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Collaboration for Sustainable Health in Future of Work

Epidemiology of WRMSD in an acute hospital

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Singapore General Hospital

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Disclaimer

- Neither ergonomics expert nor occupational health professional
- Role of WSH is to assist the experts and facilitate WRMSD program with institution-wide data gathering and analysis, facilitate action items, review and reporting to the relevant platforms.

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WRMSD in an acute hospital

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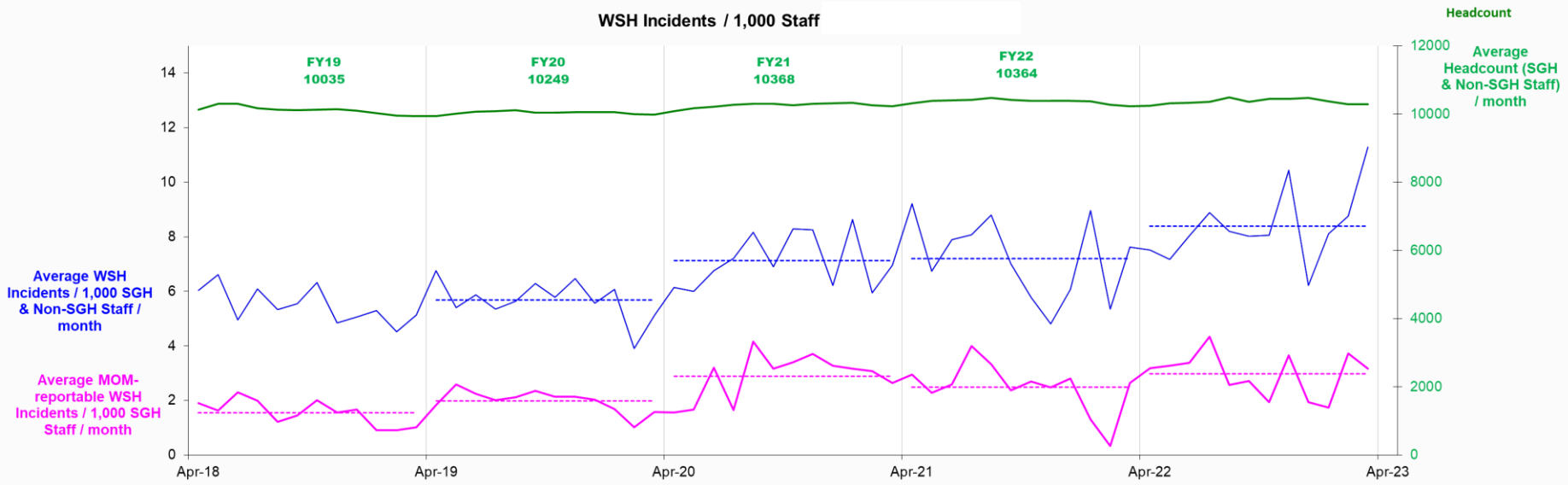
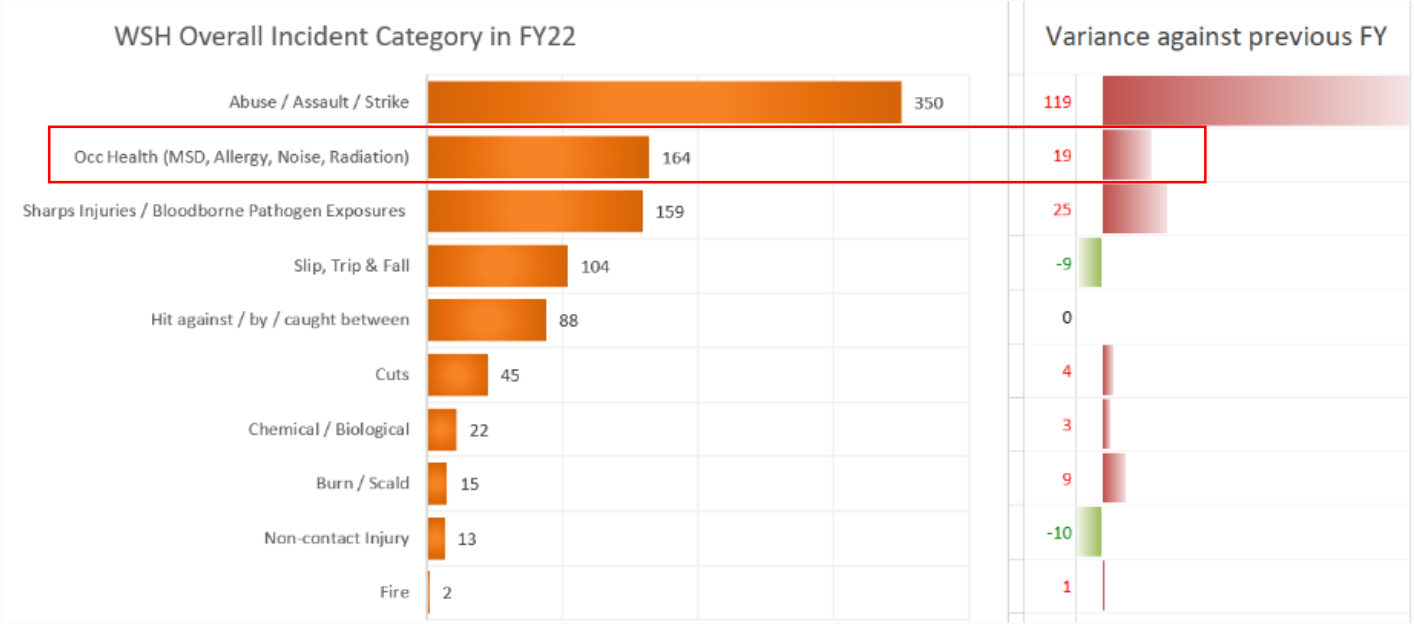


Overview of all reported WSH incidents, regardless of severity, for all persons working in an acute hospital, including non-staff but excluding contractors and retailers



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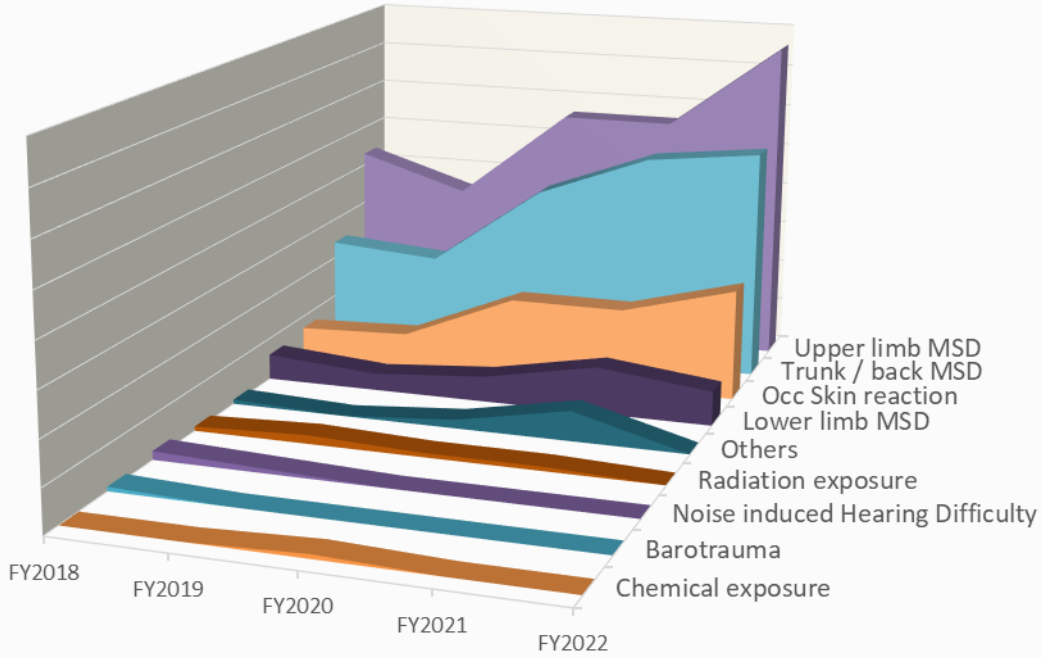
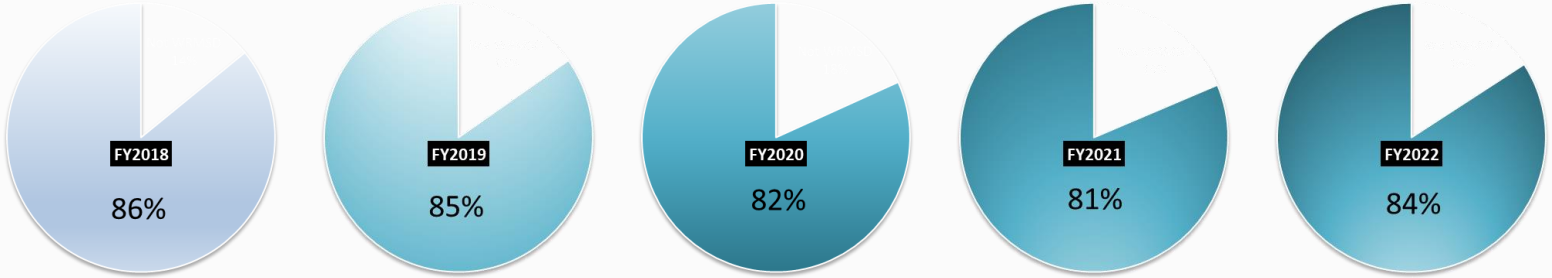
Let's look at the Occ Health Disorders





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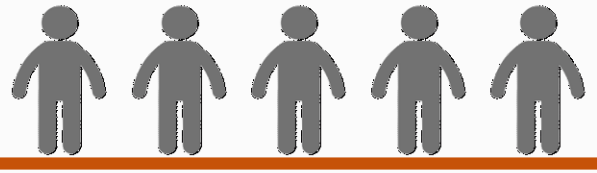
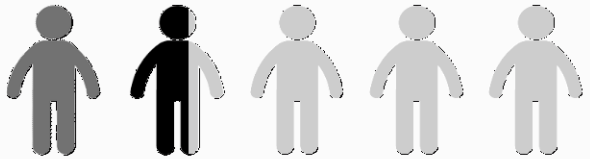
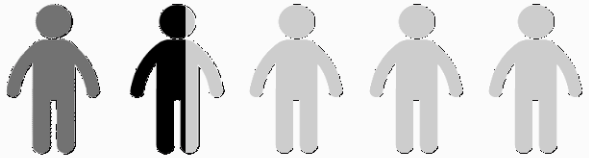
Who is affected?

High Risk Staff Groups		Patient Care Work
NURSE	51% 	Hygiene needs, wound care, medication administration, general and specialized assistance to clinical team.
ALLIED HEALTH	18% 	Complements care of patients provided by clinical team through Pharmacy, physiotherapy, occupational therapy, speech therapy, dietetics, psychology, radiology
PATIENT CARE SUPPORT	17% 	Hygiene needs, general patient care assistance to nursing team.

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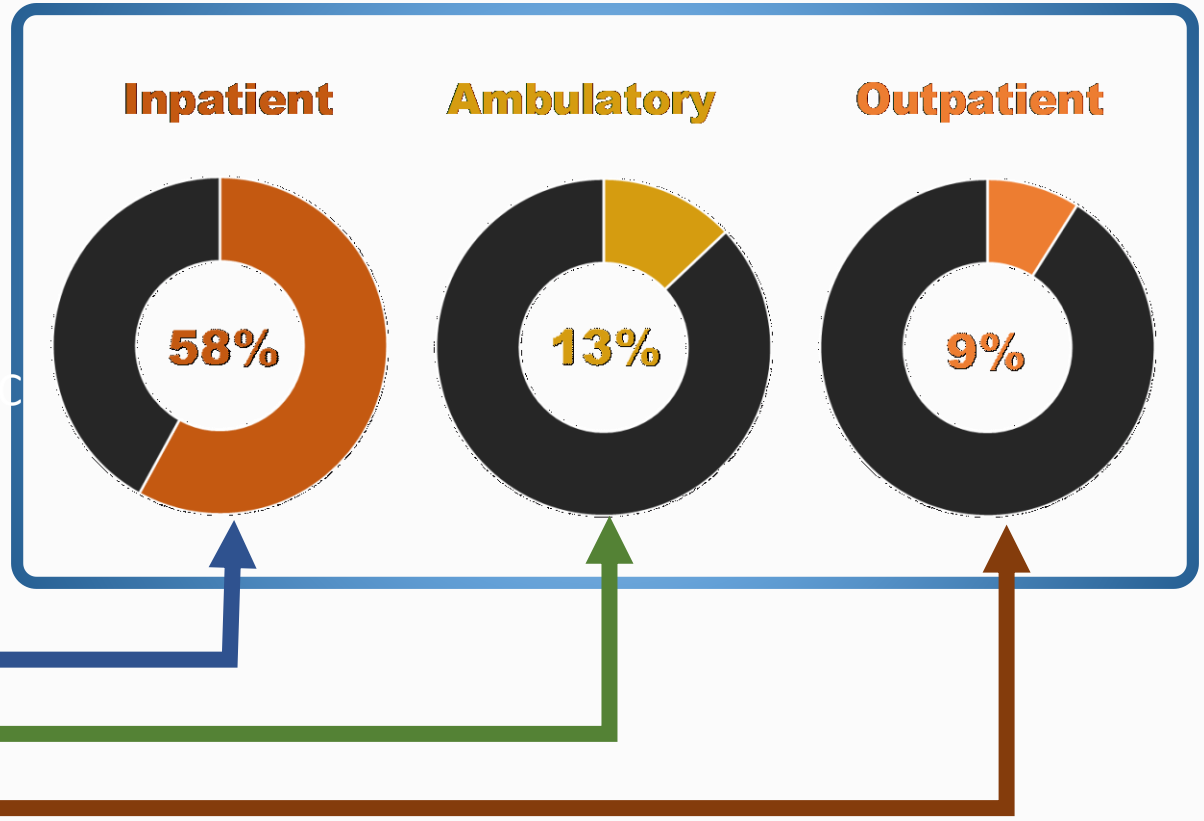
Where do they work?

Patient Care Areas

Where patients receive care while being admitted to the hospital – Wards, ICU, Operating theatres

Where patients receive diagnostic / therapeutic care – imaging (radiology, nuclear med, vascular), endoscopy,

Where patients receive consultations / therapeutic care while not being admitted to the hospital – rehab, outpatient clinics,



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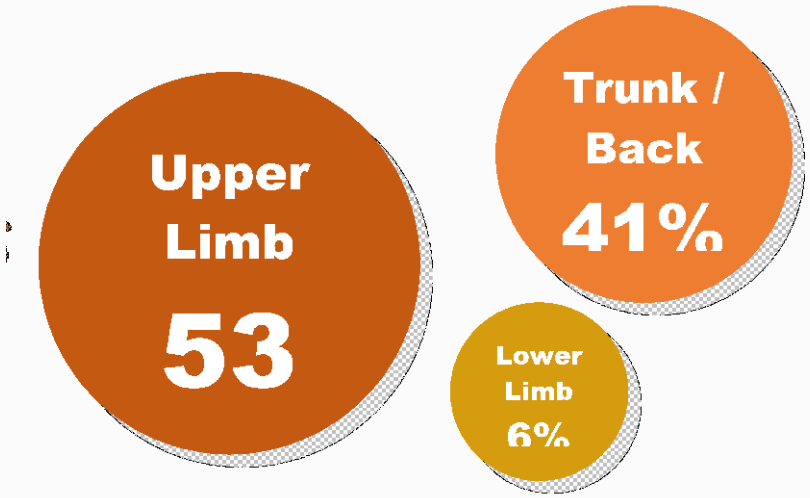
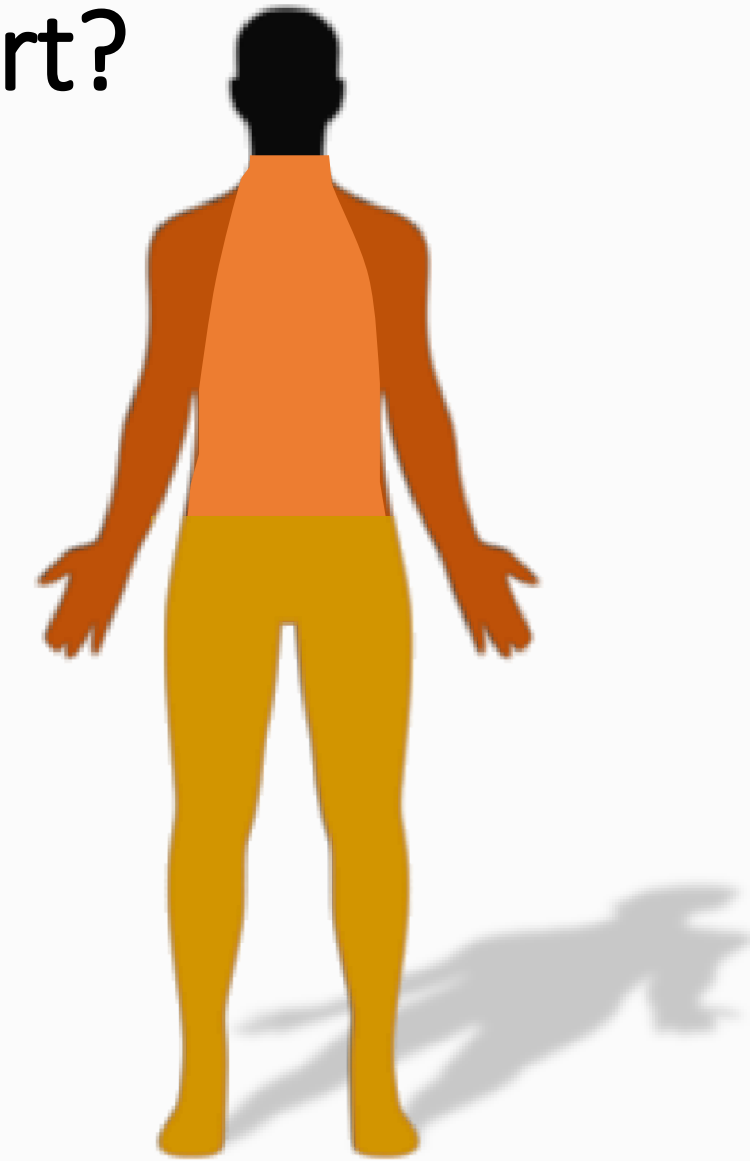
Where does it hurt?

Most Affected Body Sites





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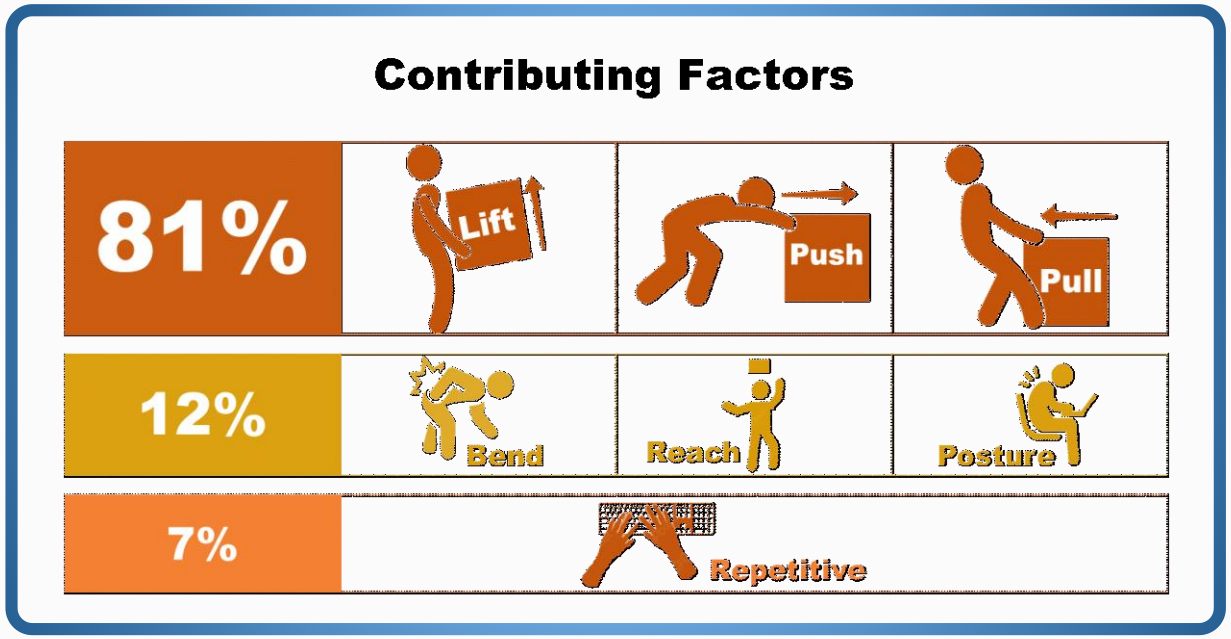
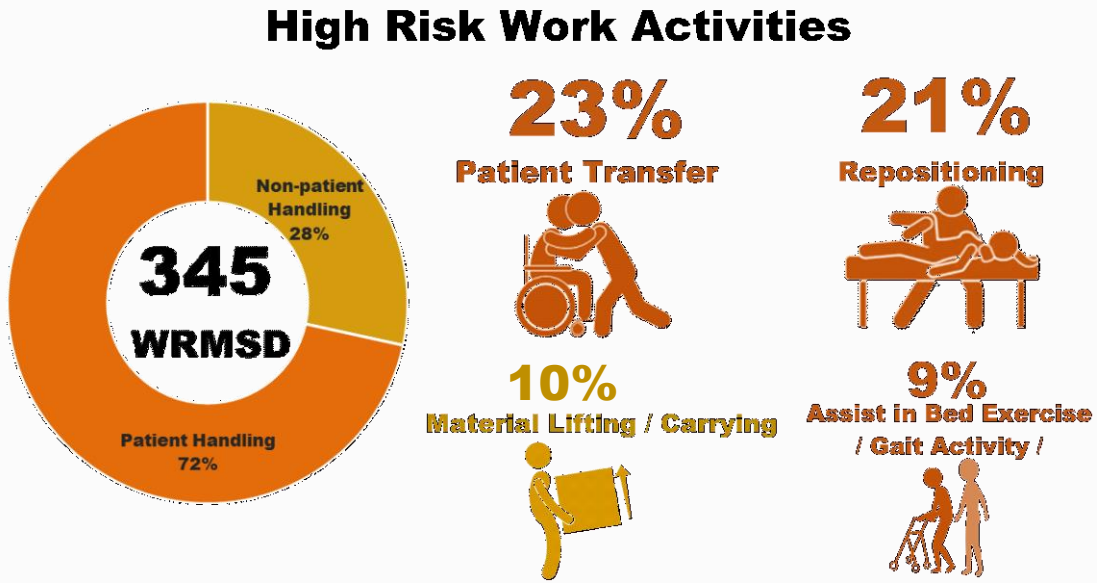
How did it happen?





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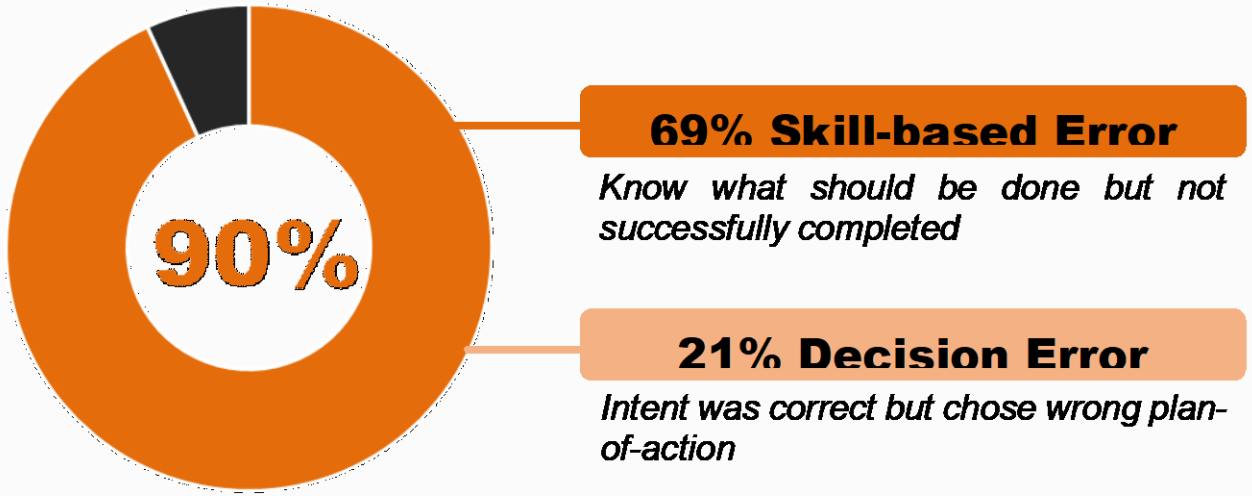
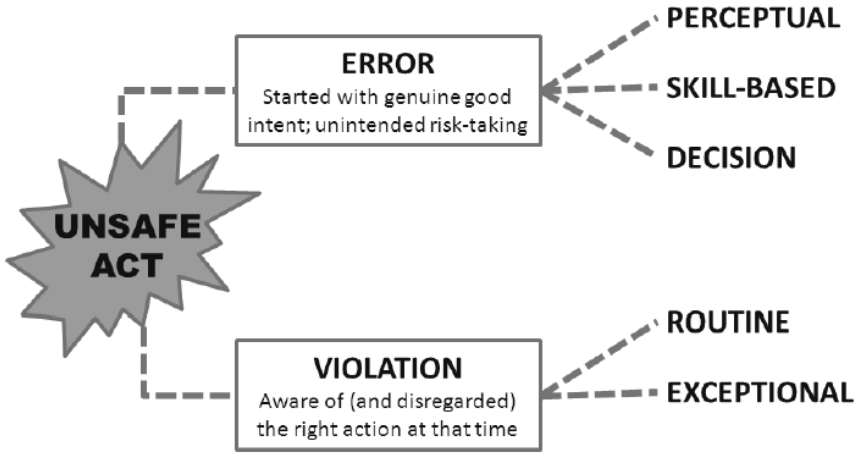
Why did it happen?

Most Probable Root Causes

90% of the WRMSD incidents were due to human error



Human factors categorization of WSH incidents



Perceptual Error	Know what to do but perceived wrongly
Skill-based Error	Know what should be done but not successfully completed
Decision Error	Intent was correct but chose wrong plan-of-action
Routine Violation	Intent is usually good; Aware of correct plan *Routinely* violated as perceived benefits > perceived risks
Exceptional Violation	Intent may be right or wrong; Aware of correct plan Unique to individual or *exceptional* situation

Classifying errors appropriately helps to guide **effective resolutions**. For example:
Similar-looking drugs (perceptual)
× Train to differentiate (decision)
✓ Change drug packaging (perceptual)

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Case study 1

On 10 March 2022 PM shift and 11 March 2022 AM shift, SSN was the junior nurse for 20 patients on each shift at Ward XX. I was involved in the care of the patients' basic needs and performed care such as diaper changing, changing of bedsheets, parameters taking, blood capillary glucose monitoring and feeding of patients. I felt pain in my right thumb on Thursday and it persisted till today 15 March 2022, despite rest over the weekend on 12-13 March 2022. I went to the staff clinic on 15 March 2022 and was given 3 days Sick Leave from 16 to 18 March 2022.

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Case study 1

Nursing *Inpatient*

On 10 March 2022 PM shift and 11 March 2022 AM shift, SSN was the junior nurse for 20 patients on each shift at Ward

Skill-based error *Positioning / repositioning*

XX. I was involved in the care of the patients' basic needs and performed care such as diaper changing, changing of

Push / pull / bend / reach *Upper limb MSD*

bedsheets, parameters taking, blood capillary glucose monitoring and feeding of patients. I felt pain in my right thumb on

Thursday and it persisted till today 15 March 2022, despite rest over the weekend on 12-13 March 2022. I went to the staff

Delayed reporting *Man-days lost*

clinic on 15 March 2022 and was given 3 days Sick Leave from 16 to 18 March 2022.

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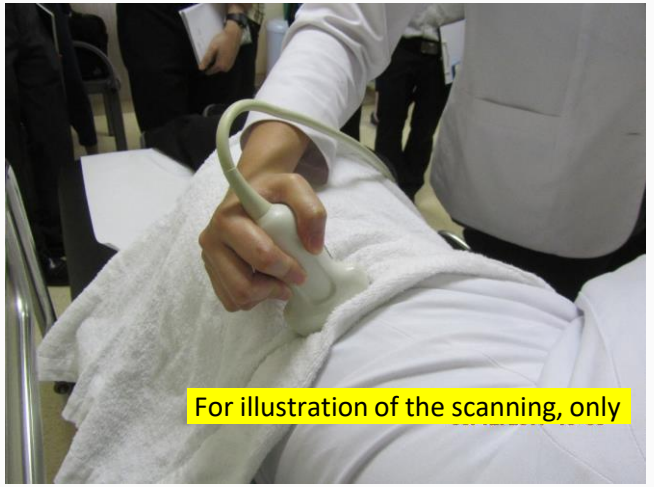
Case study 2



The ultrasound scan was performed for elderly patient slight weakness on shoulder flexion with stiffness at Inpatient Imaging Centre, on 10th May. The patient could sit up on the bed for the scan with support from the nurse.

When Radiographer had to assess the infraspinatus tendon, supraspinatus and infraspinatus muscle. She had to approach the patient from the back due to the patient's condition.

Scanning from the back, Radiographer had to support patient at the same time as she was leaning towards Radiographer. Due to the space constraint, Radiographer was unable to re-position the machine to face her. As such, the console and body of the machine was facing away from her with only the monitor turned towards her. Radiographer was scanning with her right hand and supporting the patient with her left. To capture the images for the scan, she had to extend and cross her left hand over to reach for the console. The scan took 1 hour.

Radiographer experienced discomfort on her left shoulder soon after the scan. The pain in her left shoulder persisted over the next day. Her range of movement was affected and there was pain lifting her hand and bending her elbow to lift things.

She visited the staff clinic for left shoulder pain on 12th May. She had difficulty raising her hands and placing them behind her head during the assessment. Total accumulated sick leave was 15 working days with 21 working days of light duty.

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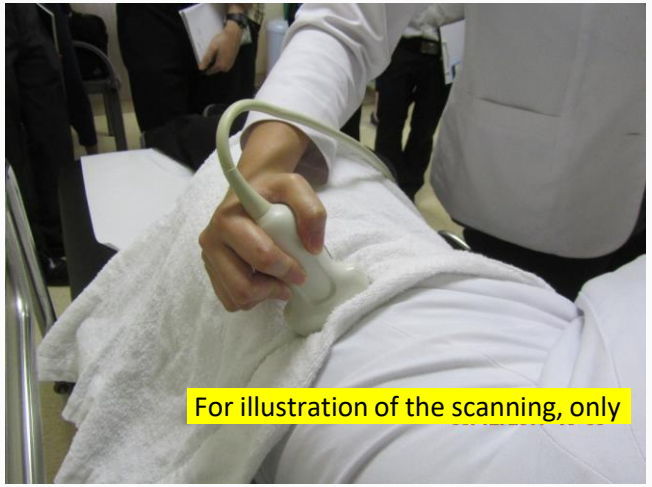
Case study 2



The ultrasound scan was pe[Ambulatory]or elderly patient slight weakness on shoulder flexion with stiffness at Inpatient Imaging Centre, on 10th May. The patient could sit up on the bed for t[Allied Health professional]h support from the nurse.

When Radiographer had to assess the [Decision error]s tendon, supraspinatus and infraspinatus muscle. She had to approach the patient from the back due to the patient's condition.

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[Upper limb MSD] [Delayed reporting]

She visited the staff clinic for left shoulder pain on 12th May. She [Man-days lost]lty raising her hands and placing them behind her head during the assessment. Total accumulated sick leave was 15 working days with 21 working days of light duty.

Intervention programs

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Right site, right procedure

Strategy to review and design interventions

- Data review on root causes of WRMSD incidents – infrastructure, equipment, competency
- Conducting staff survey
- Review communications and training material available

Sensing

- Use data to target interventions to staff groups / activities
- Close gaps identified in survey
- Develop material where needed

Planning and execution

- Setting measurable targets
- Reporting to WSH Network and stakeholders

Indicators of progress

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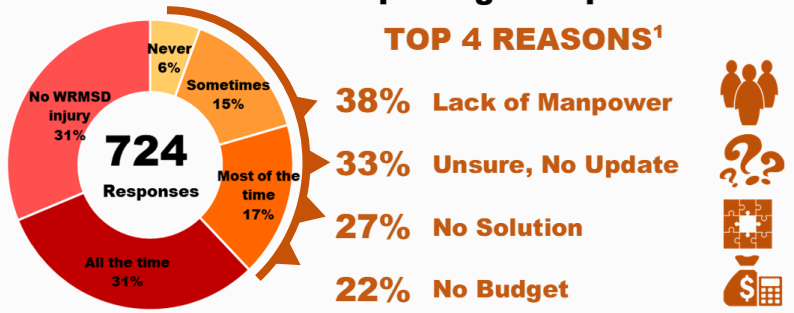
Survey on staff awareness of ergonomics

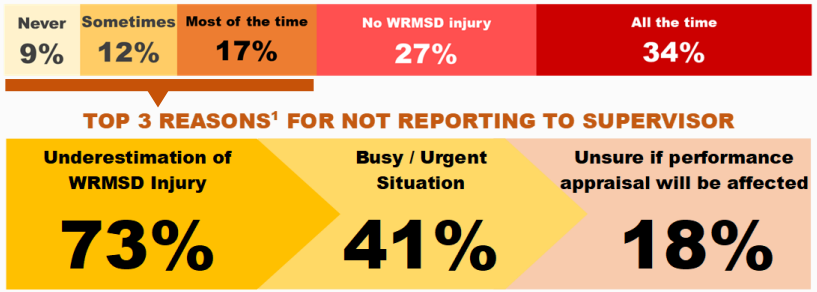
A survey was sent to staff of all levels to determine staff awareness of workplace ergonomics to identify areas for improvement. 724 responses were received.

Are adequate measures taken in your department to prevent WRMSD?

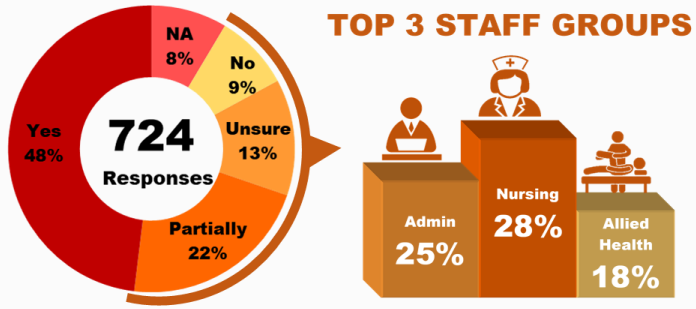
Were your ergonomics-related concerns addressed when reporting to supervisor?



Did you report your WRMSD injury to your supervisor immediately?



Do you think you are adequately trained to perform manual handling?



Staff Awareness in Performing Work Activities Safely

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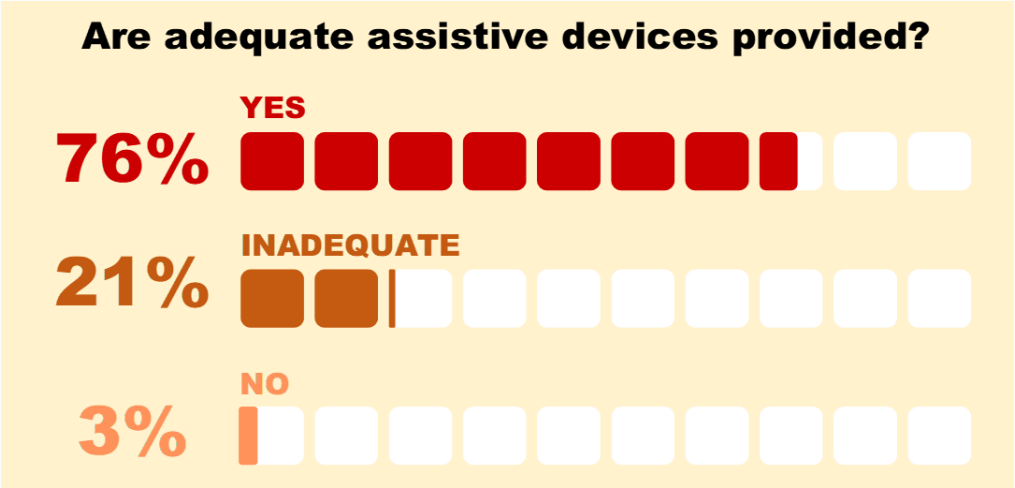
Survey of HODs on assistive devices

*A survey was sent to the Heads of Department (HOD) of 59 workplaces where patient transfer and repositioning were part of their daily work activities. The objective of the survey was to determine the **availability and accessibility** of assistive device for patient handling in SGH workplaces for identification of areas for improvement. 58 HODs responded.*



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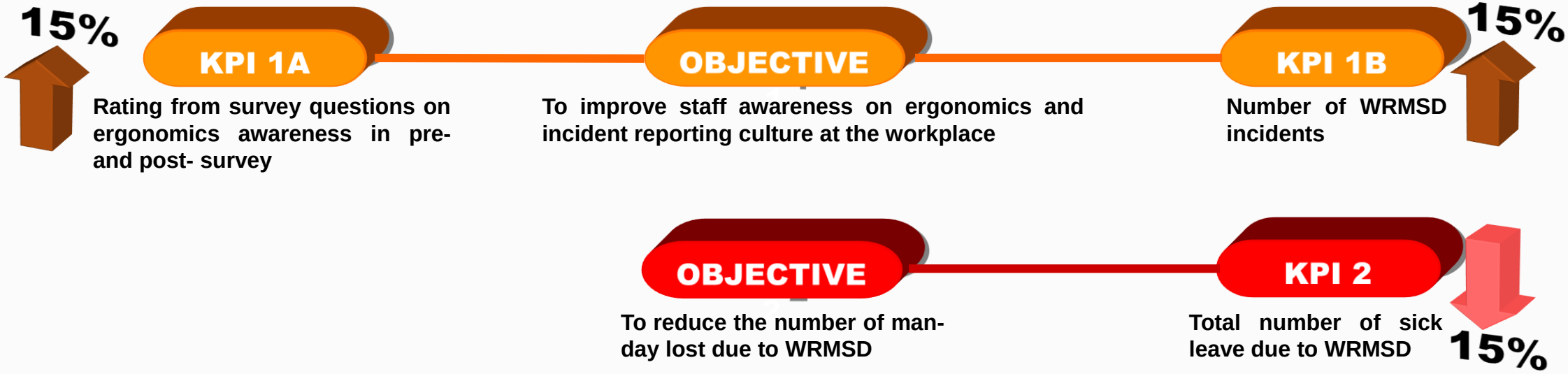
Setting measurable targets



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WRMSD Program

Based on the areas for improvement identified from the incident data analysis and surveys, the development of WRMSD Management Program would focus on three main aspects:

POLICIES & PROCEDURES

RESOURCES

TRAINING & AWARENESS

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WRMSD Program

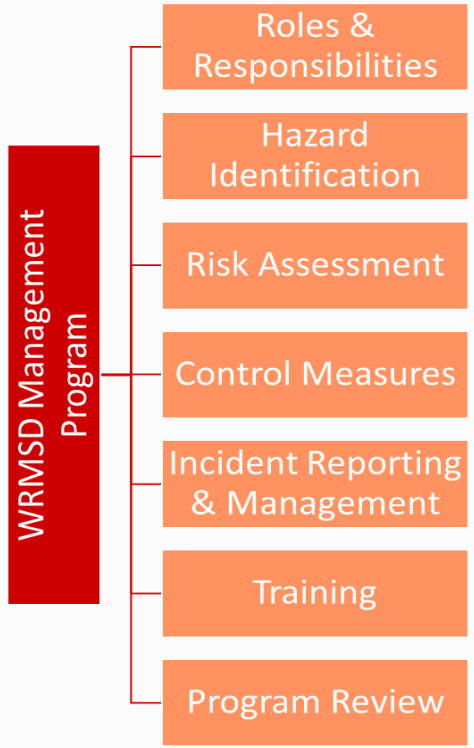
POLICIES & PROCEDURES

Development of written program

A written WRMSD plan, supported by senior management, comprising policies and procedures with clear objectives, responsibilities and measurable elements was critical as a base for the WRMSD Management program.

Supporting documents such as checklist and guidelines were also developed to guide staff on the management of WRMSD risk.

Program Elements



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WRMSD Program

RESOURCES

Risk assessment of work activity for resource planning

WRMSD risk assessment to guide workplace managers to assess the WRMSD risk and plan for the resources needed for safe work performance.

High risk work activities will be reviewed to determine the feasibility for engineering intervention.

Provision of assistive device for patient handling

Workplaces without / with inadequate / insufficient assistive device will be guided on the purchase of assistive device needed.

Provision of radiation protective apparels

Wearing heavy or incorrect size of radiation protective apparel could lead to WRMSD.

Sufficient radiation protective apparel with highly ergonomic safety features will be provided.

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WRMSD Program

TRAINING & AWARENESS

Development of ergonomics training program

A tiered ergonomics training program will be developed based on the WRMSD risk level to train staff in performing the work activities safely to minimize WRMSD risks.

Communication on ergonomics safety

Ergonomics safety will be communicated to staff periodically via different platforms to increase staff awareness in ergonomics.

Videos on safe patient and general manual handling will be generated as part of the communication materials.

No	Type of Training	Mode	Frequency	Staff Group	
				High Risk	Low & Medium Risk
1	Train-the-trainer (for department Ergonomics Champion)	Theory & Practical	Every 2 years	✓	✗
2	Induction Course	Practical	One off	✓	✗
3	Refresher Course	Practical & Theory (Virtual)	Every 2 years	✓	✗
4	Awareness Course	Practical	As and when WRMSD is reported	✓	✗
		Theory	As and when WRMSD is reported	✓	✓

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Acknowledgement

SGH WRMSD Workgroup

Yeo Han Seng (Chair), Chang Yoke Bee, Dr Lim John Wah, Benjamin Wei Da Yap, Er Wei Xiang, Nidu Maran Shanmugan Bala Krishnan, Leong Siew Teing, Kam Wai Kuen

Thank you.

Questions and suggestions for improvement are welcome.

Workplace Safety & Health
is everybody's business