8
ELG1/CIC	0.0086	6	0.0005	6	0.0926	6
C3	<.0001	8	<.0001	8	0.9872	8
D3	0.0226	8	0.0128	8	0.0985	8
C6	0.0026	8	0.0019	8	0.0013	8
D6	0.005	10	0.0007	10	0.0075	10
P3-1	0.0021	15	<.0001	15	<.0001	15

FINDINGS (2) TESTING FOR DIFFERENCE(PAIRED T-TEST ONE TAILED) PRACTICAL SKILL

	Baseline — 2 Wks		Baseline — 10 Wks		2 wks—10 Wks	
Assessment	P-value	N	P-value	N	P-value	N
Overall	<.0001	125	<.0001	125	<.0001	125
E1	<.0001	10	<.0001	10	0.0068	10
F1	0.1114	10	0.0479	10	0.1717	10
E2	0.0033	10	0.0033	10	N/A	10
F2	0.0015	10	<.0001	10	<.0001	10
E3	0.0006	10	0.0001	10	0.0839	10
F3	1	10	N/A	10	<.0001	10
ELG1/CIC	<0.0001	10	<.0001	10	0.0492	10
C3	<0.0001	10	<.0001	10	0.9715	10
D3	0.0211	10	0.0006	10	0.0274	10
C6	0.0152	10	0.005	10	0.2224	10
D6	0.0011	10	0.0019	10	0.8283	10
P3-1	<0.0001	15	<.0001	15	0.0342	15

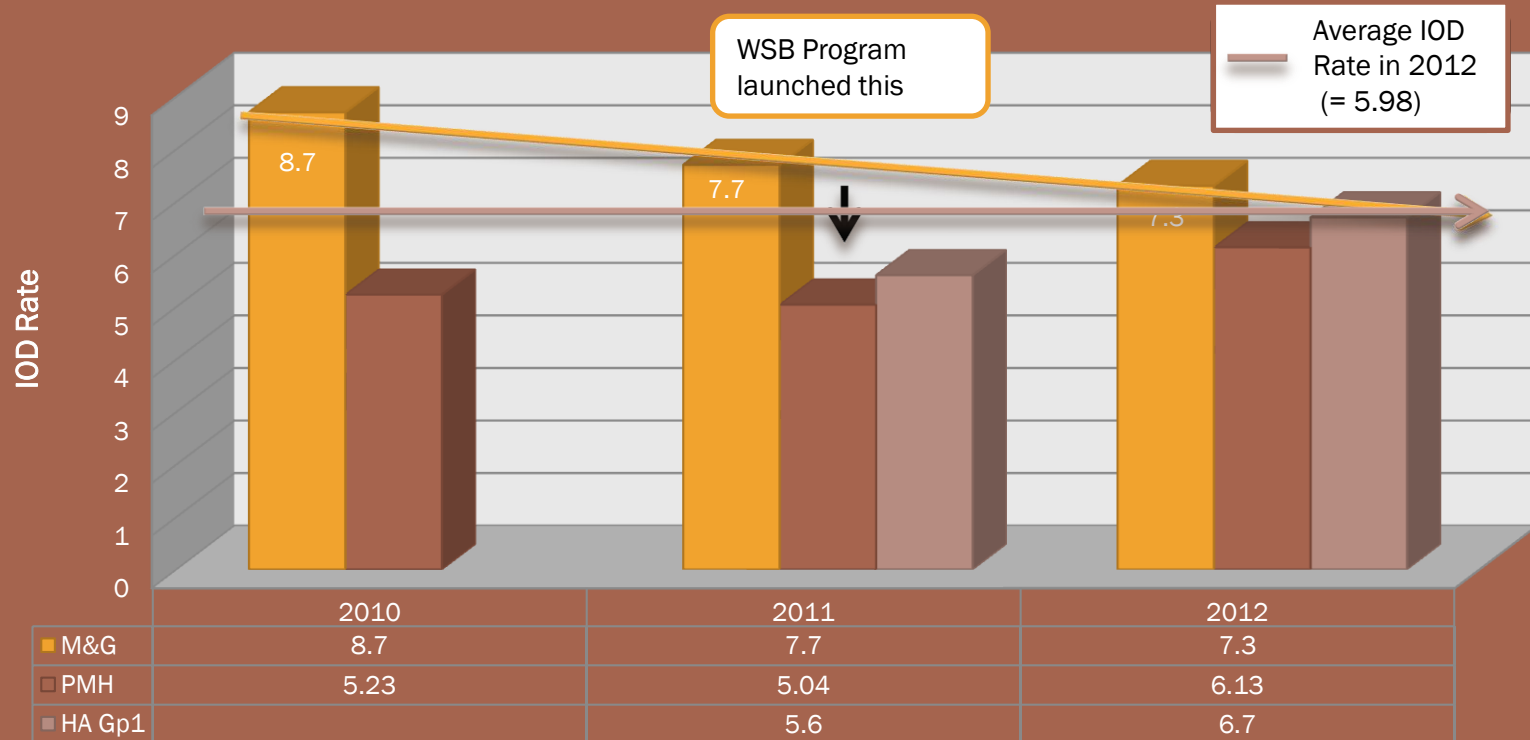
FINDINGS(3) PEARSON CORRELATION COEFFICIENT (QUIZ & ASSESSMENT)

	Baseline — 2 Wks		Baseline — 10 Wks		2 Wks—10 Wks	
	P-value	N	P-value	N	P-value	N
Overall	0.2468	102	0.04661	102	0.3258	102
E1	0.6563	7	-0.03492	7	0.75572	7
F1	0.60541	10	0.05025	10	N/A	10
E2	0.61835	7	N/A	7	N/A	7
F2	0	7	-0.76376	7	-0.06202	7
E3	0.40542	8	-0.74536	8	N/A	8
F3	N/A	8	0.51187	8	N/A	8
ELG1/CIC	-0.13776	6	-0.84174	6	0.8	6
C3	N/A	8	0.16054	8	-0.1249	8
D3	-0.18638	8	0.20754	8	0.33979	8
C6	-0.22771	8	0.59222	8	-0.53442	8
D6	-0.16751	10	N/A	10	-1	10
P3-1	0.10047	15	-0.22571	15	0.09421	15

RESULT (1)

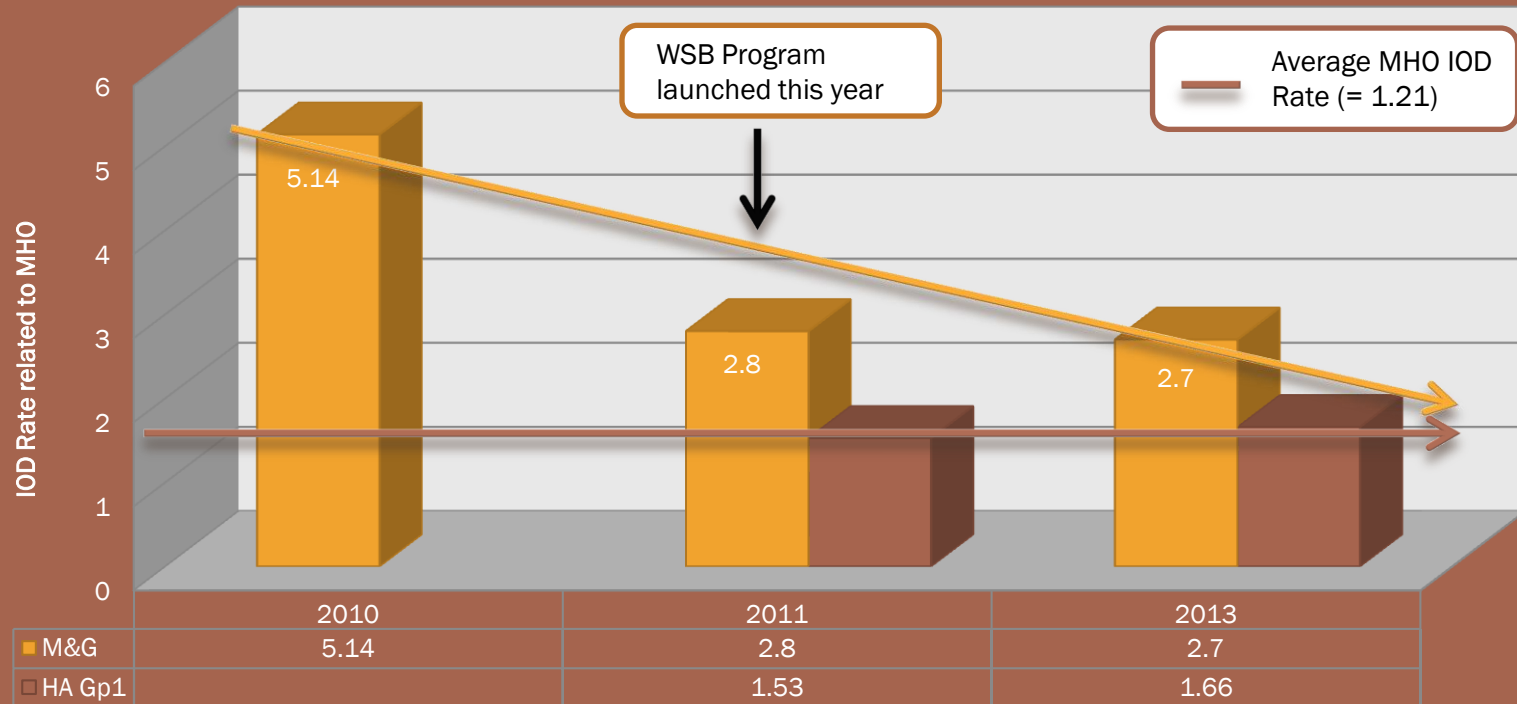
1. The finding showed an overall improvement in acquired knowledge and skill at 2 weeks & 10 weeks after the training ($P < 0.05$).
2. Pearson Correlation Coefficients (r) were used to determine the relationship between quiz & assessment but it only showed a relatively small correlation at all.

Graph 1
Total IOD Rate (Per 100 FTE) in 2010, 2011 & 2012



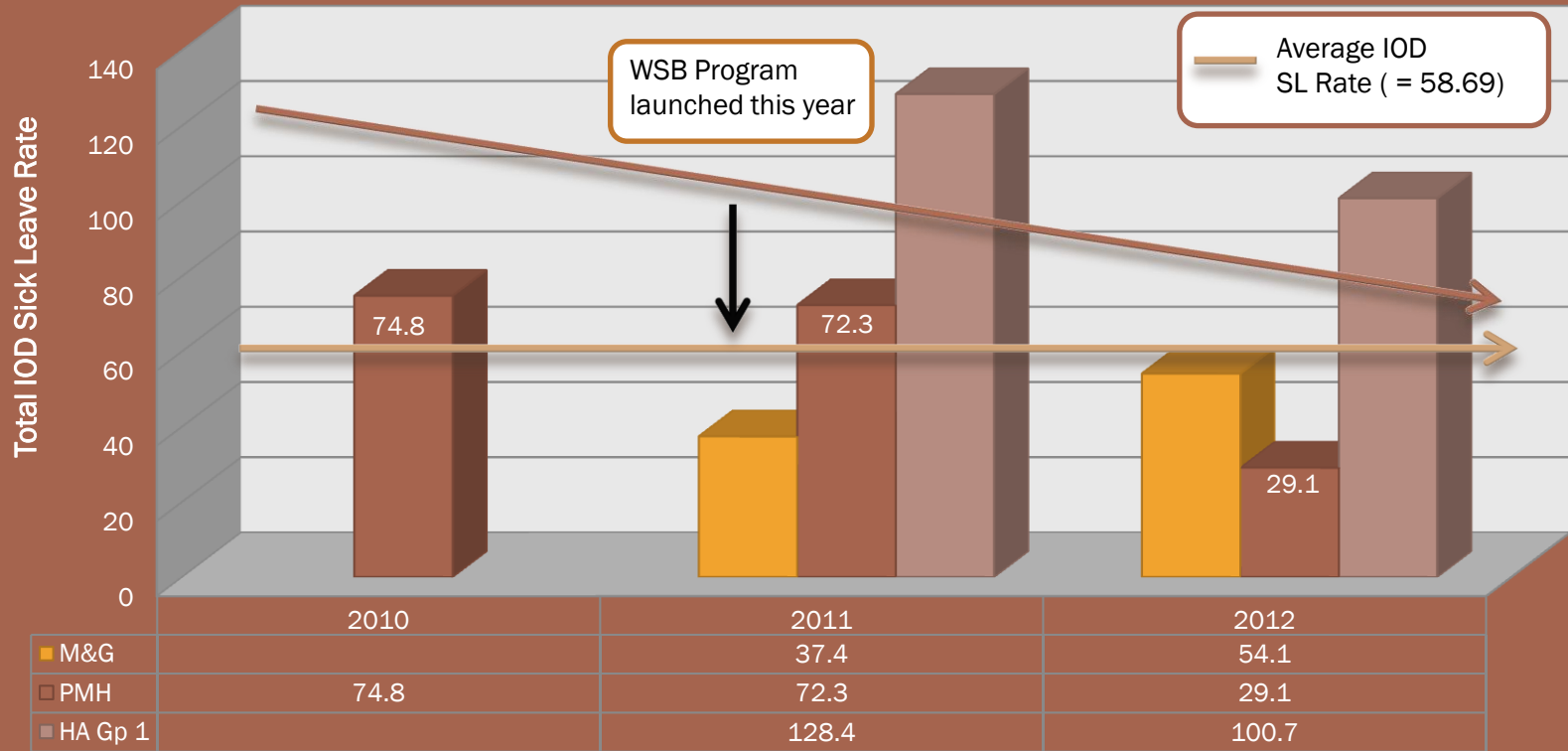
Total IOD case no increased in PMH & HA Gp 1 as compared with the declined rate in M&G Dept in 2011/2012

Graph 2
Total IOD Rate related to MHO (Per 100 FTE) in 2010,2011 & 2012



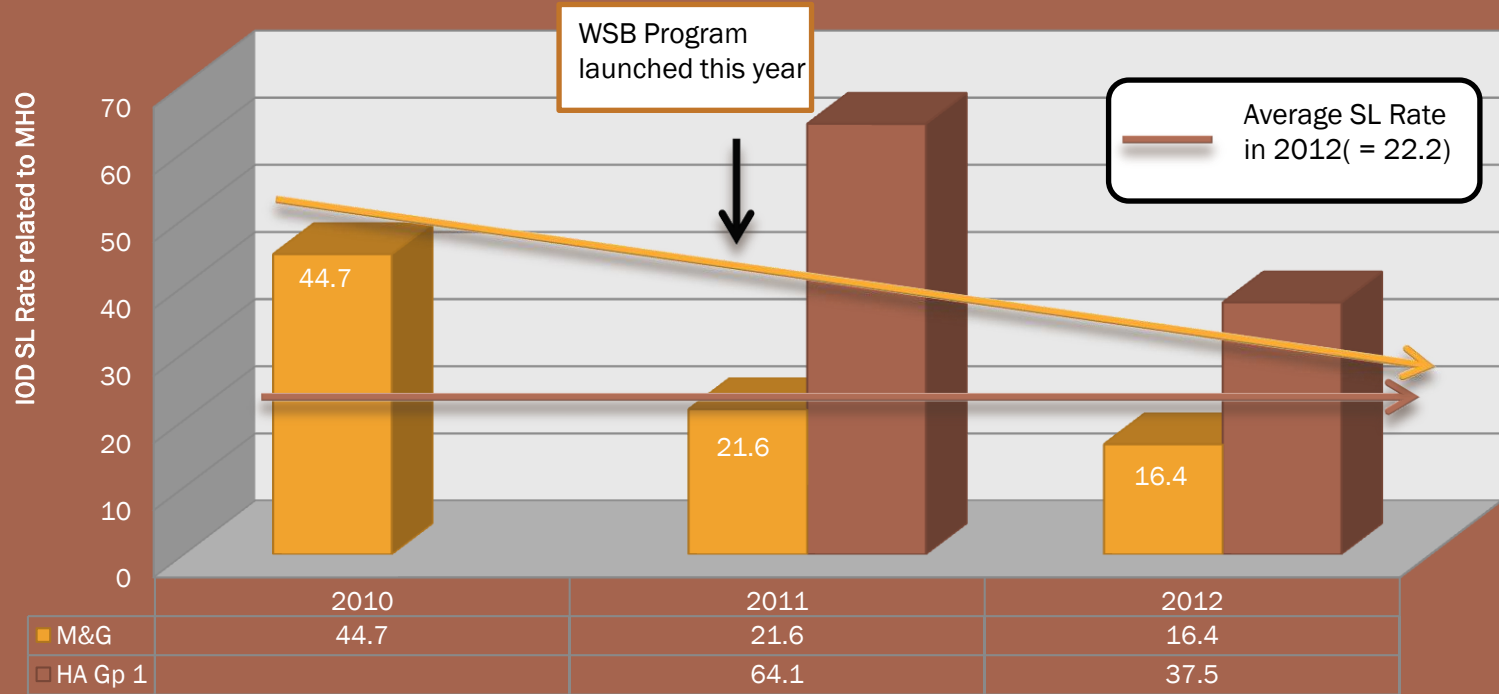
No of IOD Cases related to MHO increased in HA versus an decreasing trend in M&G Department

Graph 3
Total IOD Sick Leave Rate (Per 100 FTE) in 2010, 2011 & 2012
M&G Dept, PMH & HA Gp 1 Hospitals



The Total IOD SL Rate decreased in PMH & HA versus an increasing trend in M& G Dept

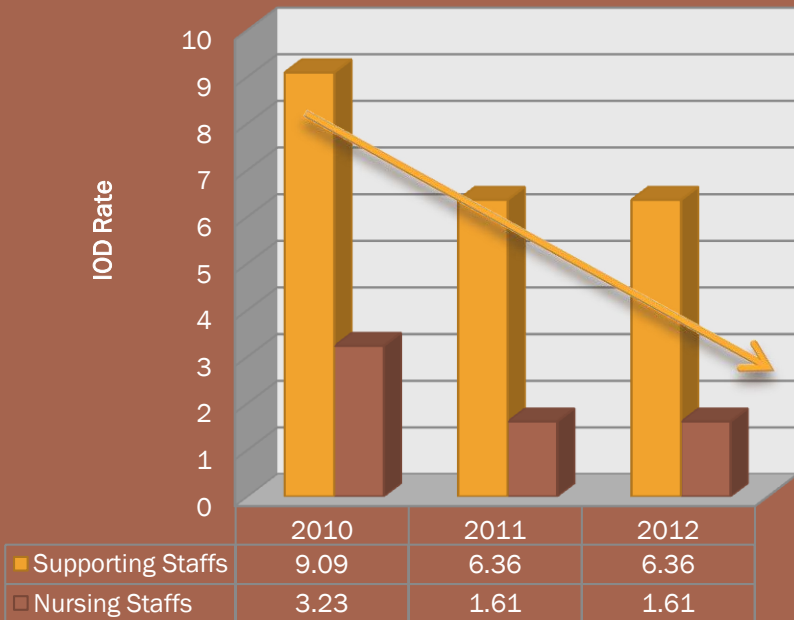
Graph 4
IOD Sick Leave Rate related to MHO (Per 100 FTE) in 2010, 2011 & 2012
M&G Dept & HA Gp 1 Hospitals



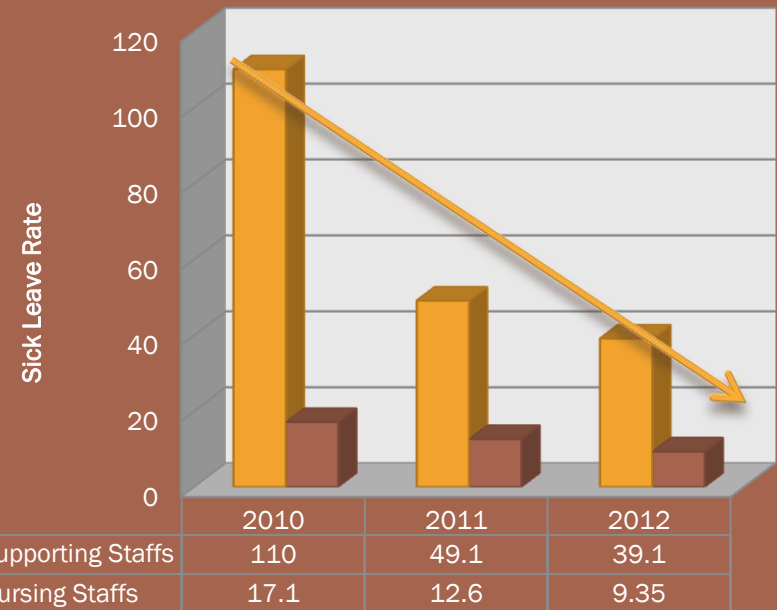
No of IOD SL Rate related to MHO were both decreased in HA & M& G Dept

RESULT (2) COMPARISON IOD & SL RATE RELATED TO MHO BY RANK IN M&G DEPT

Graph 5
IOD Rate related to MHO by Rank in M&G Dept
from 2010 to 2012



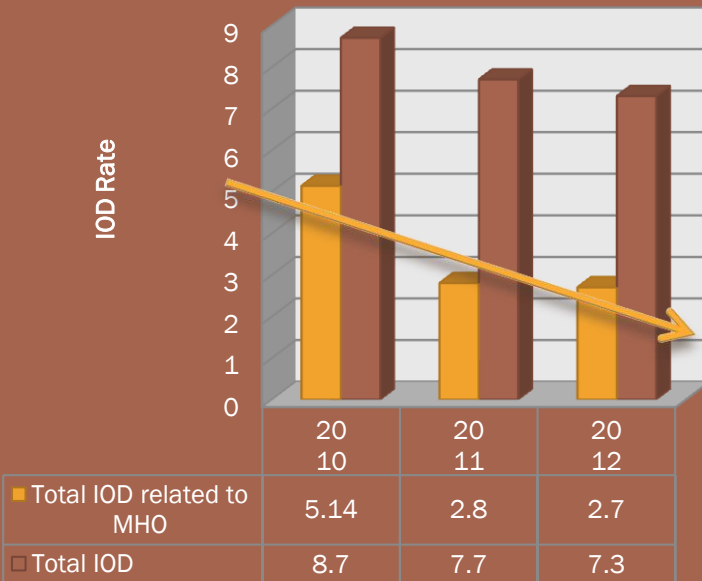
Graph 6
Sick Leave Rate related to MHO by Rank in M&G Dept
from 2010 to 2012



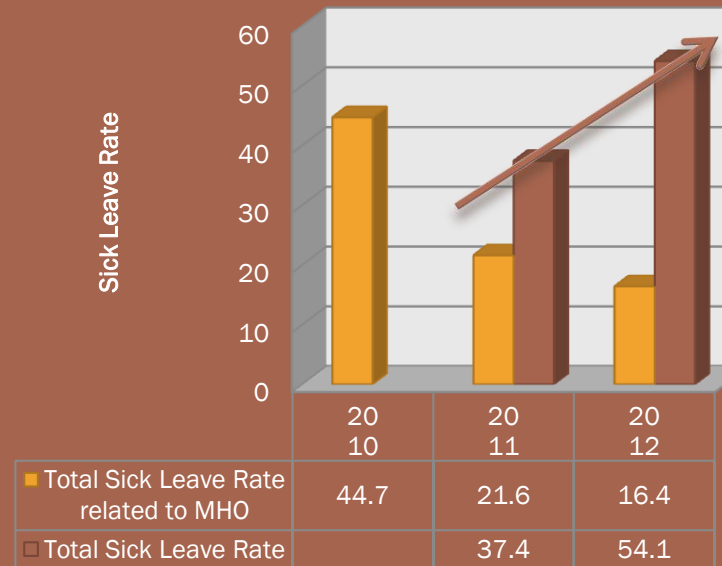
No. of IOD Rate & Sick Leave Rate related to MHO by Rank
declined with a steady trend in M&G Department

RESULT (2.1) COMPARISON IOD & SL RATE IN M&G DEPT

Graph 7
IOD Rate (Per 100 FTE) in M&G Dept
from 2010 to 2012



Graph 8
Sick Leave Rate (Per 100 FTE) in M&G Dept
from 2010 to 2012



No. of IOD Rate are both declined in total IOD related to MHO & total IOD
 Sick Leave Rate dropped in SL Rate related to MHO but increased in total IOD
 → Number of Sick Leave Rate related to non-MHO cases raised in M&G Dept

CONCLUSION (1)

1. The Work Safe Program was effective in improving staff's knowledge and skill with the promotion of safe act.
2. However, there is not much relationship between quiz and skill assessment as the overall Pearson Correlation Coefficient ranged from 0.25 to 0.33 only, reflected the higher score in quiz might not have a better performance in skill and vice versa.
3. Over 90% of MHOTTTs reflected that the program was effective.

CONCLUSION (2)

3. Over 70% of Supporting Staffs could perform MHO tasks smoothly after understanding patient's self ability.
4. Over 80% Supporting Staffs responded that the program was effective; reflected that the importance of stretching exercise was beneficial to them; less strength used comparatively after handling transferring aids properly; understood that concept of work safe was important & being confident in performing MHO task than before.

RECOMMENDATIONS

1. Review IOD cases related to MHO in PMH for generating a complete picture for comparison purpose.
2. Explore the high sick leave rate related to non-MHO case in M&G Dept.
3. Further refine the WSB program in the aspect of the ergonomic issue by studying the part of body involved / nature of the injury during the IOD case study.

REFERENCES

- Alexopoulos,E.C.,Burdorf,A.,& Kalokerinou,A. (2006). A comparative analysis on musculoskeletal disorders between greek and dutch nursing personnel. *International Archives of Occupational and Environmental Health*, 79(1),82-88.
- Balswin,M.L.(2004). Reducing the costs of work-related musculoskeletal disorders:t argeting strategies to chronic disability cases. *Journal of Electromyography and Kinesiology*, 14(1),33-41.
- Nahit,E.S., Hunt,I.M., Lunt,M., Dunn, G., Silman, A.J., & Macfarlane, G.J. (2003). Effects of psychosocial and individual psychological factors on the onset of musculoskeletal pain: common and site-specific effects. *Annals of the Rheumatic Diseases*,62(8), 755-760.
- Pransky, G., Benjamin, K., Hill-Fotouhi, C., Fletcher, K.E., Himmelstein,J., & Katz,J.N.(2002). Work-related outcomes in occupational low back pain: a multidimensional analysis. *Spine*, 27(8),864-870.
- Pransky, G., Benjamin, K., Hill-Fotouhi, C., Himmelstein, J., Fletcher, K.E., Katz, J.N., et al.(2000). Outcomes in work-related upper extremity and low back injuries:results of a retrospective study. *American Journal of Industrial Medicine*, 37(4),400-409.
- Smith,D.R., Choe,M.A., Jeon, M.Y., Chae,Y.R., An, G.J., & Jeong, J.S. (2005). Epidemiology of musculoskeletal symptoms among Korean hospital nurses. *International journal of occupational safety and ergonomics*, 11(4),431-440.
- Williams, D.A., Feuerstein, M., Durbin, D., & Pezzullo, J. (1998). Health care and indemnity costs across the natural history of disability in occupational low back pain. *Spine*, 23(21),2329-2336.

Q & A

The End

MEMORIES

