What is in the matrix?
The Program Overlap matrix is a visualization of various types of program overlap rates. The main part of the visualization is a matrix of squares. Each square, or cell, represents the overlap between two of the programs in the study. The rows of the matrix represent the source programs, while the columns represent the linked programs.

The cell at the intersection of a row and column provides information about the proportion of individuals in the source program who were also in the linked program. For example, the cell at the intersection of the health care registry column and the post-secondary students row represents the proportion of post-secondary students who were in the health care registry. Conversely, the cell at the intersection of the post-secondary students column and the health care registry row represents the proportion of health care registrants who were post-secondary students. All programs in the study appear as rows and as columns, so the matrix shows all possible program overlaps.

An additional column provides the No Match rate for each source program. This is the proportion of individuals in the source program who did not use any of the other programs in the study.

How do I use the matrix?
The visualization is interactive. When a cell is clicked, it is highlighted with a green border, and information about that cell appears below the matrix. This information includes the percentage of overlap between the two programs, as well as the number of overlapping individuals and the total number of individuals in the source program.

What do the colours mean?
The darkness of the cell colour indicates the degree of overlap between the two programs; darker colours represent greater overlap.

The diagonal (the set of cells for which source and linked programs are the same, e.g., health care registry by health care registry) is white in colour, and when clicked “Not applicable” appears at the bottom of the matrix. This is because program overlap within a given program is not meaningful.

Where can I find further information?
When the cursor is placed over the name of a program, a short description of the program pops up. When the name of a program is clicked, a document with a longer description of the program and a summary of the program overlap rates for that program is opened.

At the bottom left of the visualization are three links. The first link, when clicked, will lead the user to the tables of values that are visualized in the current matrix. The link is to a location in a larger document that contains all of the tables for nine matrices. This document can be downloaded in entirety by the user.

The second link at the bottom left of the visualization is to this document.

The third link is to a short video tutorial about the matrix.
What are those columns to the right of the matrix?

On the right side of the matrix is additional information about the source programs. The age range of the individuals in the program is provided under “Minimum Age” and “Maximum Age”. These are minimum and maximum ages in years as of the end of the fiscal year. The total number of individuals in the source program is also provided under “Total Individuals”. The “% of Population” column contains the percentage of all individuals in the study who are of the age range for the source program and are in the source program.

How can I customize the visualization?

There are two drop-down boxes at the top of the right side of the visualization.

The first drop-down box, under “Matrix:” allows the user to choose from among nine different program overlap matrices.

Program overlap in any study year: This matrix provides information on whether individuals who used the source programs at least once at any point during the study years also used the linked programs at least once during the study years. For example, the cell at the intersection of the health care registry column and the post-secondary students row represents the proportion of individuals who were post-secondary students at any point during the study years and who were in the health care registry at any point during the study years. The individuals were not necessarily in the two programs at the same time; rather, they were in each of the programs at some point during the six year study period. This matrix provides a general overview of cross-program involvement, capturing program use overlap without regard for when programs were used during the study.

2005/06 program overlap: This matrix provides information on whether individuals who used the source programs in 2005/06 also used the linked programs in 2005/06. For example, the cell at the intersection of the health care registry column and the post-secondary students row represents the proportion of individuals who were post-secondary students in 2005/06 and who were in the health care registry in 2005/06. The individuals were not necessarily in the two programs at the same time; rather, they were in each of the programs at some point during the year. This matrix provides a year-specific overview of overlap in program use. Comparison of the six yearly overlap matrices will help to understand patterns over time that may arise from policy or demographic changes occurring during the study years.

2006/07 program overlap to 2010/11 program overlap (5 matrices): Same as 2005/06 program overlap, but for different study years.

2005/06 and future program overlap: This matrix provides information on whether individuals who used the source programs in the first study year (2005/06) also used the linked programs at least once during the study years. For example, the cell at the intersection of the health care registry column and the post-secondary students row represents the proportion of individuals who were post-secondary students in 2005/06 and who were in the health care registry at any point during the study years. This matrix is useful for understanding future program use patterns for those individuals who were in the study in the first year. Rates are relevant for studying transitions into programs and outcomes after program use.
2010/11 and past program overlap: This matrix provides information on whether individuals who used the source programs in the last study year (2010/11) also used the linked programs at least once during the study years. For example, the cell at the intersection of the health care registry column and the post-secondary students row represents the proportion of individuals who were post-secondary students in 2010/11 and who were in the health care registry at any point during the study years. This matrix is useful for understanding past program use patterns for those individuals who were in the study in the first year. Rates are relevant for studying transitions from programs and determinants of program use.

The second drop-down box, under "Sort matrix by:" allows the user to choose from among five different sort criteria.

- **Total individuals:** The rows and columns are sorted by total number of individuals in the source programs, from highest to lowest.
- **% of population:** The rows and columns are sorted by % of population for the source program, from highest to lowest.
- **Program name:** The rows and columns are sorted alphabetically by the names of the source programs.
- **Ministry:** The rows and columns are sorted alphabetically by ministry name and then by program name (Advanced Education, Education, Human Services, Justice and Solicitor General; within each, programs are sorted alphabetically by name). This is the sort order that is used in the accompanying tables.
- **Minimum age:** The rows and columns are sorted by minimum age of the source programs, from lowest to highest.
- **Maximum age:** The rows and columns are sorted by maximum age of the source programs, from lowest to highest.

**Notes**

**Age**

All program overlap rates are age-appropriate rates. That is, they are limited to individuals in the study who are of the appropriate ages to make overlap between the two programs possible. For example, if one program serves 12 to 30 year olds and another serves 0 to 18 year olds, only 12 to 18 year olds can be in both programs in a given year. The proportion of overlap between the two is based on the total number of age-overlapping individuals (in this case, 12 to 18 year olds).

Note that matrices that consider program use across the entire study (the Program overlap in any study year, 2005/06 and future program overlap, and 2010/11 and past program overlap matrices) have a wider range of age overlap due to the wider range of time over which program use is considered. All ages referred to are as of March 31 of a given year.
Population reference
Overlap rates with the health care registry as the linked program are a good indicator of the validity of the linkages. We expect high overlap with the health registry for many programs (e.g., Education, Human Services programs) because virtually all Albertans are in the health care registry and users of those overlapping programs are usually Albertans. Some programs provide health benefits (e.g., Income Support and AISH), so overlap with the health care registry is expected to be even greater for those programs (note that no rates are expected to reach 100% due to data quality and other issues). For some programs, lower overlap with the health care registry is expected. For example, many individuals in Advanced Education are from out of province; this means overlap with the health care registry is lower.

One of the accompanying tables provides rates of overlap with the health care registry. This table can be used a reference table, with the health care registry acting as a proxy for the entire population of Albertans in the age range of participants in the study. In this table, rates are provided for groups of programs that share the same age groups (and thus share the same age-overlapping populations with the health care registry). This table is not of the same form as the other tables, and is therefore not visualized.

For example, out of all of the 18 to 30 year olds in the health care registry, 32% were post-secondary students. Amongst 18 to 30 year old Child Support Services respondents, 12% were post-secondary students. Comparison of these two rates provides the user with a reference to the population: Post-secondary participation among Child Support Services respondents is lower than among all people of the same age in Alberta (represented by the health care registry).

Overlap between Education programs
Program overlap rates for Education were split after the linkage process into three sub-programs. These were K to 12 students, students with special needs, and English as a Second Language students. Because they all came from the same dataset and were split after the linkage, overlap rates between K-12 and the other two programs approach 100% by virtue of sharing an original source. They are slightly less than 100% because the K to 12 students do not include the youngest students with special needs and English as a Second Language students, who are not yet kindergarten age. This splitting of the Education programs also means that No Match rates for these programs are close to 0%, because they overlap at nearly 100% with each other.

Child Care Subsidy age eligibility change
Age eligibility for Child Care Subsidy changed from 0 to 8 years in 2005/06 to 2007/08 to 0 to 12 years in 2008/09 to 2010/11. This means that age overlap between Child Care Subsidy and other programs is different for different study years.

Cells with no possible overlap
Some programs serving young children have no overlap in a given year with adult-serving programs. When there is no possible overlap between two programs, clicking on the relevant cell will result in “No age overlap” appearing at the bottom of the matrix. These cells contain a dash “– “ in the accompanying tables.
Small N cells

When there is possible overlap between two programs, but 0 to 9 individuals used both programs, clicking on the relevant cell will result in “Fewer than 10 individuals” appearing at the bottom of the matrix. This suppression of small numbers of individuals is a privacy-protection measure. The number of individuals and resulting percentage are also suppressed in the accompanying tables; the number of individuals contains “<10” in these cases, while the percentage contains a dot “×”. The denominator (number of age-overlapping individuals in the source program) does appear in the tables, provided it is 10 or greater.