



OPHRDC

The Ontario Physician Human Resources Data Centre

MTD DATA HANDLING SUMMARY

Version 4, revised August 27, 2021

Purpose

OPHRDC's role in Ontario's Medical Trainee Days (MTD) data cycle is to ensure data quality and compliance with the MTD Submission Specification, so that ultimately, the Ministry of Health (Ministry or MoH) funding team is provided with accurate, quality MTD data. OPHRDC's goals in facilitating the data review process are to provide consistency and fairness in MTD reporting across the province and across the quarters, as well as to reflect rotations completed by medical trainees and rotations provided by facilities as accurately as possible. The manner in which OPHRDC accomplishes this role and these goals continues to develop in response to issues as they arise.

The purpose of this document is to summarize both the process and the protocols with which OPHRDC manages the MTD data.

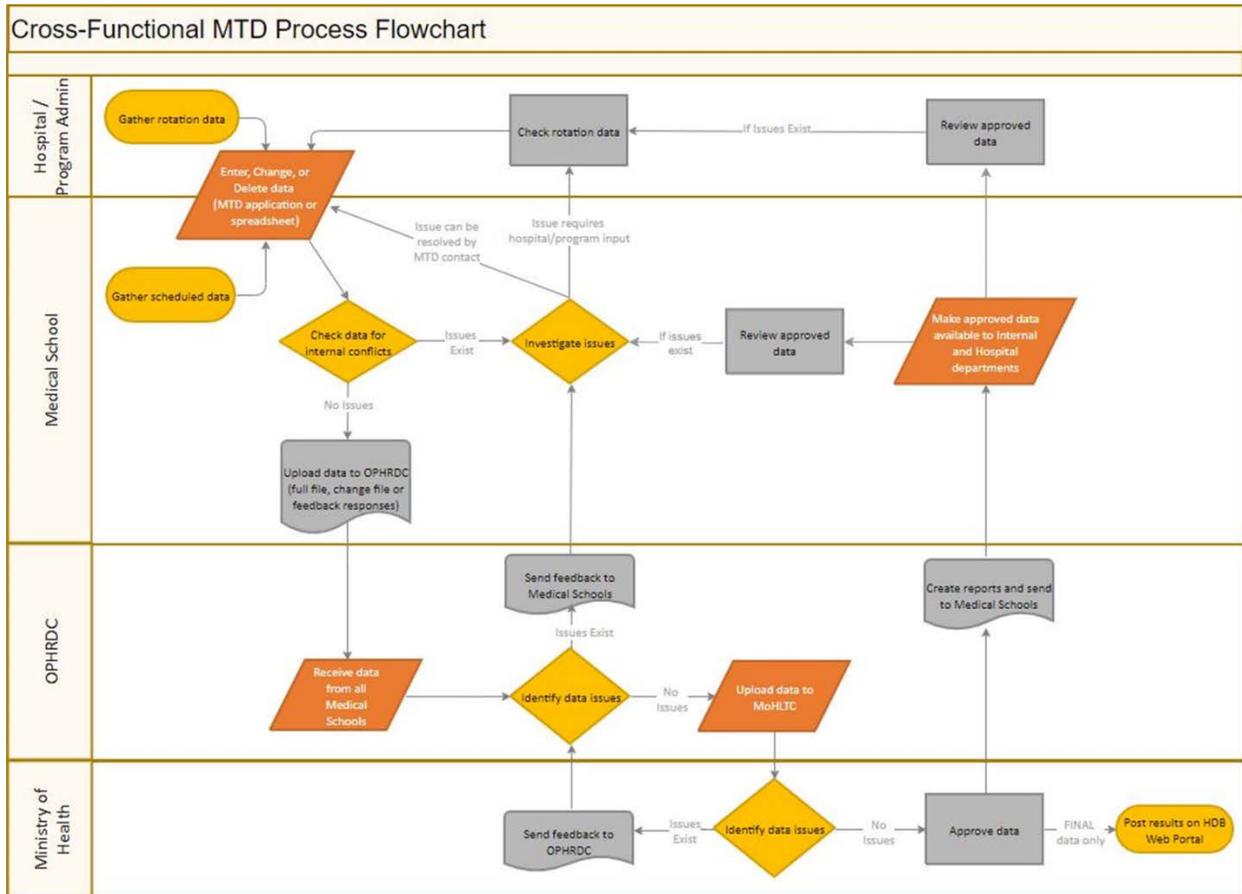
Process

After consultation with the MTD Advisory Group each year, the Ministry's Data Maintenance Unit (Health Data Branch) aims to publish the annual MTD timelines by April 30 and the MTD Submission Specifications by June 30. These documents provide the over-arching guidance for MTD data management.

Based on these specifications and timelines, Ontario medical schools (Submission Schools) generate quarterly MTD data from their registration records and merge/verify this data with the records of hospitals (Facilities) in their catchment area before providing it to OPHRDC. OPHRDC merges and cleans the data from all six schools before providing it to the Ministry. The Ministry then checks and approves the file. Once all 4 quarters have final Ministry approval, the quarterly files are merged and capped by OPHRDC, and one final annual file is submitted by June 30.

All data is transmitted through OPHRDC's secure SharePoint site. The compiled data is submitted to OPHRDC by each school as an Excel spreadsheet, imported into Access for processing, and then exported back to Excel for feedback to schools or submissions to the Ministry.

The above-noted process is graphically displayed in the following flowchart, and explained in further detail in the next sections.



Data classes and Feedback

There are three broad classes of data in the submitted MTD files: **values**, **identification** and **rotation**. The values data, such as service code, program code and facility code, includes all data for which the Ministry has defined acceptable values or codes. The identification data, such as name, CPSO number or student number and category code, includes all data which confirms the identity of an individual trainee. And the rotation data, such as start date, end date and number of days, includes all data which describes the time spent by a trainee at a particular facility.

The data for each of these three classes are checked in a logical order for all submissions. When processing identification data, valid category codes are required. This means that code values must be confirmed before identification data can be fully processed. When processing rotation data, all records are linked by trainee, so that any overlaps can be found in rotations from across the province. This means that the identification of each trainee must be confirmed before rotation data can be fully processed. So, values are checked before identification, which is checked before rotations.

Values data is compared to the tables of acceptable codes published in the Ministry Submission Specifications document. Values which do not meet the Ministry Standards are sent back to the schools for correction. To reduce the number of manual corrections over time, a perpetual Facilities table is used to standardize non-Ministry hospital site names provided by some schools.

Identification data is first cleaned and ‘trimmed’ to ensure it can be accurately compared to previous data. Newly submitted data is linked to previous identifier data in a perpetual Identifiers table, as well as CPSO and MINC registry data, and Ontario undergraduate and postgraduate registration data in order to identify previously submitted and new trainees with a high degree of confidence. Multiple queries are used to find names with more than one identifier and identifiers with more than one name. OPHRDC uses assumptions outlined in the following Identification Protocols section to make or suggest changes which bring consistency to identifiers. Problem identifiers such as more than one student number which appear to refer to the same trainee, or invalid CPSO number or MINC are sent back to the schools for clarification and/or correction.

Rotation data must follow logical rules. The general expectation is that End Date-Start Date + 1 would equal Number of Days, although there are numerous valid exceptions. For example, trainee time in split or longitudinal rotations will result in fewer days than available in a block, based on percentage of time spent at specific facilities. Potential rotation issues include dates which are outside the quarter, and number of days which are greater than the calendar days available for that time period. Records are linked by trainee (unique ID from Identification process) to look for duplicate or overlapping records, which may or may not cause the total number of days claimed for that trainee to exceed the number of days available in the quarter. These result in single-school or multi-school overlaps.

The values, identification, and rotation questions resulting from these checks are provided as feedback in Excel workbooks to individual schools via the OPHRDC SharePoint site. In cases of uncertainty, the school is provided with both original values and OPHRDC’s suggestions, so they can verify whether any changes are correct. Schools consult both with their internal trainee rotation/evaluation data as well as with their hospitals and other schools to resolve issues.

All changes need to be made in the individual school’s internal database because otherwise the same issues will be re-flagged in future data submissions, or when submitted Ministry data is checked against internal data. Feedback responses must also be provided on spreadsheets, as OPHRDC uses this information to update their perpetual Facilities and Identification tables. If there is no explanation on the feedback spreadsheet and the discrepancy remains in the data, there is a good chance that OPHRDC will continue to send the same questions back to the school.

[Submission Cycle from Schools to OPHRDC](#)

The expectation from OPHRDC is that all schools will submit their entire file for each quarter to OPHRDC multiple times. Resubmitting the entire file reduces the likelihood of

misunderstanding or transpositional errors by either party and helps to ensure that the data submitted to the Ministry is as accurate as possible. All but one school has created internal record identifiers for each record in their MTD database, which allow changes to records to be tracked from iteration to iteration, as well as allowing schools to easily delete or correct records in their own file as needed.

A detailed timeline similar to the one shown below is circulated by OPHRDC to all medical schools at the beginning of each new MTD year. The medical schools use this timeline to inform their reporting hospitals of data due dates for the key timepoints in this process.

MTD 2020-21 Data Submission Timeline								
INITIAL DATA					FINAL DATA*			
Last Day of Quarter	<i>Submission #1 to OPHRDC</i>	<i>Submission #2 to OPHRDC</i>	<i>Submission #3 to OPHRDC</i>	<i>OPHRDC Submission to Ministry</i>	<i>Submission #4 to OPHRDC**</i>	<i>Submission #5 to OPHRDC</i>	<i>OPHRDC Submission to Ministry</i>	
Q1	30-Jun-20	2-Oct-20	6-Nov-20	20-Nov-20	1-Dec-20	10-May-21	4-Jun-21	11-Jun-21
Q2	30-Sep-20	4-Dec-20	13-Jan-21	26-Jan-21	5-Feb-21	10-May-21	4-Jun-21	11-Jun-21
Q3	31-Dec-20	8-Feb-21	9-Mar-21	23-Mar-21	1-Apr-21	10-May-21	4-Jun-21	11-Jun-21
Q4	31-Mar-21	3-May-21	17-May-21	25-May-21	1-Jun-21	16-Jun-21	25-Jun-21	30-Jun-21

*No new data will be accepted after Submission #4 (except as required to resolve conflicts).

Pre-submission

During the quarter itself, schools and facilities are tracking scheduled and attended rotations for each medical trainee. Once the quarter is finished, that information is compiled and checked by the schools. Known issues are resolved before each submission to OPHRDC.

Submission #1 to OPHRDC - First Quarterly Iteration

The first quarterly submission has been checked and verified by each school individually, but when OPHRDC compiles the records across the six schools, issues especially related to identification of trainees and overlapped rotations become very evident. Schools are notified of these discrepancies and overlaps. It is understood that all records may not yet be included in this submission, but this first submission allows basic issues to be identified.

Submission #2 to OPHRDC - Second Quarterly Iteration

In the second submission of their entire quarterly file, schools provide corrected values in addition to confirming or over-riding various changes on the feedback spreadsheets. This is an opportunity for schools to delete or correct records as needed, and to submit additional records which have been received late from their facilities. OPHRDC uses internal record identifiers to compare records to the first submission to see which have been changed, deleted or added. Changes and comments from feedback responses are tracked with each record. The

expectation is that as much as possible, all quarterly records are included in this second submission. New issues are often identified in the review of this iteration's data.

Submission #3 to OPHRDC - Third Quarterly Iteration

This third submission of a school's entire file should be as clean as possible. OPHRDC checks to ensure that all previous values, identification and rotation issues have been resolved. Any new or remaining questions are managed by phone or file to affected schools. OPHRDC completes a final review before submitting the provincial quarterly master file to the Ministry by the Initial Submission to Ministry date. OPHRDC submits to the Ministry only MTD data which has originated from or been verified by the Submission Schools (except for cases which are clearly identified in the later Protocols section).

Submission Cycle between OPHRDC and the Ministry

MTD data is submitted to the Ministry 3 times for each quarter:

1. Initial Data
2. Final Data
3. Annual Data (capped)

When data is submitted by schools to OPHRDC, a permanent record identifier is created for each record. This record identifier is used by the Ministry to track changes, deletes and additions from one submission to the next.

OPHRDC Submission to Ministry - Initial Data

At the Ministry level, the Initial data is loaded to the **Load and Validate** application, which checks Submission Specification rules and flags student names if they don't remain consistent from one MTD year and/or one MTD quarter to the next (historical identification data is held in their Students table). Any initial feedback is provided to OPHRDC in an Excel spreadsheet.

OPHRDC resolves student name flags, and creates feedback files for the schools as needed for the remaining issues. The feedback is distributed to the schools, and rapid revisions are requested. As soon as all feedback is managed, OPHRDC uploads the Initial data again, and the Ministry either provides additional feedback or initial approval. At this stage, data can be resubmitted multiple times with no restrictions, as there is a clean load each time.

Once the file is clean, data is then loaded to the Ministry's **Validate Data and Save to Database** application which runs all of the same queries as the Load and Validate application, but also retains the data.

As soon as the Ministry provides initial approval, OPHRDC creates reports and record files for the schools and hospitals. OPHRDC provides the data to the schools, and schools are to

distribute the data to their hospitals. Both parties are asked to review the data for any missing, deleted or changed records.

OPHRDC Submission to Ministry - Final Data

This review of the approved Initial data may result in final data changes which are provided to OPHRDC by the schools either with a full upload or using a Ministry Changes Excel template (for the school without internal record IDs). OPHRDC then completes a similar process as in the earlier [Submission Cycle from Schools to OPHRDC](#) with the revised data, being sure to specifically track any deleted records. Issues are resolved by schools, and the final quarterly provincial data is then submitted to the Ministry. After any new issues with the Final data are identified and confirmed to be resolved, the data receives final Ministry approval. Schools/hospitals have already thoroughly reviewed this final data, so there is no need to circulate it.

After this final data approval, any data changes requested by the schools or their hospitals require a reason beyond the control of one of the parties, not just that they forgot to submit.

Annual Ministry Submission, Initial and Final Approvals

At the end of June after the data for all quarters has received final Ministry approval, OPHRDC compiles the records from all quarters into one annual file. The records are linked by trainee (unique ID) to find the total number of days submitted for each trainee (called SourceDays). When the total number of days for the trainee is less than or equal to the Ministry's annual cap of 275 days (276 days for a leap year), no change is made to the SourceDays column. However, when the total number of days for the trainee exceeds the Ministry's annual cap, OPHRDC applies a capping formula $[(\text{SourceDays}/\text{SumofSourceDays}) * 275]$ to proportionately reduce the number of days for all of that trainee's records and bring them within the Ministry's annual cap.

Unfortunately, while applying the capping formula brings the total number of days for all affected trainees to no more than 275 days, it also results in records where the number of days contains more than 4 decimal places (the maximum precision allowed in the Ministry Submission Standards). Removing the additional decimal places with simple rounding results in the total number of days for some trainees ending up greater than 275 days, and other trainees less than 275 days. In order to have the least impact on the total number of days, the individual days are shortened to 4 decimal places in two different ways: bankers rounding [RoundDays] and truncating (or rounding down) [TruncDays].

The number of days to be submitted to the Ministry is then determined according to this algorithm (275 is used here to represent the annual cap):

- when $\text{SumSourceDays} < 275$ or 275, use SourceDays
- when $\text{SumRoundDays} < 275$ or 275, use RoundDays
- when $\text{SumRoundDays} > 275$, use TruncDays

Once the capping formula has been applied, OPHRDC submits the annual provincial file to the Ministry for Approval. This must occur before June 30, so that any errors can be identified and resolved by June 30 at the latest. After June 30th, the MTD data is forwarded from the Data branch of the Ministry to the Funding branch of the Ministry, and used for HBAM funding calculations.

Multiple reports and analyses are completed, and the final annual data is then distributed by OPHRDC to schools, and from schools to hospitals, by the middle of July. All schools receive an exact copy of the records that were submitted on their behalf. Schools are directed to review and to forward these final capped annual files to their hospitals for their records. The Ministry also posts the results to the HDB Web Portal at about the same time.

As per the Ministry's MTD Submission Specification,

“The Annual MTD file as submitted/approved on June 30 each year is absolutely final. However, significant errors discovered after that date should be reported to the Ministry who will take the information into consideration when assessing funding impact. Hospital errors (ie. incorrect service codes, transposed dates) will not be corrected. Non-hospital errors (ie. systematic technical issue at school level) may necessitate limited resubmission on a case-by-case basis.”

If the appeal is successful, data will be resubmitted by OPHRDC to the Ministry.

Protocols

As previously stated, “OPHRDC submits to the Ministry only MTD data which has originated from or been verified by the Submission Schools (except for cases which are clearly identified in the later Protocols section)”. Those distinct exceptions are:

- student number changes where the name, school attended and category are the same (or very similar)
- legal name standardization for 3 types of trainees: out of province/OOC undergraduate trainees with the same student number, Ontario undergraduate trainees to match the UGME names, or postgraduate/fellow trainees to match the CPSO names
- school attended is automatically corrected to match student number (for undergraduate records only)
- facility name inconsistencies (spacing, punctuation) where the intended name is evident
- category code inconsistencies where the Identification table was able to provide the correct category

As of Q1 in 2015-16, schools are aware of these automatic changes, so details of these changes are not included in each school's feedback.

Identification

The Ministry requires that all records for the same trainee contain identical identifiers:

- last name, first name
- CPSO number for postgraduate (P or F) trainees or student number for undergraduate (U) trainees
- category code (although single-level category transitions are allowed and consistency in this is NOT tracked by the Ministry).

Since there are multiple instances in which the records for what is apparently the same trainee contain a variation on at least one of the above mentioned identifiers, coming up with identical identifiers can be a challenge.

OPHRDC maintains a perpetual Identification table containing identification information for all trainees from 2015-16 (and for many trainees from 2014-15). Records are added to/revised in this table with every iteration of data, as well as with annual UGME/PGME and quarterly CPSO/MINC updates. These updates allow OPHRDC to ensure that MTD records are identified and linked as accurately as possible.

There is currently no fixed identifier in the MTD data which is common to all trainees with which to confirm their identity. As per the Ministry Submission Standards, there are actually 3 potential identification numbers: MINC, CPSO number and student number. Because the Ministry is not yet a Licensed User of MINC, no MINCs are submitted to them, although schools are providing them as often as possible. CPSO number is mandatory for postgraduate/fellow trainees, since these are the only ones to whom CPSO numbers are assigned. Student number is mandatory for undergraduate trainees. CPSO numbers submitted for undergraduate trainees, or student numbers submitted for postgraduate trainees are not verified or used in the Ministry submission.

The hope was that MINC would be the fixed common identifier, but there is no way for out of country (OOC) undergraduate students to obtain a MINC, so this will likely be an ongoing issue. As a substitute, OPHRDC has created an internal Unique ID for each trainee which corresponds to the Primary Key record number for that trainee in the perpetual Identification table. It is this Unique ID field which is used to link trainee records. This helps to ensure that MTD days are not double-counted, as a trainee retains the same identifier when transitioning from U to P (or F).

Verifying identity remains a challenge for U trainees who attend a Canadian medical school (outside of Ontario), as there is no easy way to independently verify the identifiers (short of contacting each home school). And verifying identity is even more of a challenge for U trainees from out of country (OOC), as there is NO single body which assigns OOC student numbers or tracks their categories, and so no way for independent verification. The issue of independent verification of the identity of U trainees from a Canadian medical school or from out of country will remain a significant issue until a MINC can be assigned to all U trainees.

Additionally, the student number for Ministry purposes is actually a combination of a 3 letter prefix denoting the school attended, followed by the real-life student number (may be numeric or alphanumeric, depending on the trainee's school and category). The student number is intended to be the one assigned by the student's home school, but a number of schools assign and may end up using their own number. This means that there is potential for MTD student number inconsistencies either due to error in identifying the correct real-life student number or error in identifying the correct school attended.

OPHRDC uses multiple queries to uncover identifier discrepancies for what appears to be the same trainee and brings them to the attention of the submission schools, often making suggestions as to which data may need to be changed to bring all the records for an apparent single trainee into conformity, based on various assumptions (outlined later in this document).

The following protocols have been put in place to clearly identify the assumptions and criteria which underlie how OPHRDC suggests changes to identification data (CPSO number, student number/school attended, last name, first name and category code) which schools have submitted.

MINC

The MINC should be an ideal key identifier for all MTD records, as it is assigned to all medical trainees by only one authority with an accessible registry, and once it is assigned, it remains with the trainee for life. Unfortunately, multiple cases have been identified where the same trainee/physician has been assigned more than one MINC, and there is currently no affordable way for out of country (OOC) undergraduate students to obtain a MINC.

Starting with the 2015-16 MTD year, schools were asked to provide Date of Birth (DOB) and MINC (Medical Identification Number for Canada) for as many records as possible. DOB is required to obtain and/or validate the MINC.

All trainee records from the Identification table with a DOB (and whose MINC has not yet been validated by MINC-NIMC) are submitted in a Match Request to MINC-NIMC on a quarterly basis. Confirmed Match Results are used to establish the correct MINC for each trainee, and MINCs obtained from CPSO or schools are then compared to this 'correct MINC'. Various checks on the MINC-NIMC website are used to confirm the correct MINC in cases of discrepancy. Duplicate or incorrect MINCs are communicated to MINC-NIMC, CPSO or the school as appropriate.

CPSO number and Ontario student numbers

The CPSO number and Ontario student numbers work well as fixed identifiers, because they are assigned by only one authority with an accessible registry. Once a CPSO number is assigned, it remains with the trainee for life.

For P trainees, conflicting CPSO numbers and names can be independently verified using CPSO registry files (updated quarterly since 2015-16). For U trainees from Ontario, discrepant identifiers can be independently verified using undergraduate registration data (provided to OPHRDC by each Ontario medical school each fall). These registries enable OPHRDC to identify and delete U records which are submitted for Physician Assistant rather than medical trainees.

If the submitted number does not match the name in the registry OR the submitted name does not match the number in the registry, then OPHRDC attempts to find the correct number using CPSO online or a question to the School Attended. If the correct number is not found, this is brought to the attention of the Submission School.

Assumption

The basic assumption is that the registries (MINC, CPSO, UGME, PGME) are correct. Registries are validated with each update, and any inconsistencies (esp. with MINC) are corrected before use for MTD purposes.

Criteria

The criteria which OPHRDC uses to suggest a replacement number are agreement between the registry and the MTD file regarding:

- first AND last name (must be the same or very similar – may match with former name, have additional or fewer names, order of names or exact spelling of names may differ)

- DOB (if available)

AND matching at least 1 of the following:

- Level/Category

- School Attended (ie. CPSO primary practice location in line with MTD school attended)

Suggestion

When a number which meets the above criteria is available, the submission school will be provided with a suggested number. Their choices are to accept the suggestion and use it in their resubmitted file, to provide an alternate number, or to remove that trainee's record(s) if no valid number can be provided.

Non-Ontario student numbers

Student number is a variable identifier for out-of-country students especially, because it is assigned multiple times by multiple authorities with no registries (at least none accessible to OPHRDC) to use for validation purposes.

The following protocol outlines how records are added to the perpetual Identifier table.

Assumption

The basic assumption is that the student number must be chosen from the ones provided in the data. If the student number for a trainee must be changed (ie. a student previously identified as Out Of Country (OOC) is found to be registered at a Canadian school), the previously used student number must be tracked in the Identification table.

Criteria

Records are considered to be related if they contain the same:

- first/last name combination (or very similar)
- school attended (or combination of records with one Canadian school and OOP/OOC)
- category code (or logical progression)
- DOB (if available)

If no related records are found, or all related records contain the same student number, the new record is considered valid and added to the U lookup table. If related records contained student number discrepancies, then a common student number is assigned or suggested as outlined below.

Suggestion

Assign the common student number according to this priority:

1. student number which has been previously submitted to the Ministry [UNLESS the school identifier prefix has changed (ie. a student previously identified as OOC is found to be registered at a Canadian school).]
2. student number with Canadian school prefix rather than OOC prefix
3. most frequently used student number
4. lowest/shortest number that is longer than 3 digits

In cases where there is no valid student number (3 letters followed by 1-12 alphanumeric characters) to assign, no suggestion is made and records are sent back to all involved schools for clarification.

In cases where the assigned student number has a different school prefix than the currently submitted student number, the submitted and assigned student numbers are sent to the school. The submission school's choice is to accept the assigned student number (note this on the spreadsheet and use it in their resubmitted file), to provide an alternate student number, or to remove that trainee's record(s) if no valid student number can be provided.

In cases where the assigned student number has the same school prefix but different alphanumeric values than the currently submitted number, the submission school is not

notified. There is no way for the school to verify the choice and so this sort of notification is a waste of time.

All student numbers used in the above verification process are retained in the Identification table (assigned number is 'legal', unused numbers are 'other').

School Attended

School attended is not fixed since trainees can switch between schools during the year (especially for P and F). There is currently no easy and consistent way to track whether the school attended code is correct for P and F trainees.

When MTD data is originally submitted to OPHRDC, the school attended and student number invariably match for U trainees, as the school attended code has been used to create the student number. However, through the course of the above-noted student number verification process, the student number may have been changed in a school's file without necessarily changing the school attended code. OPHRDC checks for these inadvertent errors just before the initial submission of quarterly data to the Ministry, and automatically uses the 3 letter prefix of the student number to update the school attended field in cases where they do not match.

Legal name

The Ministry requires that one 'legal name' be used for each trainee throughout the year. The Ministry's legal name is composed of a first name field (which may or may not include a middle name) and a last name field. However, what is considered the trainee's legal name could differ based on what was submitted for the trainee's passport, birth or marriage certificate, CPSO or MINC application, or school registration forms (among other potential options). Because of these various name sources, first and last names captured in MTD data are often inconsistent.

OPHRDC had anticipated that the legal name would be set as the name registered with MINC. However, since MINC numbers will never be available for all trainees, the standard definition of legal name to be used to identify MTD trainees will remain as follows:

For P, F and Ontario U trainees

The legal name for P and F trainees is the name as registered with CPSO. The legal name for Ontario U trainees is the name as registered with their medical school. If this name changes from a previous year, the legal name in the OPHRDC Identification table will be updated to the most recent one.

OPHRDC links the numbers in the Identification table to the numbers in the previously noted CPSO or undergraduate registry and uses the registry first and last names (after logical verification).

For Non-Ontario U trainees

The legal name for non-Ontario U trainees is the most complete name available.

OPHRDC creates a legal name for trainees new to the Identification table based on all names provided for a single student number. Where needed, OPHRDC combines names in the following manner to create the most complete name:

- all special characters (É, È, Ë, Ô, Ö, Ç) are converted to regular English characters
- parentheses and periods are removed
- where the only difference is a space or a dash the most common version is used
- where it's an obvious typo in comparison to other records, (ie. Mahmood vs. Mahmood) the most correct version is used
- where one name is a short-form of the other [ie. Lu vs. LucyAnn OR Susan vs. Susan (Susie)], only the long-form name is used (remove brackets, do not include both names)
- where there is no similarity in the names, the records are sent back to the schools to confirm the student numbers (no changes made)

If additional new names are submitted for a trainee already in the Identification table, the first established legal name will continue to be used - UNLESS the name has legally changed, as in the case of marriage. If the identity of the trainee is in dispute, the submission school retains the right to resubmit the record with an alternate student number.

Category

Category is the name used in the Ministry Submission Standards for what is more commonly known as level, and includes F (fellow), U2-U6 as U (undergraduate) options and P1-P8 as P (postgraduate) options. Note that the following previous options are no longer valid:

- U1 and U2 for all but MAC/CAL (PreClerks) were removed in 2016-17 (no longer reported at all – have never been included in funding formula anyways),
- IMG was removed in 2015-16 (reported as P or F instead),
- AP was removed in 2014-15 (reported as IMG instead).

Category was not previously carefully tracked by facilities, and so discrepancies in the MTD data are the norm. The correct category for a trainee also changes at least once during each MTD year, usually on July 1 for P (F) trainees and around September 1 for U trainees. There are many exceptions to those rules, but the general expectation is that a trainee will not be in more than 2 categories per MTD year, and that for U trainees the categories must be consecutive. These expectations will likely change as CBME comes into effect.

The Ministry does not report errors related to Category, so it matters mostly as a basis for our MINC Match Requests, to confirm PreClerks, and so end-of-year reports have some validity.

Because of the potential for discrepant categories, OPHRDC automatically assigns category codes from the Identifier table according to the following criteria:

- The trainee's identity must be confirmed before assigning a category.
- For P or an Ontario U trainee, use the highest category recorded in the UGME/PGME registries for that quarter. For example, if the start date for U4 is on September 1 (partway through Q2), use U4 as the level for all of Q2.
- For a Canadian or OOC U trainee (or a trainee not in the U or P registries), first use the category previously confirmed with an Ontario medical school, then use the highest category submitted in this iteration, and if still blank, then use the category from the most recent previous iteration.
- If an unexplained category jump occurs, or category is blank after the above steps, all records for the affected trainee will be sent to all involved Submission Schools, in order for them to confer and determine the correct category or categories.

In 2014-15, Submission Schools agreed not to be notified of changed categories on a record by record basis. They see the corrected category when they receive their copy of the file that was sent to the Ministry.

Facility and Site

OPHRDC created a perpetual Facilities table following 2015-16, containing identification information for all current and previous facilities. Records are added to/revised in this table with every iteration of data, as well as with annual Ministry (Submission Standards) updates. These updates allow OPHRDC to ensure that MTD records are identified and linked as accurately as possible.

There are numerous cases where Facility Names in the MTD Submission Specification table contain unusual spacing or punctuation, but schools submit the Facility Name with more usual spacing or punctuation. OPHRDC automatically corrects these Facility Name inconsistencies (spacing, punctuation) where the intended name was evident.

In recent years, there have been many cases where multiple hospital sites have been amalgamated into one facility. Following the final submission of MTD 2014-15, it became evident that there were certain instances in which MTD records needed to be tracked at the site level (as well as at the facility level).

In the summer of 2015, the option to use the Ministry's Master Number for this purpose was explored and found to be an impractical solution for MTD, since the master number is based on bed type and MTD data is based on care type. The option to use a standardized site code/name was not practical for all schools as it would create more work than value to change their pre-existing lookup tables.

As a compromise position, schools have the option to submit Site Code/Name in addition to or instead of Facility Code/Name. In these cases, OPHRDC uses a perpetual Facilities table to automatically submit to the Ministry the Ministry-approved Facility Code/Name in place of the Site Code/Name, but to retain the site information for reports and communication to the schools and hospitals. The Facilities table is also used to populate a Report Site Code/Name for each record (which allows consistency in reports), and to flag Facilities which reported MTDs in the previous year, but have not reported MTDs for the current quarter.

Service Code

There were 2 cases where Service Codes in the 2015-16 MTD Submission Specification were updated without schools' full awareness (so OPHRDC automatically replaced OBST with OBGY and PEDS with PEDI). OPHRDC brought this to the attention of schools, who had their internal lookup tables updated by 2016-17.

Records reported as UGME instead of a specific service code are allocated to the care type that matches the facility type. In most cases, this will be Acute Inpatient / Day Surgery. If hospitals want the credit to be allocated to another care type, a more specific service code must be provided. Because of the potential impact on funding for hospitals, these records are also flagged to schools once per quarter.

One hospital has requested that unexpected Service Codes for their facility be flagged.

Intentional Duplicates

There are 2 types of Duplicates, Intentional and Problem. In either case, Ministry records will show all fields as identical in 2 (or more) records for the same time period (+/- SourceDays).

Intentional Duplicates are records where every field matches except site name/code OR rotation code (+/- # Days). These are cases where we (or the school) has more information than we send to the Ministry. We know they are not actual duplicates, but from the Ministry's perspective, they look like duplicates. We used to merge these for the Ministry, but are now able to just flag them as intentional duplicates (IDUPs).

Problem Duplicates occur when the same student is claimed twice for the same experience: duplicate records where every key field matches (+/- # Days). This may occur because the same trainee was originally given more than one student number, because the school has additional information which differentiates the records, or simply because data was entered twice. These duplicates must be clarified or removed from the file.

Overlap Resolution

Starting in Q1 of 2015-16, the following overlap resolution principles were agreed upon.

- Determination of correct rotation data (where the trainee actually was).

1. The gold standard is the trainee’s verbal or e-mail confirmation.
 2. If this is not possible, use the hospital’s records or preceptor evaluations.
 3. If these are not available, use the school’s elective request or master schedule.
- Identification of which school should take the initiative and final responsibility to resolve the conflict.
 1. If the home school (School Attended) is involved in the conflict, the onus is on them to contact the trainee to determine where the student actually was. The home school then notifies the other school(s) of the trainee’s response, and any necessary changes (or appeals) are made.
 2. If the home school is out of province/OOC, or the home school is not involved in the conflict, then:
 - The school with the earliest start date is responsible to contact the trainee or otherwise initiate the conflict resolution.
 - If both/all conflicted rotations start on the same date, then the school with the longest rotation is responsible.
 - If both/all conflicted rotations start AND end on the same date, then the alphabetically first school is responsible.
 - Clarification of how changes are made to conflicted records.
 1. It is the responsibility of the Submission School to make any necessary changes to their own records so clear communication and thorough follow up is essential.
 2. Other schools involved in the conflict are welcome/encouraged to note on their spreadsheets any suggested or agreed-upon changes for future reference, but OPHRDC can only process changes from the Submission School for that record.

Changes over Time

The first few years of the MTD process between schools and OPHRDC saw multiple changes to the MTD process, which have impacted the nature and/or comparability of the data. For example, hospital mergers make direct comparisons of multi-year data very difficult. Other changes which are important to keep in mind in any multi-year analysis of MTD data are contained in the chart below.

MTD year	Protocol change	Process change	Data impact
2014-15	Data collection done by schools (instead of hospitals),	Comparison of registration data to hospital data; Increased attention to detail	New fields captured (ie. Submission School), New details captured (ie. School Attended – OOP now specific school)

	Quarterly rather than annual data collection, data processing done by OPHRDC (instead of the Ministry)	Thorough and consistent provincial reconciliation. Negative values and unacceptable codes managed before submission, so fewer rejected records.	Possible increase in MTDs for some Facilities
	Annual capping applied only after data is clean (previously capping was applied even in cases with as many as 729 claimed days!)	All data cleaned (ie. duplicates removed) before capping so max claimed days is 365/366	Possible reduction in MTDs for some Facilities – MTDs more accurately reflect actual time spent and MTDs more fairly allocated across hospitals
	Trainee identification tables which merge multiple sources	Identify/remove duplicates where same name is submitted with multiple student numbers	Reduction in MTDs for some Facilities
	New Service Codes (ie. ADDM, ADOM, CPHA, OCCM, PHPM) and Revised Service Codes (4 instead of 3 letters)		Data not directly comparable to previous data
	Revised Category Code (AP now included in IMG)		Data not directly comparable to previous data
	Revised Program Codes, Dental trainees no longer included		Data not directly comparable to previous data; Reduction in MTDs for some Facilities
2015-16	Site Codes allowed	More detailed tracking for merged hospitals especially	Detailed site reporting available
	OMFS Program Code added, Dental trainees once again included		Data not directly comparable to previous data; Increase in MTDs for some Facilities

	Removed Category Code (IMG now included in P/F)		Data not directly comparable to previous data
	McMaster appeal – data missing for FAMd split rotations at community hospitals (anticipated records for 397 students)	281 New Records with a total value of 1387.9351 days. Other records were re-capped, with overall 1280.7949 day increase in provincial MTD count	Published 2015-16 Summary Report will not be revised, although the revised data will be held by the Ministry for future reference
2016-17	PreClerk rotations no longer submitted to the Ministry	PreClerk rotations are removed from the data prior to submission	Less confusion regarding 2 sets of numbers – all submitted MTDs are now included in the funding formula
	U2 Calgary rotations now counted in HBAM formula	U2 CAL rotations left in submissions	Increase in MTDs for some Facilities
2017-2021	Minor clarifications but no significant changes to the MTD protocol	Ongoing updates to program and facility codes as needed, some improvements in efficiency r/t SharePoint collaboration for multi-school overlaps	No significant impact