

Calculating Injury and Illness Incidence Rates

The North American Industry Classification System (NAICS) publishes industry-specific statistical data. The NAICS associates a code with each industry, based on the primary activity performed. The United States Bureau of Labor Statistics (BLS) analyzes reported injury and illness incidence rates within a NAICS code to identify industry averages, which many organizations use as a benchmark during annual safety management system (SMS) evaluations.



North American Industry Classification System logo

Calculating incidence rates allows you to compare your organization's work-related injuries and illnesses against your industry as a whole. While it is a lagging indicator, you can use incidence rates to identify and confirm long-term trends within your SMS.

The steps outlined in this handout will help you to select a NAICS¹ code, calculate your worksite's injury and illness incidence rates, and search for published industry averages.

STEP 1: IDENTIFY A NAICS CODE.

Review your organization's mission and determine the primary activity performed that involves the greatest number of employees. Use key words representing your primary activity and conduct a NAICS search on the [United States Census Bureau](https://www.census.gov/ipeds/data/naics/) website. **Choose only one 6-digit NAICS code that best represents the primary work activity for your entire organization.** Search for your chosen code to review the NAICS industry title and a short description of work activities falling under this code.

For the example in this handout, we are going to choose NAICS code *621210: Office of Dentists*.

STEP 2: GATHER INJURY AND ILLNESS DATA.

Reach out to your OSHA recordkeeper. Review copies of the OSHA Form 300: Log of Work-Related Injuries and Illnesses and OSHA Form 300A: Summary of Work-Related Injuries and Illnesses for the last calendar year. Obtain information on:

CALENDAR YEAR	MAN-HOURS WORKED BY ALL EMPLOYEES ²	# OF OSHA-RECORDABLE INJURY AND ILLNESS CASES	# OF OSHA-RECORDABLE INJURIES AND ILLNESSES RESULTING IN DAYS AWAY FROM WORK, RESTRICTED DUTY, AND JOB TRANSFER
2018	353,524	3	2
	OSHA FORM 300A	OSHA FORM 300; TOTALS FROM COLUMNS H, I, AND J COMBINED	OSHA FORM 300; TOTALS FROM COLUMNS H AND I COMBINED

¹ Your OSHA VPP regional representative must approve your NAICS code if you are formally pursuing OSHA VPP recognition. It is a good idea to reach out to them if you do not have a NAICS code to determine which best aligns with the activities performed at your organization.

² Follow the [Optional Worksheet Instructions](#) to help you calculate your man-hours worked; the worksheet also defines who qualifies as an "employee" to include in your calculations.



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STEP 3: CALCULATE YOUR INJURY AND ILLNESS INCIDENCE RATES.

Calculate your incidence rates to determine how your workplace compares to other organizations in your industry³. Use the information from Step 2 to calculate⁴ your Total Case Incidence Rate (TCIR) and Days Away, Restricted, and Transferred (DART) rate:

$$\frac{\text{(Total \# of recordable injuries and illnesses)}}{\text{Man - hours}} \times 200,000 = \text{TCIR}$$

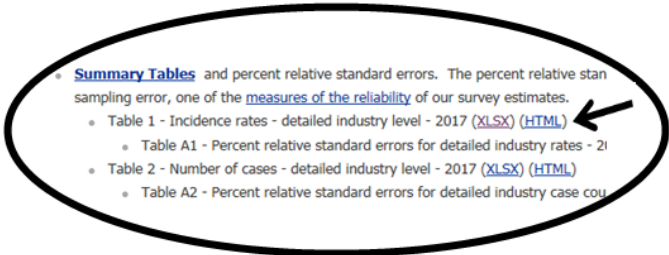
$$\frac{(3)}{353,524} \times 200,000 = 1.69 \text{ total OSHA recordable injuries per 100 employees}$$

$$\frac{\text{(\# of DART injuries and illnesses)}}{\text{Man - hours}} \times 200,000 = \text{DART rate}$$

$$\frac{(2)}{353,524} \times 200,000 = 1.13 \text{ OSHA recordable injuries with DART per 100 employees}$$

STEP 4: LOOK UP PUBLISHED INDUSTRY INCIDENCE RATES.

1. Visit the [United States BLS](#) website.
2. Scroll your mouse over the “Subject Areas” tab to open the drop-down list.
3. Find & click on “Workplace Injuries”.
4. In a green box, you will see “Nonfatal Occupational Injuries and Illnesses”; choose the *Tables* link under “By Industry”.
5. Look at “[Industry Injury and Illness Data](#)” for the most current year posted.
6. Scroll down to “Summary Tables”.



³ Know that some SMSs, like OSHA VPP, require you to calculate a 3-year average for your industry comparison.

⁴ 200,000 represents the number of work hours for 100 employees working 40 hours per week, 50 weeks per year; this is the standard base for calculating injury and illness incidence rates. If you choose a number other than 200,000, be prepared to justify how and why you chose that number.

- Open the table titled “*Incidence rates – detailed industry level – YEAR*”.
- Scroll down until you find the 6-digit NAICS code: 621210. Since the BLS does not list 621210 this year, so use 621.⁵
- View the TCIR and DART for your selected industry.

TABLE 1. Incidence rates¹ of nonfatal occupational injuries and illnesses by industry and case types, 2017 -- Continued

Industry ²	NAICS code ³	Total recordable cases	Cases with days away from work, job transfer, or restriction			Other recordable cases
			Total	Cases with days away from work ⁴	Cases with job transfer or restriction	
Ambulatory health care services	621	2.5	0.9	0.6	0.3	1.6

↑ TCIR
↑ DART

STEP 5: COMPARE YOUR CALCULATED RATES AGAINST THE PUBLISHED BLS INDUSTRY AVERAGES.

- Compare the rates.

NAICS Code:	621210	
	TCIR	DART
Your Rates (2018)	1.69	1.13
BLS Rates (2017)	2.5	0.9
	Your TCIR is <u>below</u> the industry average for 2017	Your DART rate is <u>above</u> the industry average for 2017

- Calculate the percent difference for your TCIR and DART:

$$\frac{\text{Calculated TCIR} - \text{BLS TCIR}}{\text{BLS TCIR}} \times 100 = \% \text{ difference}$$

$$\frac{1.69 - 2.5}{2.5} \times 100 = 32.11\% \text{ below the BLS TCIR}$$

$$\frac{\text{Calculated DART rate} - \text{BLS DART rate}}{\text{BLS DART rate}} \times 100 = \% \text{ difference}$$

$$\frac{0.57 - 0.9}{0.9} \times 100 = 25.72\% \text{ over the BLS DART rate}$$

- Check your calculations at [United States BLS](http://www.bls.gov).

⁵ Try to match the entire 6-digit NAICS code for your industry. If you can't match all 6 digits, match 5. If you can't match 5, match 4, and so on. The published numbers vary each year.

STEP 6: SUMMARIZE YOUR DATA.

Always look at the overall picture. Discuss this information with your safety committee and share it with your leaders. You can use this data to help establish safety and health (S&H) goals to improve your SMS, and to indirectly maintain, or reduce, your incidence rates.

CALENDAR YEAR	MAN HOURS WORKED BY ALL EMPLOYEES	OSHA FORM 300A	OSHA FORM 300	OSHA FORM 300B	OSHA FORM 300C
2018	253,524	3	1	1	1

$TCIR = \frac{\text{Total \# of recordable Injuries and Illnesses}}{\text{Man hours}} \times 100,000 = \frac{3}{253,524} \times 100,000 = 1.19$
 $DART \text{ rate} = \frac{\text{Total \# of DART Injuries and Illnesses}}{\text{Man hours}} \times 100,000 = \frac{1}{253,524} \times 100,000 = 0.39$

Calculated TCIR = BLS TCIR $\times 100 = \frac{1.69 - 1.19}{1.19} \times 100 = -42.02\%$
 Calculated DART rate = BLS DART rate $\times 100 = \frac{0.54 - 0.4}{0.4} \times 100 = 35\%$

NAICS Code: 621210
 TCIR: 1.69
 DART: 0.54

Calculating TCIR and DART Incidence Rates
Image courtesy of Concurrent Technologies Corporation

For NAICS code 621210, the TCIR was below the industry average, while the DART was above. This means compared to other organizations in your line of work, you have more injuries and illnesses involving days away from work, restricted duty, or job transfers. Any organization concerned with the S&H of its employees should strive to have incidence rates lower than the industry average.

When your incidence rates are over the industry average, consider creating an accident prevention or rate reduction plan, developing a strategic S&H goal relative to incidence rate reduction, or moving forward with implementing a SMS.

For additional information on the SMCX's services, please visit the SMCX-hosted website at: <https://www.smcx.org/>.