Completion Rates
at Alberta's Publicly Funded Post-Secondary Institutions
Phase II Backward Tracking

Strategic Research & Analysis
December 2019

Overview:

The Strategic Research & Analysis branch (SRA) published completion rate material in November 2019. The published material focuses on cohorts of new students that started programs at the same time; these starting cohorts were tracked for program completions over pre-defined periods depending on the credential types. As a result, this "forward tracking" approach based on the cohorts' starting time is not able to cover the most recently enrolled cohorts (i.e. cohorts starting in 2018-19) due to the long tracking periods required.

The SRA has developed this PHASE II parallel algorithm to apply the "backward tracking" approach based on the cohorts' ending time. This means that students who are supposed to complete their programs by the same year are grouped together for tracking and reporting. The intention of developing this PHASE II algorithm is to refine completion rates reporting and to be able to utilize most recent information for decision-making. PHASE I reporting will continue to be produced and this new tracking approach will be added so that the department has a whole view of students pathways.

Most of the definitions of PHASE I will still apply in PHASE II. The only differences are:

(1) Starting cohorts.
- In PHASE I, cohorts starting their programs together are grouped for tracking. This means that they start in a same year but are supposed to complete within different time frames depending on the credential types.
- In PHASE II, cohorts that are supposed to complete by the same year are grouped for tracking and reporting. These cohorts would not start programs in the same year due to the different tracking periods assigned for each credential type. A new definition is introduced in this phase – Completing Cohorts. Completing Cohorts consist of starting cohorts that are supposed to complete their programs by the same year. For example, the 2018-19 completing cohorts consists of the 2015-16 certificate starting cohort, 2014-15 diploma starting cohort, 2012-13 Applied & Bachelors starting cohort, 2013-14 Master starting cohort and 2010-11 Doctoral starting cohort. These starting cohorts are supposed to complete programs by 2018-19. PHASE II results will be able to report on the percentage of completers in each completing cohort.

(2) Reporting patterns.
- PHASE I reports on starting cohorts of 2007-08, 2008-09, 2009-10, 2010-11, 2011-12 and 2012-13 and will be able to report on the 2013-14 starting cohorts when 2019-20 enrolment data is available. PHASE II is able to report on completing cohorts of 2018-19, 2017-18, 2016-17, 2015-16, 2014-15 and 2013-14 and will be able to report on completing cohort of 2019-20 when the 2019-20 enrolment data is available.

(3) Tracking periods.
- In PHASE I step three tracking is set nine years for Doctoral cohorts and seven years for all other credential types. In PHASE II step three tracking will only be done within the typical program duration plus three years otherwise the identical tracking period for all credential types will make these cohorts starting at the same time.

Methodology:

1. The following filtering and recoding steps need to be done to prepare the datasets for further processing.
   - Exclude records with "Non-Credential" Credential Type (for all years).
   - Exclude records with "Journeyman" Program Type (for all years).
   - Exclude records with "W" Calculated Enrolment Registration Status (for all years).
   - Exclude non-active records with "L" or "N" Calculated Enrolment Registration Status (for the cohort year and its previous three years only; some of these non-active records of the cohort year will be added back while tracking completions).
   - When a student has multiple enrolment records in a cohort (identified by the "ASN-Provider-Credential Type-Program Type" key), and if at least one record has self-identified Indigenous status, assign Indigenous status to all records associated to this student of this cohort (for all years).

2. Identifying new students to be included in the starting cohort.
   - To determine if a student is new, we need to look at the previous active enrolment records for that student. By default, the number of years used to see if a student had previous enrolments is THREE years. For example, if the cohort year is 2012-13, the algorithm will by default look at all active records in 2011-12, 2010-11, and 2009-10 when determining if the student is new.
   - When looking at the previous enrolments, if they didn't have previous active enrolments with the same combination of 'ASN-Provider-Credential Type-Program Type', then the students would be considered new.
   - All new students then become the starting cohort.

3. Grouping starting cohorts to form the completing cohorts for tracking and reporting.
   - Using the rule of "typical program duration + 3 years" and counting backwards to determine the starting cohorts to be included in a completing cohort.
   - If we are to track and report the 2018-19 completing cohort. Then we need to group the 2015-16 certificate starting cohort, 2014-15 diploma starting cohort, 2012-13 Applied & Bachelors starting cohort, 2013-14 Master starting cohort and 2010-11 Doctoral starting cohort.

Completing Cohorts	Counting Backwards	Starting Cohorts
2018-19 Certificate Completing Cohort	1+3 years	2015-16 Certificate Starting Cohort
2018-19 Diploma Completing Cohort	2+3 years	2014-15 Diploma Starting Cohort
2018-19 Applied & Bachelors Completing Cohort	4+3 years	2012-13 Applied & Bachelors Starting Cohort
2018-19 Master Completing Cohort	3+3 years	2013-14 Master Starting Cohort
2018-19 Doctoral Completing Cohort	6+3 years	2010-11 Doctoral Starting Cohort

4. Identifying completers from the completing cohorts within the completion timeline.
   - In this step, non-active records that have active records sharing the same key are added back for new students of the cohort year. Non-active records of subsequent years are kept for tracking completions.

- Starting with the cohort year, look for any records with the same combination of 'ASN-Provider-Credential Type-Program Type' listed with "Completion Status" values of '1'.
- Tracking completion in three steps:
  - STEP ONE:
    Track if a student in the completing cohort completed the initially enrolled credential-program type combination at the initially enrolled institution. Completers in step one will be marked and filtered, and those who remain in the cohort will be entered in step two.
  - STEP TWO:
    Track if a student completed the initially enrolled credential-program type combination at other institutions (except Journeyman). Completers in step two will be marked and filtered, and those who remain in the cohort will be entered in step three.
  - STEP THREE:
    Track if a student completed any credit parchment in the system (excluding Journeyman and non-credit). Completers in step three will be marked and filtered, and those who still remain in the cohort will be identified as non-completers.
- In all the three steps identified above, completion is tracked up to THREE years[1] after typical program duration[2]. Typical program duration is defined as follows:
  - Certificate: one year
  - Diploma: two years
  - Degree – Applied & Bachelor's: four years
  - Degree – Master: three years
  - Degree – Doctoral: six years

5. Further breakdowns of completion rates are calculated by Gender, Indigenous status and Age Groups.
   - Gender is defined by the gender value of a student in the cohort year. Records with "unspecified" gender value are not included in analysis.
   - Indigenous status is defined by the value of a student in the cohort of an academic year. Refer to step one of "Methodology".
   - Age is calculated as of October 15th of the cohort year. Age groups used in analysis are: Younger than 23 years, 23 years to younger than 29 years, and 29 years and older.

6. Calculations at the sector level will be identical with slightly different filters in the key.

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[1] We also tack completion one year after normal program length for comparison.
[2] If a new student enrolled in 20012-013, we will treat 2012-13 as year one in the process. For example, if this new student enrolled in a Bachelor's program in 2012-13, we will track up to 2018-19 for his/her completion.

Definitions:

Starting Cohort: It is made up of all new students/records actively enrolled in a combination of identifiers ('ASN-Provider-Credential Type-Program Type') during the cohort year.
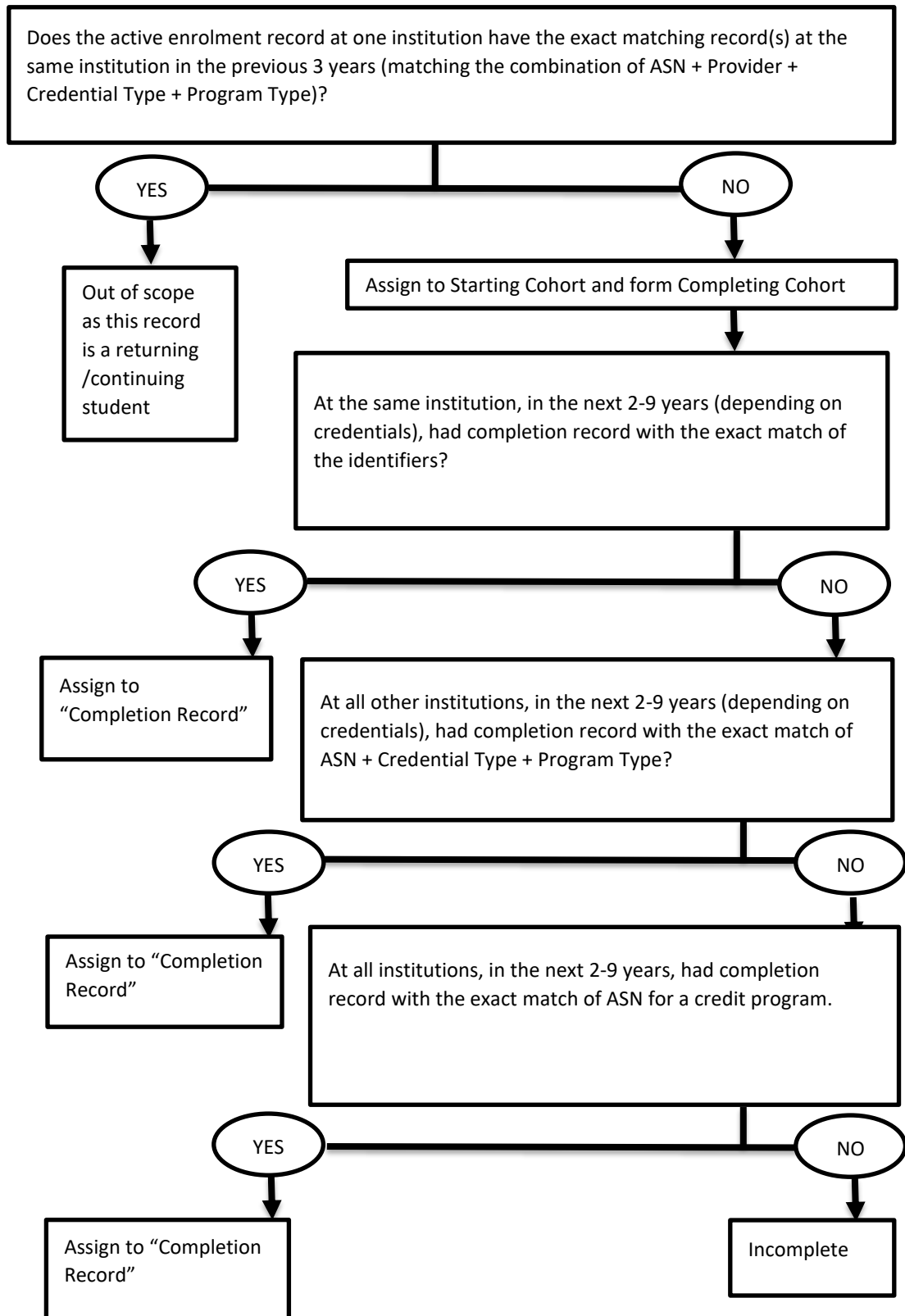
Completer: To be counted as a completer, the student must have completed a parchment program within the completion timeline.

Completing Cohort: It consists of starting cohorts that are supposed to complete their programs by the same year. For example, the 2018-19 completing cohorts consists of the 2015-16 certificate starting cohort, 2014-15 diploma starting cohort, 2012-13 Applied & Bachelors starting cohort, 2013-14 Master starting cohort and 2010-11 Doctoral starting cohort. These starting cohorts are supposed to complete programs by 2018-19.

Completion Rate: It refers to the percentage of students/records that completed any credential programs within the completion timeline given the number of students/records in the completing cohort by institutions & credential-program type combination.

New Student: A student is deemed to be new if they do not have a previous active enrolment record with the same combination of identifiers ('ASN-Provider-Credential Type-Program Type') in the past three years.

Processing Diagram:

Does the active enrolment record at one institution have the exact matching record(s) at the same institution in the previous 3 years (matching the combination of ASN + Provider + Credential Type + Program Type)?

YES → Out of scope as this record is a returning /continuing student

NO → Assign to Starting Cohort and form Completing Cohort

At the same institution, in the next 2-9 years (depending on credentials), had completion record with the exact match of the identifiers?

YES → Assign to "Completion Record"

NO → At all other institutions, in the next 2-9 years (depending on credentials), had completion record with the exact match of ASN + Credential Type + Program Type?

YES → Assign to "Completion Record"

NO → At all institutions, in the next 2-9 years, had completion record with the exact match of ASN for a credit program.

YES → Assign to "Completion Record"

NO → Incomplete

Tracking Guide for PHASE I and PHASE II.

Starting Cohorts - 2007   **Tracking Completions**

PHASE I	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018

Certificate - 2007 — 4 Years

Diploma - 2007 — 5 Years

Applied & Bachelors -2007 — 7 Years

Master - 2007 — 6 Years

Doctoral - 2007 — 9 Years
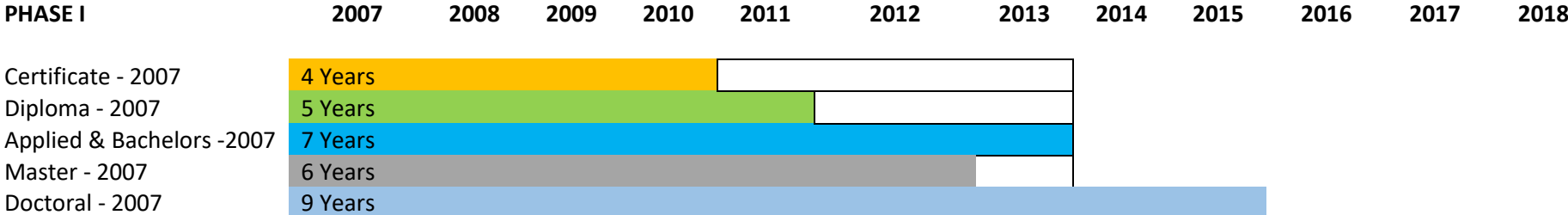
Completing Cohorts - 2018
PHASE II

2015 Certificate - 4 Years

2014 Diploma - 5 Years

2012 Applied & Bachelors - 7 Years

2013 Master - 6 Years

2010 Doctoral - 9 Years