Maine Apprenticeship Outcomes Report Technical Documentation

Content

Section 1: About MaineEARNS & The Maine Apprenticeship Outcomes Report

Maine Education and Attainment Navigation System (MaineEARNS) is a unique data series designed to shed light on the effect of education and training program completions and other economic events on earnings over time. MaineEARNS refers to the data series and its governing organization comprised of data-contributing organizations. The Maine Apprenticeship Outcomes Report is a MaineEARNS product featuring aggregate wage and employment outcomes of completers of the Maine Apprenticeship Program.

Metrics displayed include number of completers, percentage who are employed in Maine, median wages, and number remaining with their sponsoring employer or industry sector. These outcomes are available by occupational training. In addition, the Maine Apprenticeship Outcomes Report displays demographic data such as age, gender, education, and race of all completers.

The information is intended to help a wide range of stakeholders, including prospective apprentices, educators, administrators, parents and policy makers better understand the relationship between an apprenticeship and labor market outcomes.

The Maine Department of Labor's Center for Workforce Research and Information developed MaineEARNS and the Maine Apprenticeship Outcomes Report with grant funding from the U. S. Employment and Training and with General Funds allocated by the Maine State Legislature.

Section 2: Methodology

This report contains information about apprentices who completed an apprenticeship on or after October 1, 2016. Outcome year one measures the four quarters after the participant's enrollment end date. Apprentices completing their program closer to 2016 have more outcome data for evaluation than recent completers, as more time has elapsed.

Wage and employment records from Maine's unemployment insurance system include a vast majority of employment within the state. These data do not capture jobs in other states among those who may have moved from or to another state or may be commuting to another state for work. As well, these data do not capture employment not covered by Maine unemployment insurance such as federal government, the unincorporated self-employed, or those working as independent contractors.

Wage records measure total quarterly earnings. Hours worked are not collected. Earnings are used to approximate full time status. A person is considered working full time if they earned more than the minimum wage multiplied by 32 hours per week multiplied by 13 weeks per quarter, for four consecutive quarters. Wages are adjusted for inflation using the latest annual average Consumer Price Index (CPI-U) available.

The industry assigned to an apprentice is the industry of their primary employer, or the employer who paid the most wages during the reference period.

Apprentices can be sponsored by an individual employer, a group of employers such as a trade association, or a trade union through a joint apprenticeship training committee that is comprised of union and management members engaged in bargaining agreements. To account for the different types of sponsorships, the sponsoring employer is assigned by the employer provided in the Registered Apprenticeship Partners Information Data System (RAPIDS 2.0), and/or the primary employer of the person at completion of the program.

To ensure the protection of individual participant information, any data point breaking down program, employment or wage data into subgroups that contain fewer than 10 participants is not included in this report.

Section 3: Technical Definitions

Average Program Length

The average length of time, in months, between program start dates and completion dates.

Age Group

Age of the apprentice at program registration, displayed in groups (for example, 25 through 34).

Adjusted Wages

To enable a comparison of completers over time, wages are adjusted in the reference year for inflation to reflect current price levels. Wages are adjusted for inflation using the Consumer Price Index (CPI) as follows:

$$Adjusted\ Wage = Nominal\ Wage * \frac{CPI_{Current\ Year}}{CPI_{Reference\ Year}}$$

The average annual price index for all urban U.S. areas (CPI-U) obtained from the U.S. Bureau of Labor Statistics is used for this calculation.

Completion Date (Fiscal Year)

The program year of completion. Apprenticeship program years occur between October 1st and September 30th of the following year. The earliest completers presented in this data series are from October 2016 (program year 2017).

Education

The level of education at registration reported by the apprentice.

Gender

The gender of the apprentice reported at registration.

Median Wage of Full Time Maine Employees

Median Annual Wages are calculated using the median value for the range of wages earned in a given outcome year by qualifying completers in a cell. To qualify, a completer must have earnings that meet the definition of full-time wages (see Number of Completers with a Full Year of Maine Wages). This metric only displays if greater than 10 students earned full-time wages.

Number of Completers

A unique count of completers in a category.

Number of Completers with a Full Year of Maine Wages

A unique count of completers who worked in a job covered by Maine's Unemployment Insurance program and earned a full-time equivalent wage (FTEW). The FTEW threshold used is the equivalent to working 32 hours per week at the state minimum wage for the entire 13 weeks in a quarter. If a completer worked in multiple jobs during the quarter, then wages are summed together to determine full-time equivalence. This metric is only displayed if greater than 10 completers are included in the aggregated count.

Number of Completers with Maine Wages

A unique count of completers who had wages of any amount in a given outcome year, working in a job covered by Maine's Unemployment Insurance program. An individual

need not have wages in every quarter to be included. This metric is only displayed if greater than 10 completers are included in the aggregated count.

Number with Sponsoring Employer

The count of apprentices employed by the employer that sponsored the apprenticeship after completion. Apprentices can be sponsored by an individual employer, a group of employers such as a trade association, or a trade union through a joint apprenticeship training committee that is comprised of union and management members engaged in bargaining agreements. If there is no single sponsoring employer, the sponsoring employer becomes the primary employer of the apprentice during the quarter they completed their program.

Number in Sponsoring Sector

The count of completers who remain working in their sponsoring sector after completion. The sponsoring sector represents the [industry sector](#) of the [sponsoring employer](#).

Number with Valid Records

A valid apprenticeship record is one in which sufficient and accurate information has been collected to enable a match between the apprentice and their employment and wage records.

Occupational Group

Each training is assigned to a detailed occupation using the Standard Occupational Classification (SOC) system. The occupation represents the career the apprentice is training for. The occupational group describes a larger group of similar occupations which allows similar programs to be grouped together.

Occupational Training

Each training is assigned to a detailed occupation using the Standard Occupational Classification (SOC) system. The occupation represents the career the apprentice is training for.

Outcome Year

The outcome year refers to the time elapsed since the completion of an apprenticeship program. Outcome year 1 refers to quarters 1 through 4 after completion. Outcome year 3 refers to quarters 9 through 12 after completion. Outcome Year 5 refers to quarters 17 through 20 after completion.

Percentage (%) Working Full-Time in Maine

The percentage of all completers meeting the definition of [Completers with a Full Year of Maine Wages](#). This metric is only displayed if greater than 10 completers are included in the aggregated count.

Percentage (%) Working Full or Part-Time in Maine

> The percentage of all completers who worked in a job covered by Maine's Unemployment Insurance program in any quarter during the outcome year. This metrics is only displayed if the number of completers is greater than 10 students.

Race

> The race of the apprentice selected at registration.

Sector

> Employers are assigned to an industry sector according to the North American Industry Classification System (NAICS). The NAICS code represents the primary business activity of the employer. Apprentices are assigned to an industry based on the NAICS code of the employer who paid the most wages during the reference period. Sectors are broad groups that combine multiple related industries.

> If a completer is working in more than one industry during the outcome year, indicating multiple or sequential job holding, the highest paying job will determine the completer's industry assignment. For example, if a completer's primary source of income is derived from a nursing job at a hospital and earns secondary income coaching hockey part-time, they will be counted as working in healthcare and social assistance and not educational services. The Apprenticeship Outcomes Report reports the sum of wages earned at all covered jobs during the quarter. This metric is only displayed if greater than 10 completers are included in the aggregated count.

Status

> The status of the apprentice. This report only displays outcomes of apprentices who have completed their program.

Section 4: Caveats and Limitations

Can wage outcomes be used to measure the causal effect of an apprenticeship on earnings?

No. What completers of an apprenticeship earn may reflect many external factors that can't be measured. Some apprenticeship may attract people who already have high earning power. Others may attract people with high natural ability, whose subsequent earnings reflect their natural ability as much as or more than the effect of the program they complete. Earnings data cannot necessarily be interpreted *causally,* in other words, it cannot be concluded that these individuals earned this much *because* they completed their program. The MaineEARNS databased does not employ statistical techniques that can be used to infer causality. No effort has been made here to control for other factors that influence wage outcomes described in part above.

Additional Limitations

Wage outcomes in programs with small numbers of completers may be affected by outliers, that is, by completers with unusually high or low wages, thus rendering them misleading as predictors of the wages that most completers can expect.

Methods for calculating and reporting earnings are not nationally standardized, and similar statistics calculated by other states may not be validly comparable to those reported here.

Why might apprentice wage records be missing from the MaineEARNS database?

The MaineEARNS databased only includes those completers who have employment records in the Maine unemployment insurance (UI) database. The absence of a wage record match does not necessarily indicate that a completer is not working. Completers with no wage records may be employed in another state, may earn wages not covered by the state UI system, they may be self-employed, or employed by the federal government. While most completers are accounted for in the Maine wage record system, an expanded data set that includes out-of-state earnings, self-employment earnings, and federal government earnings, would indicate a higher share of completers with earnings.

Can multiple job holders be distinguished from completers transitioning between jobs?

No. The MaineEARNS database contains information about quarterly wages of workers in employment covered by Maine's UI program. Completers might have more than one wage record in any given quarter for various reasons including working multiple jobs simultaneously, transitioning from one job to another during the quarter or working for an employer that has multiple UI tax accounts.

Section 5: Frequently Asked Questions

How does adjusting wages for inflation impact the full-time equivalent wage threshold? How do increases in Maine's minimum wage impact the full-time equivalent wage threshold?

Completers are considered employed full-time in Maine if they have four consecutive quarters of Maine wages above the full-time equivalent wage (FTEW) during the reference year.

If a completer has earned covered wages in Maine but does not meet the FTEW threshold, they are counted as working in Maine.

Wages are calculated on a quarterly basis. If during an outcome year the minimum wage changes, the threshold changes. For example:

Table 1 Example of the Full Time Equivalent Wage (FTEW) calculation

Apprentice	Quarter	Minimum Wage	Full-Time Equivalent Wage	Actual Wage	Meets FTEW threshold (Y/N)
Apprentice A	1	$10	$4,160	$4,500	Y
Apprentice A	2	$10	$4,160	$4,500	Y
Apprentice A	3	$11	$4,576	$4,500	N
Apprentice A	4	$11	$4,576	$4,500	N

In the table above, Apprentice A does not meet the FTEW threshold. Although they earned wages for four consecutive quarters, when accounting for the minimum wage change, they did not earn more than the FTEW during the entire outcome year.

The FTEW is calculated using nominal (unadjusted) wages during the reference quarter. Wages are only adjusted for inflation after meeting the FTEW threshold. The minimum wage used in the FTEW calculation is the minimum wage during the reference quarter. In other words, for a completer with earnings records in 2010, the FTEW calculation utilizes Maine's 2010 nominal minimum wage of $7.50 per hour though Maine's minimum wage has since increased.

How does MaineEARNS protect data using deidentification?

MaineEARNS deidentifies all Personally Identifiable Information (PII) by assigning completers a random ID once they enter the data warehouse. The Maine Apprenticeship Outcomes Report aggregates all records and displays labor market outcomes of groups with at least 10 completers, so no person is identifiable at the primary or secondary (where data is rolled up) level.

Why are there more completers when one year after completion is selected?

Outcome years are consistently being added as more time is removed since a person's completion date. In 2025, apprentices who completed their program before 2020 have three or more outcome years; in 2026, they will have four or more outcome years as more time has elapsed since their program. Meanwhile completers in 2023 will have one outcome year available in 2025 and two in 2026. As such, more recent completers will have less outcomes years available, as less time has passed since they completed their program.

How are the sponsoring employer and sponsoring sector defined?

The [sponsoring employer](#) is the employer who sponsored the completer's apprenticeship. Not all sponsoring employers are provided. In the case where a sponsoring employer cannot be tracked, the sponsoring employer becomes the employer who the apprentice was working for when they completed their apprenticeship.

The [sponsoring sector](#) is the industry sector assigned to the sponsoring employer.

Section 6: Data Sources

Apprenticeship Records come from the federal Registered Apprenticeship Partners Information Database System (RAPIDS). Apprenticeship records are linked to wage and employment data from Maine's unemployment insurance database, containing earnings from all covered Maine jobs (read about the caveats of these data [here](#)).