**Attachment L-3:**

**Descriptions of Outcome Measures for MSD Intervention Study**

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| **OI:MSD Symptoms (Individual employee level)*** + Rated by employees impacted by target interventions
	+ Collected at baseline and every 3 months from baseline through completion
	+ Participants will also be asked to report severe episodes of back or shoulder pain that occurred within the last 3 months
	+ Ordinal data (but often treated as continuous when scores are averaged)
 |
| *Label* | *Description* | *Comments* |
| OIa | --NASS Lumbar Spine Outcome Assessment Instrument - 17 items with a 6-point response scale: None of the time (=1) - all the time (=6); not at all bothersome (=1) - extremely bothersome (=6)Notes: Factor analysis (Daltory et al, 1996) has identified two scales:1) Pain & Disability scale: items on frequency and bothersomeness of back pain, plus nine items on disability because of pain, for a total of 11 items (questions 1a-b, 5-13). The mean score of this scale will be calculated. (OIa-1)2) Neurogenic Symptom scale: six items on frequency and bothersomeness of leg or foot pain, numbness, and tingling (questions 4a-b, 5a-b, 6a-b). The mean score of this scale will be calculated. (OIa-2)The NASS outcome has been found to have acceptability, high re-test reliability, internal reliability, and validity for low back pain and disability (Daltroy et al 1996; Schochat et al 2000; Pose et al 1999; Padua et al 2001; Bosković et al 2009; Schneider et al 2007; Schluessmann et al 2009; Sigl et al 2006; Weigl et al 2006; Schaeren et al 2005).See **Attachment H-1** for a copy of the NASS instrument.  | Primary outcome Example null hypotheses:OIa-1: There will be no difference between mean Pain & Disability scale score ratios (pre/ post intervention scores) when groups are compared (focusing on time period Baseline A to B)OIa-2: Duration of intervention will not be significantly associated with post mean back Pain & Disability scale score declines |
| OIb | --Quick DASH Outcome Measure with Work Module OptionDASH stands for "Disabilities of the Arm, Shoulder and Hand." The Quick DASH Outcome Measure is a self-reported questionnaire designed to measure physical function and symptoms in people with any of several MSD of the upper limb. The Quick DASH Outcome Measure is scored in two components: the disability/symptom section (11 items, scored 1-5) and the optional Work section (4 items, scored 1-5). (Beaton et al 2001)See **Attachment H-2** for a copy of the Quick DASH instrument. | Secondary outcomeExample null hypotheses:OIb-1: There will be no difference between mean DASH disability/symptom score ratios (pre/ post intervention scores) when groups are compared (focusing on time period Baseline A to B)OIb-2: Duration of intervention will not be significantly associated with post mean DASH disability/symptom score declines |
| OIc | --Borg CR-10 RPE (Ratings of perceived exertion) (Borg, 1982)Please rate the OVERALL PHYSICAL EFFORT level demanded by your job today. 0 = Nothing at all; 0.5 = Extremely weak (just noticeable); 1 = Very Weak; 2 = Weak (light); 3 = Moderate; 4 ; 5 = Strong; 6; 7 = Very Strong; 8; 9; 10 = Extremely strong (almost max); . = Maximal; | Secondary outcome |
| **OE: WC data, Quality, Productivity (Establishment level)*** + Rates will be calculated quarterly (4 times per year)
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| *Label* | *Description* | *Comments* |
| OEa | --Workers compensation (WC) data (collected for all participating establishments, from 2 years pre intervention through study duration)* Intervention specific and general establishment
	+ WC MSD case incidence (per 100 FTE)
	+ WC MSD lost time case incidence (per 100 FTE)
	+ WC MSD cost per 100 FTE\*

\*Analysis of financial related WC outcomes will be deferred until Fall 2015 to allow for proper loss development of claims. | Secondary outcome  |
| OEb | --Absenteeism measures TBD\** Intervention specific and general establishment
* \*Will be identified a priori
 | Secondary outcome |
| OEc | --Quality measures TBD\** Intervention specific and general establishment
* \*Will be identified a priori
 | Secondary outcome |
| OEd | --Productivity measures TBD\** Intervention specific and general establishment
* \*Will be identified a priori
 | Secondary outcome |