MICHIGAN STATE UNIVERSITY | College of Human Medicine

Intervention to Reduce Workplace Violence in Hospitals:
Results and Lessons Learned

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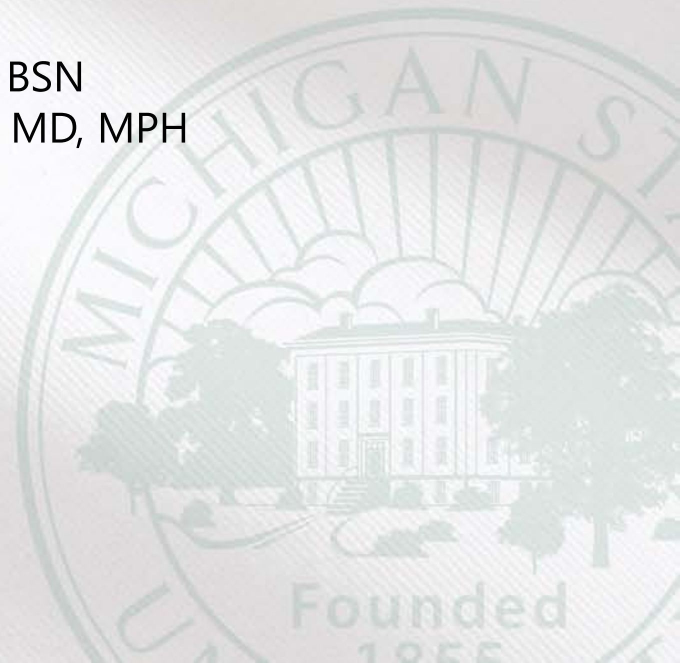
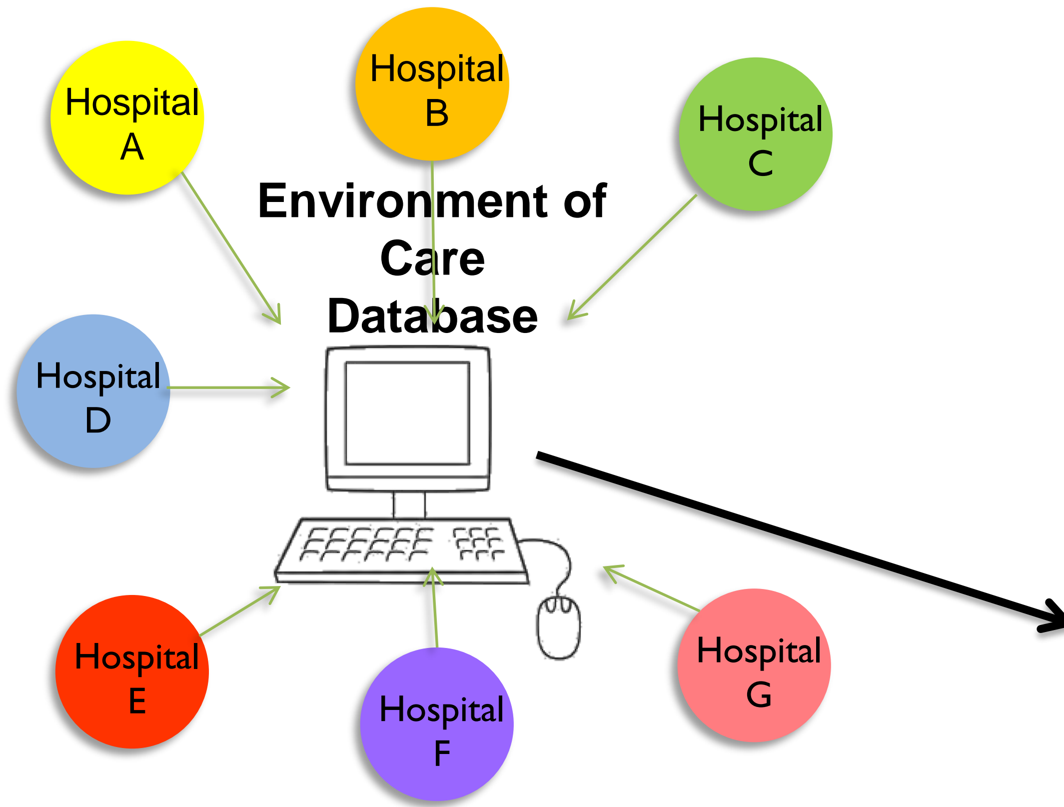
Project Description

- Research grant from CDC/NIOSH
  - Randomized controlled intervention study (R01 OH009948)
  - Project period: September 2011-August 2016
- Partnered with Detroit Medical Center (DMC)
  - 7 hospitals
  - Centralized electronic reporting system for occupational injuries
- Project team:
  - Lynnette Essenmacher, MPH
  - James Janisse, PhD
  - Mark Luborsky, PhD
  - Lydia Hamblin, PhD
  - Jim Russell, BSN
  - Mark Upfal, MD, MPH



DMC Stakeholder Representatives

- Human Resources
- Labor (SEIU, AFSCME)
- Nursing
- Occupational Health
- Quality and Safety
- Security



Workplace Violence Database

Loss Time Management Department

Incidence rates per hospital

Incidence rate = (# incidents/FTE) x 100

Hospital	Incidents	PPH	FTEs	Rate per 100 FTEs
Hospital A	274	20068362	9648	2.84
Hospital B	385	15755088	7575	5.08
Hospital C	102	1948192	937	10.89
Hospital D	263	21268510	10225	2.57
Hospital E	101	6277122	3018	3.35
Hospital F	48	6551160	3150	1.52
TOTAL	1173	80984360	38935	3.12

PPH = paid-productive hours   FTE = full-time equivalents

FTEs=PPH/2080

Unique reporting system & database

- Rates of WPV
  - based on the population at risk
  - not just #s of incidents
- Risk factors for WPV
- Identify high-risk worksites
- Outcomes (injuries, time lost, costs)
- Evaluate the effect of the interventions (ROI)

PROJECT AIMS

1. Develop and evaluate **database-generated reports** of workplace violence incidents attuned to end-user specifications

2. Develop and implement data-driven **strategies for prioritizing** worksites for violence worksite intervention

3. Prospectively evaluate the **impact of an intervention** on violence incidence and injury rates

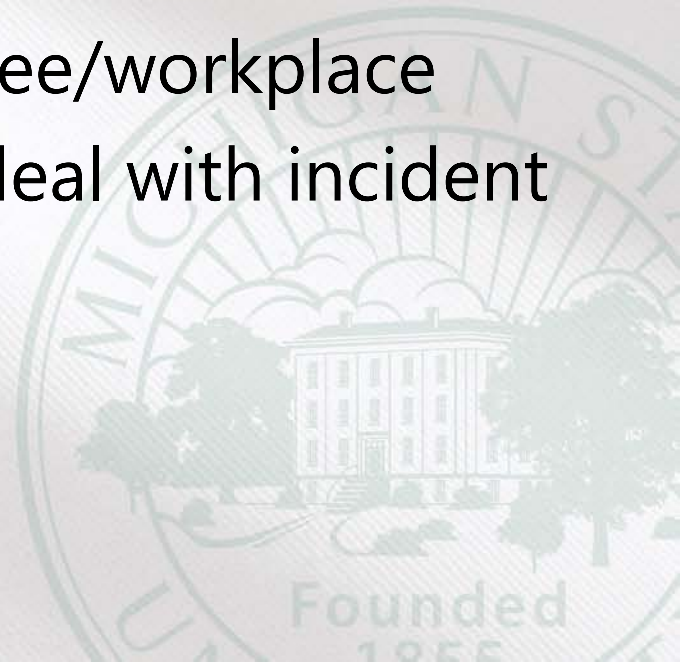
PROJECT PLAN OVERVIEW

Phase I	Phase II	Phase III	Phase IV
Sept 2011- Nov 2012	Dec 2012-Feb 2013	Aug 2013-Oct 2013	Nov 2013-Oct 2015
Standardized computerized WPC reports Developed in collaboration with DMC stakeholders (Focus Groups)	**Hazard Risk Matrix** Determine priorities for intervention n = 41 worksites (2,023 employees)	**Worksite Walkthrough intervention*** n = 21 worksites n = 20 controls (no intervention)	**Evaluations** based on: - changes in incidence rates - management & staff appraisals

* Questionnaire to all 41 worksites pre-intervention and 1-year post intervention

PHASE I: Database reports

- Stakeholders wanted data reports to provide “the big picture”
  - Rates of occurrence
  - Reasons/details
  - Consequences for employee/workplace
  - Organizational efforts to deal with incident



PHASE II: Risk Assessment

- Aim: To prioritize units for WPV intervention
- Methods: Implementation and application of the **Hazard Risk Matrix** (CDC/NIOSH 2003)
  - 30 months' of data (Jan 2010- June 2012)

Hazard Risk Matrix*
Violence Risk Assessment

PROBABILITY				
	High			
	Medium			
	Low			
		Low	Medium	High
			SEVERITY	

*CDC/NIOSH

Populated Hazard Risk Matrix with number of hospital units in each cell

PROBABILITY				
	High	8	5	13
	Medium	6	9	6
	Low	4	2*	0
		Low	Medium	High
			SEVERITY	

N=1159 hospital units total

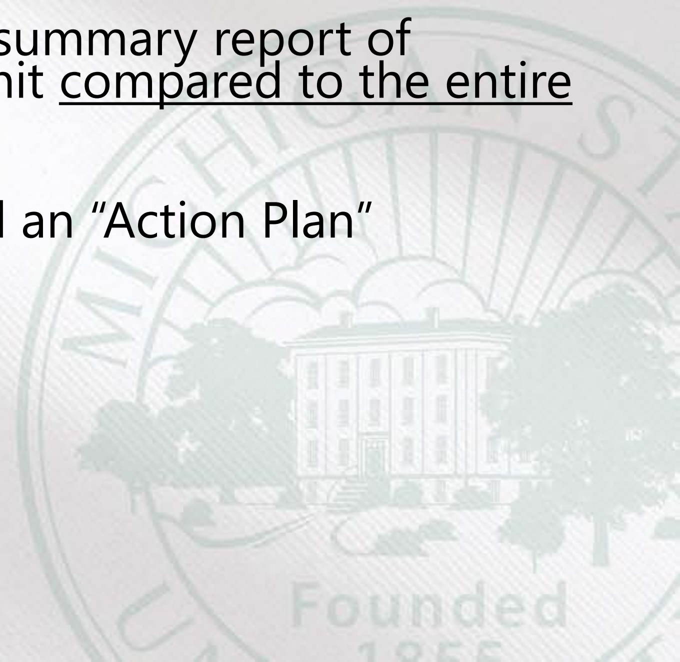
N=53 units reporting at least 5 WPV incidents

N=41 units = high + medium probability and severity

* 1 additional unit identified by stakeholders

PHASE III: Randomized Intervention

- 41 units stratified by unit type (6 "blocks")
  - acute care nursing, intensive care nursing, ED, psychiatry, security, surgery
    - 21 units randomized to the Intervention arm
    - 20 units randomized to the Control arm
- N=21 Intervention units received a worksite visit
    - Supervisors were presented with a summary report of workplace violence data for their unit <u>compared to the entire hospital system</u>
    - Based on this data, units developed an "Action Plan"



Worksite walkthrough: Data-driven improvement on a unit level

High-risk units identified by **Hazard Risk Matrix**

Worksite Walkthrough: 45 min.
WPV Task Force present unit-level data to unit supervisor/staff

Review of risk factors and **Intervention strategies**
Modified OSHA checklist

Action Plan
Supervisor + staff

Follow-up

ACTION PLAN:

What:

Who:

When (Time Plan):

Contact Person: **Email:**

Template for data presentation

Hospital:	
Unit Name:	Emergency Room
Time Period:	2010 - 2012

Number of Incidents: 20	
Type II (Pt-to-Worker): 18	Type III (Worker-to-Worker): 2
Total Loss Time Management Costs: $11,215.52	

Checklist of suggested prevention strategies for workplace violence on hospital units (Hamblin et al., 2017)

ENVIRONMENTAL

ENTRIES/EXITS

- ☐ Are there enough exits and adequate routes of escape?
- ☐ Can exit doors be opened only from the inside to prevent unauthorized entry?
- ☐ Is access to work areas only through a reception area?
- ☐ Are reception and work areas designed to prevent unauthorized entry?
- ☐ Are there security guards at the entrances and/or exits of the unit?
- ☐ Are there metal detectors at the entrances of the unit?

WORK AREA HAZARDS

- ☐ Are waiting and work areas free of objects that could be used as weapons?
- ☐ Are chairs and furniture secured to prevent use as weapons?
- ☐ Is furniture in waiting and work areas arranged to prevent employees from becoming trapped?
- ☐ Are hallways and work areas clear of obstacles that block pathways?

WORKPLACE DESIGN

- ☐ Could someone hear a worker call for help?
- ☐ Is there appropriate lighting used in patient areas? (brightly lit, dim during sleeping times)
- ☐ Is there an appropriate noise level in patient areas?
- ☐ Can workers observe patients or clients in waiting areas and rooms from their work stations?
- ☐ Are patient or client areas designed to maximize comfort and minimize stress?
- ☐ Are there employee-only work areas that are separate from public areas?
- ☐ Is a secure place available for employees to store their personal belongings?

Examples of interventions

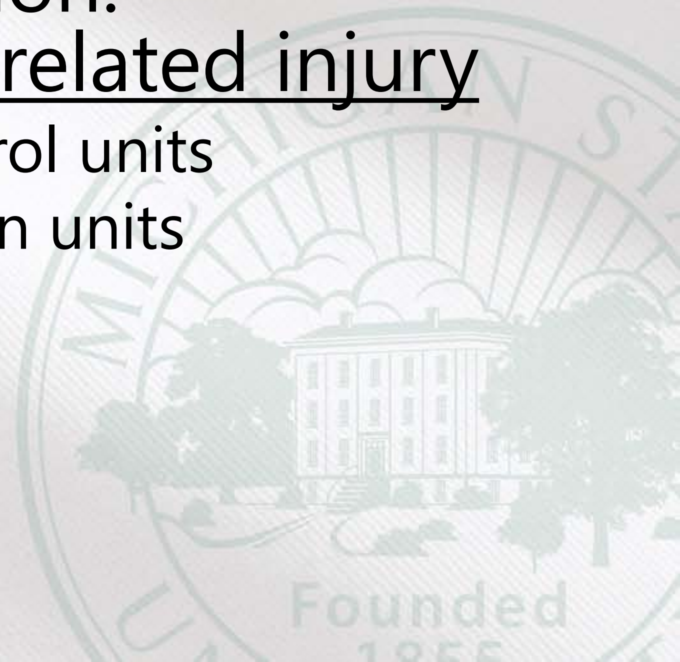
- Environmental: Panic alarms installed; increase locked storage space for patient and staff belongings
- Behavioral: Active shooter training; debriefing with all staff at time of incident
- Administrative: Detailed check of patient belongings upon admission; enforcement of patient visiting hours

PHASE IV: Intervention Evaluation

- 6 months post-intervention: incident rates of violent events*
  - *increased significantly* on control units
  - *did not increase* on intervention units

- 24 months post-intervention: incident rates of violence-related injury
  - *increased significantly* on control units
  - *did not increase* on intervention units

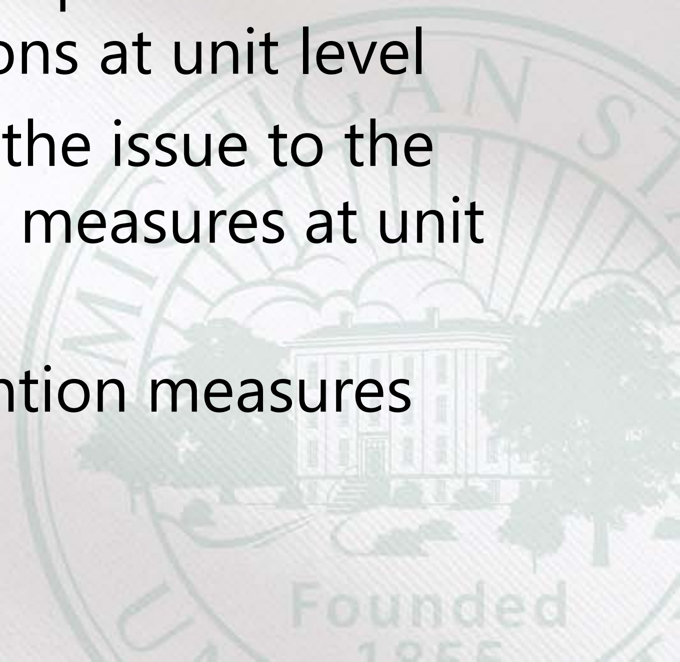
*Patient-to-worker violence



Framework for WPV Prevention that builds on OSHA guidelines

LESSONS LEARNED

- **Reporting** is key: No data – no problem!
  - Systematic, continuous monitoring of population-based rates
  - Identification of risk factors
  - Data reports should be reviewed regularly
- **Hazard Risk Matrix** is a useful tool for identifying/prioritizing hospital units at risk
- **Worksite walkthroughs** provide a practical forum for review of data and risk situations at unit level
- **Action plans** bring ownership of the issue to the work unit: data-driven prevention measures at unit level
- **Data-based evaluation** of prevention measures



TAKE-HOME POINTS

- Data is key!
  - Prevalence rates
  - Unit-based intervention
  - Intervention evaluation
  - Calculate the cost-savings of reduced violence-related injury $$
- Systems approach: WPV data on the hospital dashboard along with other occupational injuries
  - WPV prevention should be integrated into the everyday working life of the hospital
- Change employee mindset
  - from violence is "part of the job" to
  - violence is a problem that needs to be better managed and prevented

References/Resources

Population-based rates:

Arnetz JE, Aranyos D, Ager J, Upfal MJ. Development and application of a population-based system for workplace violence surveillance in hospitals. AJIM 2011;54:925-934.

Hazard Risk Matrix:

Arnetz JE, Hamblin L. Ager J, Aranyos D, Upfal MJ, Luborsky M, Russell J, Essenmacher L. Application and implementation of the Hazard Risk Matrix. AJIM 2014;57:1276-1284.

Intervention results/Examples of prevention strategies implemented:

Arnetz JE, Hamblin L, Russell J, Upfal MJ, Luborsky M, Janisse J, Essenmacher L. Preventing patient-to-worker violence in hospitals: outcome of a randomized controlled intervention. JOEM 2017;59:18-27.

WPV data reports/Checklist of WPV prevention strategies:

Hamblin L, Essenmacher L, Luborsky M, Russell J, Janisse J, Upfal MJ, Arnetz JE. Worksite walkthrough intervention: data-driven prevention of workplace violence on hospital units. JOEM 2017;59:875-884.