



**Bureau of Workers'
Compensation**

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To: Legislative Service Commission
Senate Transportation, Commerce and Labor Committee
House Insurance Committee

From: Nicholas W. Zuk, Chairman, BWC Board of Directors

Re: Actuarial Analysis of Legislation – Senate Bill 118

Date: May 23, 2017

Attached you will find an actuarial analysis of Senate Bill 118 and the identical House Bill 161. These bills propose to expand workers' compensation benefits eligibility to safety service workers who suffer from post traumatic stress disorder (PTSD), without the current requirement of an accompanying physical injury. This report fulfills ORC 4121.125 (C)(6) and (7), which require the BWC Board of Directors to have prepared, by or under the supervision of an actuary, an actuarial analysis of any introduced legislation expected to have a measurable financial impact on the workers' compensation system.

Based on the baseline assumptions in the attached report, our Actuarial Committee believes the estimate that these bills may have a potential annual cost of \$98.4 million is reasonable.

This estimate is based on the following assumptions:

- One out of every 28 eligible employees will file a claim, resulting in roughly 2,900 claims per year.
- Each claim will incur \$33,000 in costs, including \$7,000 in medical and \$26,000 in compensation.
- There will be an additional \$2.5 million required to rehabilitate employees for substance abuse

For comparative purposes, currently all public entities in the State Insurance Fund combined pay approximately \$190 million in total annual premium today. Adding the cost of covering PTSD as proposed in SB 118 would likely have an impact on the employer's future premiums.

While data exists to estimate the number of safety service workers, very little data exists to help us determine how many may apply for workers' compensation benefits due to PTSD. Because of this uncertainty, alternative assumptions would likely result in different estimates of annual costs; some estimates that would be higher and some estimates that would be lower. We feel the assumptions and resulting estimated costs are reasonable.

Please feel free to contact our BWC staff if you have further questions.



To: **Christopher S. Carlson**, FCAS, MAAA, Chief Actuarial Officer

From: **Daniel Myers**, FCAS, MAAA, Director of Actuarial Analysis

Date: May 5, 2017

Subject: **Actuarial Report on Senate Bill 118: Safety Service Workers with Post Traumatic Stress Disorder Eligible for Workers' Compensation**

Actuarial Findings:

Senate Bill 118 (SB118) and the identical House Bill 161 propose to expand workers' compensation eligibility to workers in the safety service industry if they suffer from post traumatic stress disorder (PTSD). As required by law for any proposed legislation that has an actuarial impact on the BWC, the Actuarial Division has conducted an actuarial analysis of SB118. As outlined in more detail on Exhibit 1, we estimate that

- One out of every 28 eligible employees will file a claim. With a population of 80,000 eligible employees in Ohio, there will be approximately 2,900 claims per year.
- Each claim will incur approximately \$33,000, split between \$7,000 in medical costs and \$26,000 in wage compensation
- There will be an additional \$2.5 million required to rehabilitate employees for substance abuse
- All together, annual losses are expected to be \$98.4 million higher if SB118 were to be signed into law

In order to develop these estimates, a number of assumptions must be made, some of which have a high degree of uncertainty. Other assumptions would result in different estimated annual costs, some that might be higher while others that might be lower.

Background of SB118:

Under current law, employees with PTSD symptoms are eligible for workers' compensation coverage only if those PTSD symptoms are brought on by an accompanying physical injury or occupational disease; PTSD symptoms arising from the normal course of employment are not covered as a compensable injury. SB118 would expand that to provide workers' compensation coverage to eligible employees if they are diagnosed with PTSD as a result of their employment. Eligible employees for PTSD coverage are specifically defined within SB118 and contain occupations such as police, firefighters, and emergency medical workers.

PTSD coverage in SB118 is limited to one year of wage compensation and one year of medical benefits. This is in contrast to Senate Bill 5 from the 2015 session of the General Assembly which offered no limitation to the length of time an injured worker could seek coverage. Additionally, SB118 appears to be written so that wage compensation and medical benefits would be tracked independently, allowing an injured worker to continue seeking medical care while returning to work.

Analysis of SB118:

In developing the impact of SB118 shown on Exhibit 1, we sought to identify the following pieces of information:

- Number of employees in covered occupations
- Percentage of employees in those occupations who develop PTSD symptoms who will file claims
- Average wage compensation and medical benefits an injured worker will incur for each claim
- Length of time an injured worker will receive compensation and medical care
- Detoxification costs associated with injured workers suffering from substance abuse

For most of the covered occupations, the number of employees is readily available on public websites such as Ohio Department of Jobs and Family Services or Federal Bureau of Labor & Statistics. The percentage of employees who exhibit PTSD symptoms and the percentage of employees who will file PTSD claims proved to be much more challenging to quantify. Some research has been conducted regarding the likelihood of people developing PTSD in extreme scenarios like soldiers in combat or people involved in crimes or accidents. However, a limited amount of research has been done outside of those extreme scenarios and an even narrower body of research exists when limited to PTSD symptoms arising from work conditions (of any occupation, let alone safety responders). This limited body of research was not consistent enough to allow us to determine a reasonably reliable estimate of percentage of employees with PTSD symptoms. We believe reasonable values could be as low as 10% and as high as 25%. We selected 18% as the percentage of employees with PTSD symptoms. The figures shown on Exhibit 1, column 3 reflect this selection.

We were unable to find any research or documentation that explores the likelihood of people with PTSD symptoms to seek professional treatment but it's reasonable to expect some people with PTSD symptoms to not file claims either because they aren't aware their condition qualifies for workers' compensation coverage, they're unaware of how debilitating their condition is, or they're uninterested in seeking professional help. We judgmentally selected 20% as the percentage of employees who exhibit PTSD symptoms to follow through with filing a claim (as shown on Exhibit 1, column 4) but we readily acknowledge that this number could be significantly different in reality.

The average annual compensation of employees is readily available on public websites such as Ohio Department of Jobs and Family Services or Federal Bureau of Labor & Statistics and is shown on Exhibit 1, column 5. Subject to some minimums and maximums, wage compensation is generally awarded on a weekly basis at 72% of the injured employee's weekly wage for the first 12 weeks and then 67% thereafter. Additionally, SB118 limits the length of time to one year that a PTSD claim will be paid wages. Some claims may experience a shorter timespan than one year but research suggests that claims will often run close to – if not all the way up to – one year of coverage. We selected 39 weeks; we recognize it could be less than that but by statute we know it must be less than 52 weeks. The figures shown on Exhibit 1, column 6 reflect these adjustments.

We know that medical benefits will typically manifest as psychotherapy sessions and pharmaceutical costs but may also include accompanying substance abuse treatment costs. These various medical costs as shown on Exhibit 1, columns 8 and 9 were estimated based on internal BWC costs from existing PTSD claims, reliance on research from Freddie Johnson, Director of Medical Services, and guidance from the Official Disability Guidelines.

Comparison to 2015-Senate Bill 5:

SB118 is similar to Senate Bill 5 (SB5) introduced in the 2015 session of the General Assembly. The primary difference between them is that SB5 placed no limitation on length of coverage while SB118 limits coverage to one year of wage compensation and one year of medical benefits. An actuarial analysis conducted on SB5 arrived at an estimated \$182 million increase in annual losses. This analysis for SB118 closely followed the same methodology, refreshing to more recent data and adjusting for the 1-year coverage limitation. The table below illustrates the

material differences between the actuarial estimates of these two bills. Note that the driving force between the \$182 million for SB5 and the \$98 million for SB118 is the length of time we anticipate making payments. For medical costs, we estimated an 80% reduction in length of medical payments while the estimate in SB118 is reduced by a similar amount of 76%. Likewise, we estimated a 25% reduction in time of wage compensation payments with a similar reduction of 21% with the SB118 estimate.

	# years of Medical Payments	Medical	# weeks of Indemnity Payments	Indemnity	Total
2015 - SB5	5 years	87,302,949	52 weeks	95,442,742	182,745,691
2017 - SB118	1 year	20,664,399	39 weeks	75,213,157	95,877,556
% Difference	-80%	-76%	-25%	-21%	-48%

Uncertainty of Assumptions:

As outlined in the Analysis section above, there are a number of assumptions built into this analysis where there was either no readily available data or any readily available data were not ideally suited to be used without some material adjustment. Any users of this report should recognize that while the actuarial analysis tries to contemplate reasonably feasible outcomes, the future may vary from these assumptions beyond what was contemplated in this actuarial analysis.

Qualifications:

This actuarial report is submitted by Daniel Myers, FCAS, MAA, Director of Actuarial Analysis of the Ohio Bureau of Workers' Compensation. Mr. Myers meets the continuing education requirements of the American Academy of Actuaries and the Casualty Actuarial Society to issue this actuarial report.

Reliance:

This actuarial report relies in part on Teresa Arms of the BWC's Analytics Division for conducting much of the research around methodology and underlying assumptions and on Freddie Johnson of the BWC's Medical Services Division for conducting research and providing guidance on medical costs associated with PTSD treatment. Many thanks to them for making this report much more thorough than it would have otherwise been.

Senate Bill 118: Safety Service Workers with PTSD Actuarial Analysis of Estimated Costs

(1) Occupation	(2) Number of Workers	(3) Estimated Workers w/ PTSD Symptoms	(4) Estimated Workers Who Will File Claims	(5) Average Annual Salary	(6) Estimated Average Temp Total Payment	(7) Estimated Temporary Total Payments	(8) Estimated Average Psychotherapy Costs	(9) Estimated Average Pharmaceutical Costs	(10) Estimated Total Medical Costs	(11) Estimated Total Costs
Ambulance Drivers	800	144	29	\$20,640	\$11,547	334,876	4,616	2,500	206,359	541,235
EMS	10,570	1,903	381	\$31,000	\$15,881	6,050,802	4,616	2,500	2,711,135	8,761,937
Firefighters	32,800	5,904	1,181	\$46,818	\$23,926	28,256,036	4,616	2,500	8,403,807	36,659,843
Police	36,459	6,563	1,313	\$55,076	\$30,900	40,571,443	4,616	2,500	9,343,098	49,914,541
Total	80,629	14,514	2,904		25,900	75,213,157			20,664,399	95,877,556

(12) Estimated Costs for Substance Abuse Rehabilitation 2,558,502

(13) Estimated Total Annual Costs **98,436,058**

(1) Firefighters include full-time, volunteer, and supervisors. Police include full-time, part-time, special operations, and supervisors.

(2) Public records

(3) Estimated that 18.0% of all emergency responders have PTSD symptoms

(4) Assumed that 20.0% of emergency responders with PTSD symptoms will file workers' compensation claims

(5) Public records

(6) Statutorily prescribed weekly wage for an assumed 39 weeks

(7) = column (4) * column (6)

(8) Assumes 20 psychotherapy sessions

(9) Estimated from existing PTSD pharmaceutical costs

(10) = column (4) * [column (8) + column (9)]

(11) = column (7) + column (10)

(12) Exhibit 2, row (12)

(13) = column (11), Total row + row (12)

Senate Bill 118: Safety Service Workers with PTSD

Actuarial Analysis of Estimated Costs

(1) % of employees with PTSD symptoms who also have comorbid substance abuse	70%
(2) % of those employees who require detoxification treatment	25%
(3) Proportion of treatment done as Inpatient and Outpatient	
Inpatient treatment:	30%
Outpatient treatment:	70%
(4) Detoxification Cost = (% IP treatment) * (IP Cost) + (% OP treatment) * (OP Cost)	4,296
Inpatient cost:	5,438
Outpatient cost (70% of IP cost):	3,807
(5) Estimated detoxification cost per employee = row (1) * row (2) * row (4)	752
(6) % with comorbid substance abuse that seek additional psychological treatment	40%
(7) Increase in 1st year therapy costs for those that seek additional treatment [†]	10%
(8) Additional psychological treatment costs per employee	129
= row (1) * row (6) * row (7) * Exh 1, column (8)	

	Ambulance				
	Drivers	EMS	Firefighters	Police	Total
(9) Number of Injured Workers (Exhibit 1, column (4))	29	381	1,181	1,313	2,904
(10) Total Detoxification Costs = row (5) * row (9)	21,802	286,429	887,856	987,092	2,183,179
(11) Total Additional Psychological Treatment Costs = row (8) * row (9)	3,748	49,242	152,637	169,697	375,323
(12) Total Substance Abuse Rehabilitation Costs = row (10) + row (11)	25,550	335,671	1,040,493	1,156,788	2,558,502

[†] Assumes no mandate to select a provider that can treat both PTSD and substance abuse concurrently. Therefore, we would need to recognize an increase due to coordination between both providers and additional therapy visits

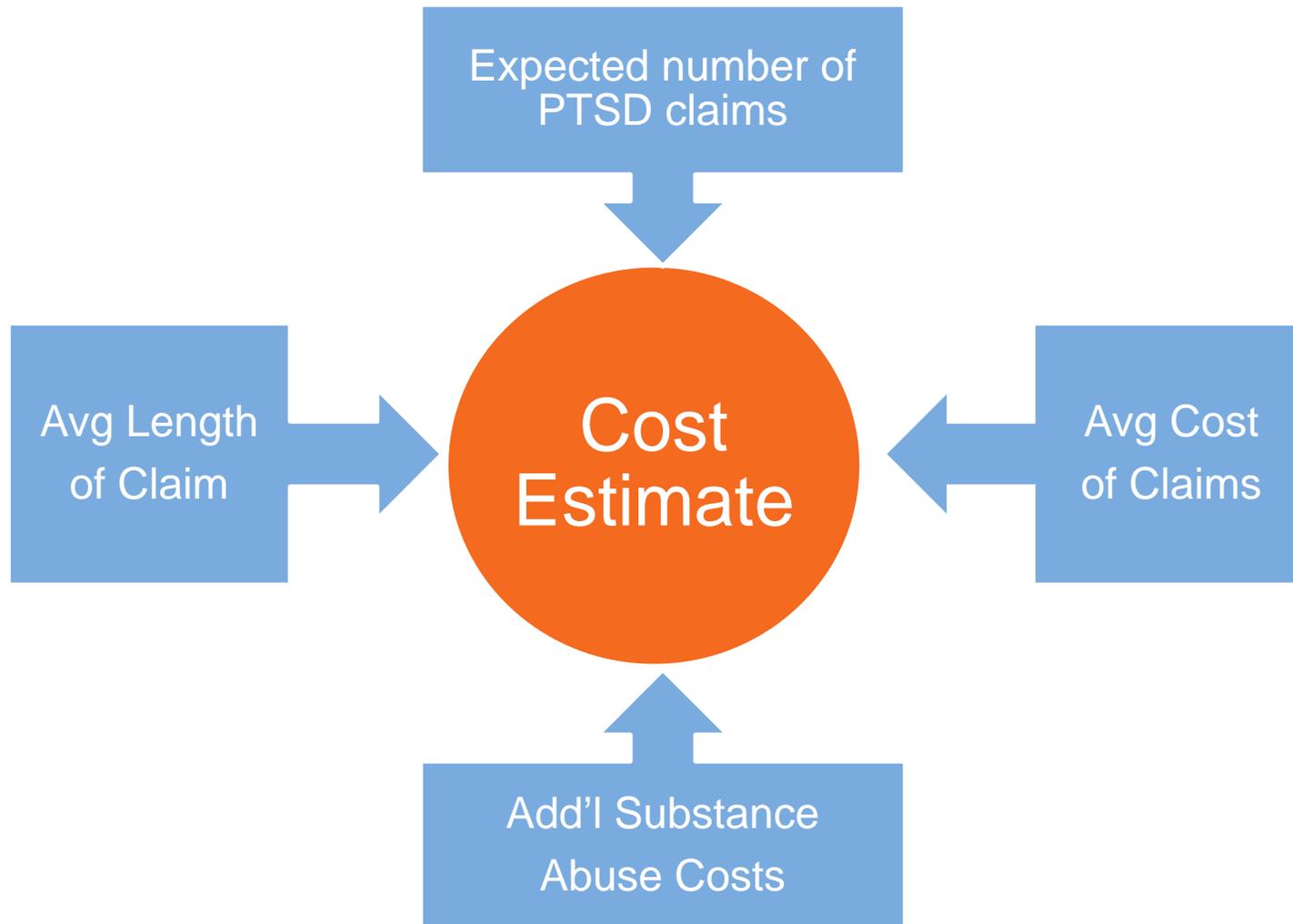
PTSD Cost Estimates: Senate Bill 118 and House Bill 161

5/24/2017

What Would Be Covered?

- Provide benefits to employees suffering from PTSD symptoms as a result of their employment
- Applicable to emergency responders (fire, police, EMS)
- 1 year of medical benefits and 1 year of wage comp
- Coordination of benefits with public retirement systems for that year of coverage

Developing the Estimate



Estimated Cost:

\$98.4 million per year

QUESTIONS