**Activity Level Reporting**

**Metric Methods**



**ALR Metrics for Radiation Therapy**

**DRAFT**

May 2014

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# Background

Cancer Care Ontario (CCO) developed the Activity Level Reporting (ALR) data set in 1992 to collect data about patient-care activities that occur in the cancer centres (Integrated Cancer Programs). Over time, this reporting was also expanded to other facilities outside of the cancer centres. This data is used by CCO to determine volume-based funding, to assess performance, to inform quality improvement initiatives and to populate the Ontario Cancer Registry. It is also a rich data set for cancer-related research conducted by CCO and external researchers.

The primary scope of ALR data elements collected is systemic and radiation therapy services (for facilities where this is applicable) and outpatient oncology clinic visits. Each record conveys a key activity or event performed, as well as related dates and details. Records submitted are at a patient level (including personal health information), but are activity/event-centric rather than patient-centric.

Facilities submit a month-long batch of ALR records to CCO every month. There is a one month lag between the month of submission and the month described in the data. For instance, July data is submitted in September and September data is submitted in November.

The data is submitted in a \*.csv file format. The data is uploaded by the centre to a web based application that performs submission logging and error checking. If the file passes several stages of sequential error checking (at the file and record levels) it is retained by CCO for further processing. Otherwise, the centres are automatically notified that the file needs to be corrected and resubmitted.

# Purpose of this Document

The purpose of this document is to explain how CCO processes ALR data submissions to prepare the data for reporting and analysis. The first section below will provide details on key metrics that CCO utilizes for reporting volume-based and performance metrics. An explanation of the logic flow and business rules applied by CCO to each record to determine whether it should be included in these metrics is provided in section two.

# Data submitted to CCO and how it is used to calculate metrics

CCO conducts regular reporting as well as ad-hoc analyses to manage and guide the cancer system’s performance. Business rules are automatically applied to the monthly ALR updates to calculate metrics for radiation volumes and wait times.

Radiation planning and treatment begins when a patient visits a hospital in preparation for radiation. Planning visits include preparations done in the Mould Room and for Simulation, Clinical Mark-up, and Dosimetry. Treatment visits include the type of radiation used, (i.e. Brachytherapy, Megavoltage, Superficial and Orthovoltage), including associated radiation fractions for each treatment. Radiation case level metrics include New, Total and previously treated patient case volumes.

The table below lists the key metrics generated and the table/entity they are based on. (Note: Following sections will explain how additional data elements submitted are used as criteria to determine which records should be included or excluded in performance metrics.)

| **Metric** | **Title** | **Definition** | **Table/Entity Derived From** |
| --- | --- | --- | --- |
| C1R | New Radiation Case | A case is an instance of a patient with a specific diagnosis at a specific submitting hospital. A new radiation case is counted when a patient has a first clinic visit with a physician (*see appendix 2 for complete list*) for a specific diagnosis at a specific submitting hospital. | Clinic Visit |
| C2R | Radiation Follow up Visits | All radiation clinic visits with a physician (*see appendix 2 for complete list*) that are not New Radiation Case Visits. | Clinic Visit |
| C3R | Total number of radiation clinic visits | The sum of the new radiation case visits and the follow up radiation visits. C3R = C1R + C2R | Clinic Visit |
| R1 | Radiation Planning Visits - Mould Room | Mould/immobilization activity visits. | Radiation |
| R2 | Radiation Planning Visits - Simulation | Treatment simulation visits, this includes conventional simulation, CT simulation, and emerging imaging methods. | Radiation |
| R3 | Radiation Planning Visits – Clinical Mark-up | Clinical mark-up visits that require mark-up activities only. | Radiation |
| R4 | Radiation Planning Visits – Planning and Dosimetry | Radiation visits including dosimetry and planning activities that occur outside of Mould Room, Simulation, Clinical Mark-up and Treatment visits. | Radiation |
| R5 | Radiation Review Visits | A review visit with the radiation oncologist, usually occurring weekly during the period of treatment. A radiation review is counted only if it is not the first clinic visit with a radiation oncologist. | Clinic Visit |
| R6\* | Total Radiation Planning & Review Visits | The sum of Mould Room, Simulation, Clinical Markup, Planning and Dosimetry and Patient Radiation Review Visits (R1 + R2 + R3 + R4 + R5) | Radiation |
| R40 | Total Radiation Planning | Total Radiation Planning. Some NHPIP codes not counted under R6 are counted under R40. This metric was created in 2008. | Radiation |
| R23 | Radiation Treatment Visits - Cobalt | A treatment visit where radiation treatment is given with a Cobalt treatment unit. | Radiation |
| R24 | Radiation Treatment Visits – Linear Accelerator | A treatment visit where radiation treatment is given with a Linear Accelerator treatment unit. | Radiation |
| R25 | Radiation Treatment Visits – Megavoltage | A treatment visit where radiation treatment is given with a Megavoltage treatment unit. This is the sum of the Cobalt and Linear Accelerator treatments.  (R25 = R23 + R24) | Radiation |
| R26 | Radiation Treatment Visits – Superficial & Orthovoltage | A treatment visit where radiation treatment is given with a Superficial/Orthovoltage treatment unit. | Radiation |
| R14 | Radiation Treatment Visits – Brachytherapy | A treatment visit where radiation treatment includes interstitial, intra-cavitary and treatment moulds/applicators. | Radiation |
| R15 | Total Radiation Treatment Visits | The total Radiation Treatment Visits includes the sum of Megavoltage, Superficial/Orthovoltage and Brachytherapy treatment visits.  (R15 = R25 + R26 + R14) | Radiation |
| R16\* | Total Radiation Treatment & Planning Visits | The sum of Mould Room, Simulation, Clinical Markup, Planning and Dosimetry and Patient Radiation Review Visits (Planning/Review visits) and the Radiation Treatment Visits.  (R16 = R6 + R15) | Radiation |
| R7 | Radiation Fractions – Cobalt | Radiation fractions delivered with a cobalt treatment unit. | Radiation |
| R8 | Radiation Fractions – Linear Accelerator | Radiation fractions delivered with a linear accelerator (linac) treatment unit. | Radiation |
| R9 | Radiation Fractions – High-Energy (Cobalt & Linac) | Radiation fractions delivered using a Megavoltage treatment unit. This is a sum of the Cobalt and Linear Accelerator fractions. | Radiation |
| R10 | High Energy NHPIP Minutes | Sum of activity minutes for HIGH energy treatment NHPIP CODES | Radiation |
| R11 | Radiation Fractions – Superficial & Orthovoltage | Radiation fractions delivered using superficial/orthovoltage treatment units. | Radiation |
| RLE | Radiation Fractions – Low-Energy (Superficial & Orthovoltage) | Sum of activity minutes for LOW energy treatment NHPIP CODES | Radiation |
| BRACHY FRACTIONS | Radiation Fractions – Brachytherapy | Radiation fractions delivered using brachytherapy (includes interstitial, intra-cavitary and treatment moulds/applicators.) | Radiation |
| R12 | Total Radiation Fractions | Radiation fractions delivered using a Megavoltage treatment units and Low Energy treatment units.  (R12 = R7+R8+R11+BRACHY FRACTIONS) | Radiation |
| R13 | Total Treatments NHPIP Minutes | Sum of activity minutes for all treatment NHPIP CODES includes Megavoltage, Superficial/Orthovoltage. | Radiation |
| R17 | Radiation Treated Cases – Cobalt | Unique cases that received at least one cobalt radiation therapy treatment in the reporting period. Treatment in other programs may also have been administered. | Radiation |
| R18 | Radiation Treated Cases – Linear Accelerator | Unique cases that received at least one linac radiation therapy treatment in the reporting period. Treatment in other programs may also have been administered. | Radiation |
| R19 | Radiation Treated Cases – Superficial & Orthovoltage | Unique cases that received at least one superficial/orthovoltage radiation therapy treatment in the reporting period. Treatment in other programs may also have been administered. | Radiation |
| R20 | Radiation Treated Cases – Brachytherapy | Unique cases that received at least one Brachytherapy treatment in the reporting period. Treatment in other programs may also have been administered. | Radiation |
| R21 | Total Radiation Treated Cases | The number of unique cases which received at least one type of radiation therapy treatment in the reporting period. (Note: Since a case can have more than one type of radiation treatment in a reporting period, this may not be the sum of the Cobalt Cases + Linear Accelerator Cases + Superficial/Orthovoltage Cases + Brachytherapy Cases.) | Radiation |
| R30 | New Radiation Treated Cases | The number of NEW cases which received the first radiation treatment, of any type, in the reporting period. | Radiation |
| R31\* | Previously Treated Radiation Cases | The number of cases who received at least one type of radiation therapy treatment in the current reporting period, and who’s first treatment case occurred in a previous reporting period. | Radiation |

\*Derived Metrics not available in the activity table

# The ALR process

CCO utilizes the data for determining case volumes for the purposes of funding and assessing performance against several quality metrics.

ALR attribute names in blue highlight coincide with attribute names in Databook.

We are using the following attributes submitted in DataBook:

| **#** | **DataBook Entity** | **DataBook Attribute** | **Attribute Description** |
| --- | --- | --- | --- |
| 1 | Patient | Patient Chart Number | Patient identifier code that is unique within the healthcare facility. |
| 2 | Disease | Disease Sequence Number | The numeric sequence assigned to a primary cancer for a patient at a specific healthcare facility. |
| 3 | Patient | Submitting Hospital Number | The MOHLTC healthcare facility that submits activity to CCO. |
| 4 | Clinic Visit | Visit Program Code | Primary cancer programs for clinic, planning and treatment activity. Includes; Radiation (RAD), Systemic (SYS), Surgical (SUR), Research (RE), Palliative (PA), or Preventive oncology (PO). |
| 5 | Clinic Visit | Visit Type | Identifies the method of contact for clinic visits. (example:  Face to face, Telephone), by flagging Telephone Visits. Face to face includes visits that allow both parties to see each other (ie. includes video conferencing). Telephone visits include modes such as teleconference and email. |
| 6 | Clinic Visit | Radiation Review Flag | Identifies physician reviews that occur in the radiation therapy area during a patient’s course of treatment. |
| 7 | Radiation | NHPIP Code | National Health Productivity Improvement Program activity code for radiation therapy workload. Define different radiation tasks. Identifies ALR activity and allows calculation of fractions |
| 8 | Healthcare Professional | HCP Number | Healthcare professional identifier code for the physician or non-physician who is most responsible for the patient. This code is unique to the submitting healthcare facility. |

An ALR case is defined by CCO as an instance of a patient (identified by patient chart number) with a specific diagnosis (identified by disease sequence number) at a specific facility (identified by submitting hospital number).

ALR metrics are generated only for visits or radiation treatments performed by health care professionals flagged as physicians (see appendix 2 containing the HCP codes for fiscal year 2014) .

## ALR Metrics - Clinic Visit Entity

There are 2 main metrics based on radiation clinic visits: C1R and C2R. The third metric (C3R) is a derived metric: C3R=C1R + C2R.

### C1R Metric - New Radiation Case

A **new radiation case (C1R)** is counted when *a patient has a first radiation clinic visit with a physician (see appendix 2 for a complete list) for a specific diagnosis at a specific submitting hospital.*

We flag a clinic visit as C1R if all following conditions are true:

1. Visit Program Code = ‘RAD’
2. The visit is face-to-face: Visit Type (in Clinic Visit entity) has one of the following values: 'OC',NULL
3. HCP is a physician (see appendix 2)
4. The ALR case was not reported under program=RAD as “historical case” (in so called one time submission called “ALR baseline”).
5. Is the first radiation clinic visit.

Note: An ALR case will not have any C1R visits if the case was flagged as “historical case” and a record for program RAD exists in the ALR Baseline for that ALR case.  If your organization didn’t submit an ALR Baseline, please ignore all paragraphs referring to “ALR Baseline”.

### C2R Metric – Radiation Follow up Visits

We flag a clinic visit as C2R if all following conditions are true:

1. Visit Program Code = ‘RAD’
2. The visit is face-to-face: Visit Type (in Clinic Visit entity) has one of the following values: 'OC',NULL
3. HCP is a physician (see appendix 2)
4. Clinic visit was not already identified and flagged as a C1R (new radiation case)

### R5 Metric - Radiation Review Visits

**Range of Possible Values:** 0 or greater

**Definition:** A review visit (Visit Program Code = ‘RAD’ and Radiation Review Flag=’R’) with the radiation oncologist, usually occurring weekly during the period of treatment. The visit should be face-to-face: Visit Type (in Clinic Visit entity) has one of the following values: 'OC',NULL

A radiation review is counted only if it is not the first clinic visit with a radiation oncologist.

**Method:** If the first visit with a radiation oncologist is for a radiation review visit, it is reclassified as a new case visit and is not counted as a radiation review. Subsequent visits as long as they occur on separate days are considered for review and are counted in R5.

## ALR Metrics - Radiation Entity

The ALR metrics are based on NHPIP codes. Table below shows the NHPIP codes included in each ALR radiation metric.

## Radiation Planning Visits

### R1 Metric - Radiation Planning Visits - Mould Room

**Range of Possible Values:** 0 or greater

**Definition:** Mould/immobilization activity visits.

**Method:** A visit is considered a Mould Room Planning visit for the purposes of calculating R1 if the following NHPIP codes are entered for the activity:

| **NHPIP\_ACT\_CD** | **NHPIP\_ACT\_DESC** | **NHPIP\_ACTIVE\_STATUS** |
| --- | --- | --- |
| 202 | IMMOBILIZATION (H&N, CNS, VACKLOK, HIPFI | Yes |
| 206 | CUSTOM MADE MOUTHBITE | Yes |
| 207 | CUSTOM MADE HEAD/NECK REST | Yes |
| 208 | FITTING OF STEREOTACTIC FRAME(MULTIFRAC) | Yes |
| 209 | FITTING OF STEREOTACTIC(SINGLE FRACTION) | Yes |
| 210 | FITTING H&N PLASTIC SHELL + EYE & MOUTH | Yes |
| 211 | FITTING OF PLASTIC BREAST/BODY SHELL | Yes |
| 214 | IMMOBILIZATION ADJUSTMENT | Yes |
| 220 | SHIELDING TEMPLATE CALCULATION | Yes |
| 240 | SIMPLE FORM WAX TO OUTLINE WITH PATIENT | Yes |
| 260 | MOULD/PLAQUE APPLICATOR WITH PATIENT | Yes |
| 200 | HEAD AND NECK PLASTER | No |
| 201 | BREAST/BODY SHELL PLASTER | No |
| 203 | FITTING OF PLASTIC BODY SHELL | No |
| 204 | PRODUCTION OF ALPHA-CRADLE DEVICE | No |
| 205 | AQUAPLAST | No |
| 213 | VERIFICATION/INSPECTION OF SHELL FIT | No |
| 215 | CONTOUR FROM SHELL OR MOULD (PMH) | No |
| 234 | CERROBEND SHIELD MODIFIC. COMPLEX (PMH) | No |
| 241 | COMPLEX WAX COMPENSATOR WITH PATIENT | No |
| 242 | CUSTOM MADE CERROBEND,EYE (PMH) | No |
| 253 | MANUAL PREP LEAD,WAX COMPENSATOR WITH PT | No |
| 259 | PREPARATION PB SHIELD OR CUT-OUT | No |
| 261 | HAMMERED AND FITTED LEAD SHIELD WITH PT | No |
| 263 | SURFACE MOULD OR PLAQUE APPLICATOR (PMH) | No |
| 264 | PREP EDUCAT'N + MOULD FABR,INC.CATHETERS | No |
| 390 | CUT-OUTS OF FOAM BLOCKS,ASSESS OF X-RAY | No |

\*Note, there are other codes that constitute an Activity Type of Mould Room(‘M’), however, the remaining codes have a suffix of X, which are codes that do not involve a patient who is present and are not counted towards R1.

For instances where multiple visits on the same day for the same diagnosis and activity occur, the visit with the most senior physician (determined by using the lowest HCP number among the physicians visited) is the only one counted towards R1.

### R2 Metric - Radiation Planning Visits – Simulation

**Range of Possible Values:** 0 or greater

**Definition:** Treatment simulation visits, this includes conventional simulation, CT simulation, and emerging imaging methods.

**Method:** A visit is considered a Planning visit for the purposes of calculating R2 if the following NHPIP codes are entered for the activity:

|  |  |  |
| --- | --- | --- |
| **NHPIP\_ACT\_CD** | **NHPIP\_ACT\_DESC** | **NHPIP\_ACTIVE\_STATUS** |
| 100 | FLUOROSCOPY ONLY IN SIMULATOR | Yes |
| 101 | SET UP OF ONE FIELD | Yes |
| 102 | SET UP OF TWO FIELDS | Yes |
| 107 | VERIFICATION OF TREATMENT SET-UP | Yes |
| 150 | CYSTOGRAPHY W CATHETER INSERTED IN SIM | Yes |
| 151 | CYSTOGRAPHY W/WO CATHETER PREV INSERTED | Yes |
| 152 | I.V.P. PROCEDURE | Yes |
| 160 | UPPER G.I. TRACT WITH CONTRAST | Yes |
| 161 | LOWER G.I. TRACT WITH CONTRAST | Yes |
| 170 | CONTOUR USING SIMULATOR SSD SCALE | Yes |
| 180 | SHIELDING BLOCK OR MASK CHECK | Yes |
| 190 | INTERNAL SOURCE CHECKS | Yes |
| 191 | PLACEMENT OF VAGINAL DUMMY | Yes |
| 368 | SIMULATION USING TX CONEBEAM | Yes |
| 369 | TREATMENT PLANNING CT SCAN WITH IV CONTR | Yes |
| 370 | TREATMENT PLANNING C.T.SCAN | Yes |
| 371 | TREATMENT PLANNING CT SCAN WITH GI CONTR | Yes |
| 372 | TREATMENT PLANNING MRI | Yes |
| 377 | ULTRASOUND FOR LOCALIZATION (PLANNING) | Yes |
| 378 | GOLD SEED MARKER IMPLANT | Yes |
| 379 | PLANNING PET CT | Yes |
| 380 | 4DCT IMAGE ACQUISITION | Yes |
| 103 | SET UP OF THREE FIELDS | No |
| 104 | SET UP OF FOUR FIELDS | No |
| 105 | SET UP OF FIVE FIELDS | No |
| 106 | SET-UP 6 FIELDS-SIM (CONFORMAL THERAPY) | No |
| 110 | BREAST TANGENTS & ANGLE CALCULATION | No |
| 111 | ANGLE DOWN PAIR (PMH) | No |
| 115 | SIMULATION OF ASYMMETRIC BREAST | No |
| 120 | EXTENDED SSD | No |
| 130 | WHOLE CNS | No |
| 212 | SCOUT FILM POSITIONING DURING FITTING | No |
| 373 | RX PLANNING CT STEREOTACTIC | No |

\*Note, there are other codes that constitute an Activity Type of Simulation (‘S’), however, the remaining codes have a suffix of X, which are codes that do not involve a patient who is present and are not counted towards R2.

### R3 Metric - Radiation Planning Visits – Clinical Mark-up

**Range of Possible Values:** 0 or greater

**Definition:** Clinical mark-up visits that require mark-up activities only.

**Method:** A visit is considered a Clinical Mark-up visit for the purposes of calculating R3 if the following NHPIP code is entered for the activity:

|  |  |
| --- | --- |
| **NHPIP\_ACT\_CD** | **NHPIP\_ACT\_DESC** |
| 305 | CLINICAL MARK UP |

\*Note: If the NHPIP code = 305, this radiation activity record becomes a Clinical Mark-Up visit (R3)

For instances where multiple visits on the same day for the same diagnosis and activity occur, the visit with the most senior physician (determined by using the lowest HCP number among the physicians visited) is the only one counted towards R3.

### R4 Metric - Radiation Planning Visits – Planning and Dosimetry

**Range of Possible Values:** 0 or greater

**Definition:** Radiation visits including dosimetry and planning activities that occur outside of Mould Room, Simulation, Clinical Mark-up and Treatment visits.

**Method:** A visit is considered a Planning and Dosimetry visit for the purposes of calculating R4 if the following NHPIP codes are entered for the activity:

Planning:

|  |  |  |
| --- | --- | --- |
| **NHPIP\_ACT\_CD** | **NHPIP\_ACT\_DESC** | **NHPIP\_ACTIVE\_STATUS** |
| 306 | TRIAL SET UP | Yes |
| 235 | REMOVAL OF CERROBEND,CLEAN TRAYS | No |
| 350 | TOTAL/HEMI BODY PLANNING ON TRMT UNIT | No |
| 374 | KIDNEY LOCALIZATION | No |

Dosimetry:

| **NHPIP\_ACT\_CD** | **NHPIP\_ACT\_DESC** | **NHPIP\_ACTIVE\_STATUS** |
| --- | --- | --- |
| 826 | EXPOSURE OF TLDS WITH PAT IN SET-UP | Yes |
| 250 | AUTOMATED PREP COMPENSATOR WITH PATIENT | No |
| 251 | MANUAL PREP COMPENSATOR WITH PATIENT | No |
| 320 | INITIAL CALCULATION DIRECT FIELD W PT | No |
| 327 | STEREOTACTIC CALC (30 MIN PER ISOCENTER) | No |
| 328 | 6 FLD INITIAL CALC CONFORMAL | No |
| 339 | 8 FLD DISTRIBUTION | No |
| 342 | IMRT PLANNING | No |
| 360 | TOT/HEMI BODY DOSIM CALC FOR BOLUS THICK | No |
| 361 | TBI PLANNING | No |
| 381 | AUTOMATED CONTOUR FROM SSD SCALE | No |
| 382 | COMPUTERIZED CONTOUR FROM TP/CT | No |

Planning and Dosimetry activities are counted as R4 if only if NO clinical mark‑up, mould, simulation, or treatment activity is occurring at the same moment (same day/hour/minute).

In other words, if the same (patient/disease/submitting hospital/visiting hospital/visit date & time) received any clinical mark-up, mould, simulation, or treatment activity at the same moment as another Planning & Dosimetry visit, no R4 visit will be counted at all.

### R6 Metric - Total Radiation Planning & Review Visits

**Range of Possible Values:** 0 or greater

**Definition:** The sum of Mould Room, Simulation, Clinical Markup, Planning and Dosimetry and Patient Radiation Review Visits.

**Method:** To obtain the number of Total Radiation Planning & Review Visits, the ALR Metrics R1 (Mould Room), R2 (Simulation), R3 (Clinical Markup), R4 (Planning and Dosimetry) and R5 (Patient Radiation Review Visits) are first calculated and then those totals are summed to derive R6.

R6 = R1 + R2 + R3 + R4 + R5

### R40 Metric - Total Radiation Planning

**Range of Possible Values:** 0 or greater

**Definition:** Radiation Planning Visits.

**Method:** A visit is considered a Planning and Dosimetry visit for the purposes of calculating R4 if the following NHPIP codes are entered for the activity:

| **NHPIP\_ACT\_CD** | **NHPIP\_ACT\_DESC** | **NHPIP\_ACTIVE\_STATUS** |
| --- | --- | --- |
| 100 | FLUOROSCOPY ONLY IN SIMULATOR | Yes |
| 101 | SET UP OF ONE FIELD | Yes |
| 102 | SET UP OF TWO FIELDS | Yes |
| 107 | VERIFICATION OF TREATMENT SET-UP | Yes |
| 150 | CYSTOGRAPHY W CATHETER INSERTED IN SIM | Yes |
| 151 | CYSTOGRAPHY W/WO CATHETER PREV INSERTED | Yes |
| 152 | I.V.P. PROCEDURE | Yes |
| 160 | UPPER G.I. TRACT WITH CONTRAST | Yes |
| 161 | LOWER G.I. TRACT WITH CONTRAST | Yes |
| 170 | CONTOUR USING SIMULATOR SSD SCALE | Yes |
| 180 | SHIELDING BLOCK OR MASK CHECK | Yes |
| 190 | INTERNAL SOURCE CHECKS | Yes |
| 191 | PLACEMENT OF VAGINAL DUMMY | Yes |
| 202 | IMMOBILIZATION (H&N, CNS, VACKLOK, HIPFI | Yes |
| 206 | CUSTOM MADE MOUTHBITE | Yes |
| 207 | CUSTOM MADE HEAD/NECK REST | Yes |
| 208 | FITTING OF STEREOTACTIC FRAME(MULTIFRAC) | Yes |
| 209 | FITTING OF STEREOTACTIC(SINGLE FRACTION) | Yes |
| 210 | FITTING H&N PLASTIC SHELL + EYE & MOUTH | Yes |
| 211 | FITTING OF PLASTIC BREAST/BODY SHELL | Yes |
| 214 | IMMOBILIZATION ADJUSTMENT | Yes |
| 220 | SHIELDING TEMPLATE CALCULATION | Yes |
| 240 | SIMPLE FORM WAX TO OUTLINE WITH PATIENT | Yes |
| 260 | MOULD/PLAQUE APPLICATOR WITH PATIENT | Yes |
| 305 | CLINICAL MARK UP | Yes |
| 306 | TRIAL SET UP | Yes |
| 368 | SIMULATION USING TX CONEBEAM | Yes |
| 369 | TREATMENT PLANNING CT SCAN WITH IV CONTR | Yes |
| 370 | TREATMENT PLANNING C.T.SCAN | Yes |
| 371 | TREATMENT PLANNING CT SCAN WITH GI CONTR | Yes |
| 372 | TREATMENT PLANNING MRI | Yes |
| 377 | ULTRASOUND FOR LOCALIZATION (PLANNING) | Yes |
| 378 | GOLD SEED MARKER IMPLANT | Yes |
| 379 | PLANNING PET CT | Yes |
| 380 | 4DCT IMAGE ACQUISITION | Yes |
| 826 | EXPOSURE OF TLDS WITH PAT IN SET-UP | Yes |
| 103 | SET UP OF THREE FIELDS | No |
| 104 | SET UP OF FOUR FIELDS | No |
| 105 | SET UP OF FIVE FIELDS | No |
| 106 | SET-UP 6 FIELDS-SIM (CONFORMAL THERAPY) | No |
| 110 | BREAST TANGENTS & ANGLE CALCULATION | No |
| 111 | ANGLE DOWN PAIR (PMH) | No |
| 115 | SIMULATION OF ASYMMETRIC BREAST | No |
| 120 | EXTENDED SSD | No |
| 130 | WHOLE CNS | No |
| 200 | HEAD AND NECK PLASTER | No |
| 201 | BREAST/BODY SHELL PLASTER | No |
| 203 | FITTING OF PLASTIC BODY SHELL | No |
| 204 | PRODUCTION OF ALPHA-CRADLE DEVICE | No |
| 205 | AQUAPLAST | No |
| 212 | SCOUT FILM POSITIONING DURING FITTING | No |
| 213 | VERIFICATION/INSPECTION OF SHELL FIT | No |
| 215 | CONTOUR FROM SHELL OR MOULD (PMH) | No |
| 234 | CERROBEND SHIELD MODIFIC. COMPLEX (PMH) | No |
| 235 | REMOVAL OF CERROBEND,CLEAN TRAYS | No |
| 241 | COMPLEX WAX COMPENSATOR WITH PATIENT | No |
| 242 | CUSTOM MADE CERROBEND,EYE (PMH) | No |
| 250 | AUTOMATED PREP COMPENSATOR WITH PATIENT | No |
| 251 | MANUAL PREP COMPENSATOR WITH PATIENT | No |
| 253 | MANUAL PREP LEAD,WAX COMPENSATOR WITH PT | No |
| 259 | PREPARATION PB SHIELD OR CUT-OUT | No |
| 261 | HAMMERED AND FITTED LEAD SHIELD WITH PT | No |
| 263 | SURFACE MOULD OR PLAQUE APPLICATOR (PMH) | No |
| 264 | PREP EDUCAT'N + MOULD FABR,INC.CATHETERS | No |
| 320 | INITIAL CALCULATION DIRECT FIELD W PT | No |
| 327 | STEREOTACTIC CALC (30 MIN PER ISOCENTER) | No |
| 328 | 6 FLD INITIAL CALC CONFORMAL | No |
| 339 | 8 FLD DISTRIBUTION | No |
| 342 | IMRT PLANNING | No |
| 350 | TOTAL/HEMI BODY PLANNING ON TRMT UNIT | No |
| 360 | TOT/HEMI BODY DOSIM CALC FOR BOLUS THICK | No |
| 361 | TBI PLANNING | No |
| 373 | RX PLANNING CT STEREOTACTIC | No |
| 374 | KIDNEY LOCALIZATION | No |
| 381 | AUTOMATED CONTOUR FROM SSD SCALE | No |
| 382 | COMPUTERIZED CONTOUR FROM TP/CT | No |
| 390 | CUT-OUTS OF FOAM BLOCKS,ASSESS OF X-RAY | No |

For instances where multiple visits on the same day for the same diagnosis and activity occur, the visit with the most senior physician (determined by using the lowest HCP number among the physicians visited) is the only one counted towards R40.

## Radiation Treatment Visits

### R23 Metric - Radiation Treatment Visits - Cobalt

**Range of Possible Values:** 0 or greater

**Definition:** A treatment visit where radiation treatment is given with a Cobalt treatment unit.

**Method:** A visit is considered a Radiation Treatment Visit – Cobalt for the purposes of calculating R23 if the following NHPIP codes are entered for the activity:

|  |  |  |
| --- | --- | --- |
| **NHPIP\_ACT\_CD** | **NHPIP\_ACT\_DESC** | **NHPIP\_ACTIVE\_STATUS** |
| 572 | GAMMA KNIFE TREATMENT | Yes |
| 520 | CO-60 DIRECT FIELD | No |
| 521 | CO-60 PAIR - TWO FIELDS | No |
| 522 | CO-60 THREE FIELDS | No |
| 523 | CO-60 FOUR FIELDS | No |
| 524 | CO-60 FIVE FIELDS | No |
| 525 | CO-60 ARC/ROTATION | No |
| 526 | CO-60 EXTENDED SSD | No |
| 527 | COMPLEX EXTENDED SSD COBALT | No |
| 528 | CO-60 WHOLE/HALF BODY | No |
| 529 | CO-60 WHOLE CNS | No |

For instances where multiple visits on the same day for the same diagnosis and activity occur, the visit with the most senior physician (determined by using the lowest HCP number among the physicians visited) is the only one counted towards R23.

### R24 Metric - Radiation Treatment Visits – Linear Accelerator

**Range of Possible Values:** 0 or greater

**Definition:** A treatment visit where radiation treatment is given with a Linear Accelerator treatment unit.

**Method:** A visit is considered a Radiation Treatment Visit – Linear Accelerator for the purposes of calculating R24 if the following NHPIP codes are entered for the activity:

|  |  |  |
| --- | --- | --- |
| **NHPIP\_ACT\_CD** | **NHPIP\_ACT\_DESC** | **NHPIP\_ACTIVE\_STATUS** |
| 530 | LINAC DIRECT FIELD | Yes |
| 531 | LINAC PAIR - TWO FIELDS | Yes |
| 532 | LINAC THREE FIELDS | Yes |
| 533 | LINAC FOUR FIELDS | Yes |
| 534 | LINAC FIVE OR MORE FIELDS | Yes |
| 535 | LINAC ARC/ROTATION | Yes |
| 536 | LINAC EXTENDED SSD | Yes |
| 538 | LINAC WHOLE/HALF BODY | Yes |
| 540 | LINAC ELECTRONS | Yes |
| 542 | TOTAL BODY ELECTRONS | Yes |
| 548 | STEREOTACTIC TREAT  (1 FRACT-1HR/ISOCENTR) | Yes |
| 549 | STEREOTACTIC TREAT  (MULTIFRAC-30MIN/ISOC) | Yes |
| 575 | TOMOTHERAPY TREATMENT | Yes |
| 592 | IMRT TREATMENT | Yes |
| 594 | VMAT / RAPIC ARC TREATMENT CODE | Yes |
| 596 | CYBERKNIFE TREATMENT (SINGLE FRACTION) | Yes |
| 597 | CYBERKNIFE TREATMENT (MULTI-FRACTIONS) | Yes |
| 519 | 8 FLD LINAC TREATMENT | No |
| 537 | LINAC COMPLEX EXTENDED SSD | No |
| 539 | LINAC WHOLE CNS | No |
| 541 | 6 FIELD-6 FIELDS/ISOCENTER | No |

For instances where multiple visits on the same day for the same diagnosis and activity occur, the visit with the most senior physician (determined by using the lowest HCP number among the physicians visited) is the only one counted towards R24.

### R25 Metric - Radiation Treatment Visits – Megavoltage

**Range of Possible Values:** 0 or greater

**Definition:** A treatment visit where radiation treatment is given with a Megavoltage treatment unit. This is the sum of the Cobalt and Linear Accelerator treatments.

**Method:** To obtain the number of Radiation Treatment Visits – Megavoltage, the ALR Metrics R23 (Radiation Treatment Visits - Cobalt) and R24 (Radiation Treatment Visits - Linear Accelerator) are first calculated and then those totals are summed to derive R25.

R25 = R23 + R24

### R26 Metric - Radiation Treatment Visits – Superficial & Orthovoltage

**Range of Possible Values:** 0 or greater

**Definition:** A treatment visit where radiation treatment is given with a Superficial/Orthovoltage treatment unit.

**Method:** A visit is considered a Radiation Treatment – Superficial & Orthovoltage (R26) visit for the purposes of calculating R26 if the following NHPIP codes are entered for the activity.

Superficial NHPIP Codes (TS):

|  |  |  |
| --- | --- | --- |
| **NHPIP\_ACT\_CD** | **NHPIP\_ACT\_DESC** | **NHPIP\_ACTIVE\_STATUS** |
| 500 | SUPERFICIAL X-RAY SIMPLE | Yes |
| 501 | SUPERFICIAL X-RAY WITH INTERNAL SHIELD | Yes |
| 503 | RT 50 TREATMENT PAPPION (PMH) | No |

Orthovoltage NHPIP Codes (TD):

|  |  |  |
| --- | --- | --- |
| **NHPIP\_ACT\_CD** | **NHPIP\_ACT\_DESC** | **NHPIP\_ACTIVE\_STATUS** |
| 510 | ORTHOVOLTAGE SIMPLE | Yes |
| 511 | ORTHOVOLTAGE WITH INTERNAL SHIELD | Yes |
| 512 | INTRA-OPERATIVE RADIATION THERAPY | Yes |

For instances where multiple visits on the same day for the same diagnosis and activity occur, the visit with the most senior physician (determined by using the lowest HCP number among the physicians visited) is the only one counted towards R26.

### R14 Metric - Radiation Treatment Visits – Brachytherapy

**Range of Possible Values:** 0 or greater

**Definition:** A treatment visit where radiation treatment includes interstitial, intra-cavitary and treatment moulds/applicators.

**Method:** A visit is considered a Radiation Treatment – Brachytherapy (R14) visit for the purposes of calculating R14 if the following NHPIP codes are entered for the activity:

Interstitial Codes (TT):

|  |  |  |
| --- | --- | --- |
| **NHPIP\_ACT\_CD** | **NHPIP\_ACT\_DESC** | **NHPIP\_ACTIVE\_STATUS** |
| 570 | INTERS. SOURCE MAN. AFTR LOAD FULL INVOL | Yes |
| 571 | INTERS. SOURCES LIMITED INVOLVEMENT | Yes |
| 573 | REMOTE LOADING INTERS.SOURCE FULL INVOLV | Yes |
| 574 | REMOTE LOADING INTERS.SOURCE LIMT INVOLV | Yes |

Interacavitary Codes (TV):

|  |  |  |
| --- | --- | --- |
| **NHPIP\_ACT\_CD** | **NHPIP\_ACT\_DESC** | **NHPIP\_ACTIVE\_STATUS** |
| 561 | INTRAC SOURCES TOT. INVOLVE-AFTERLOADING | Yes |
| 563 | LIMITED INVOLVEMENT MAN. AFTER LOADING | Yes |
| 565 | REMOTE LOADING TOTAL INVOLVEMENT | Yes |
| 566 | NO DOSIMETRY FOR REMOTE SOURCES LOADING | Yes |
| 568 | PREP,O.R. PROC,COMP DOSIM,ENDOVAS.TX PMH | Yes |

Mould Codes (TM):

|  |  |  |
| --- | --- | --- |
| **NHPIP\_ACT\_CD** | **NHPIP\_ACT\_DESC** | **NHPIP\_ACTIVE\_STATUS** |
| 581 | DAILY APPLICATION OF SURFACE MOULD | Yes |

For instances where multiple visits on the same day for the same diagnosis and activity occur, the visit with the most senior physician (determined by using the lowest HCP number among the physicians visited) is the only one counted towards R14.

### R15 Metric - Total Radiation Treatment Visits

**Range of Possible Values:** 0 or greater

**Definition:** The total Radiation Treatment Visits includes the sum of Megavoltage, Superficial/Orthovoltage and Brachytherapy treatment visits.

**Method:** To obtain the number of Total Radiation Treatment Visits, the ALR Metrics R14 (Radiation Treatment Visits - Brachytherapy), R25 (Radiation Treatment Visits - Megavoltage) and R26 (Radiation Treatment Visits - Superficial & Orthovoltage) are first calculated and then those totals are summed to derive R15.

**Derivation Logic:**

R15 = R25 + R26 + R14

### R16 Metric - Total Radiation Treatment & Planning Visits

**Range of Possible Values:** 0 or greater

**Definition:** The sum of Mould Room, Simulation, Clinical Markup, Planning and Dosimetry and Patient Radiation Review Visits (Planning/Review visits) and the Radiation Treatment Visits.

**Method:** To obtain the number of Total Radiation Treatment & Planning Visits, the ALR Metrics R6 (Total Radiation Planning & Review Visits) and R15 (Total Radiation Treatment Visits) are first calculated and then those totals are summed to derive R16.

**Derivation Logic:**

R16 = R6 + R15

## Radiation Fraction Activities

### R7 Metric - Radiation Fractions – Cobalt

**Range of Possible Values:** 0 or greater

**Definition:** Radiation fractions delivered with a cobalt treatment unit.

**Method:** A visit is considered a Radiation – Cobalt visit for the purposes of calculating R7 if the following NHPIP codes are entered for the activity:

|  |  |  |
| --- | --- | --- |
| **NHPIP\_ACT\_CD** | **NHPIP\_ACT\_DESC** | **NHPIP\_ACTIVE\_STATUS** |
| 572 | GAMMA KNIFE TREATMENT | Yes |
| 520 | CO-60 DIRECT FIELD | No |
| 521 | CO-60 PAIR - TWO FIELDS | No |
| 522 | CO-60 THREE FIELDS | No |
| 523 | CO-60 FOUR FIELDS | No |
| 524 | CO-60 FIVE FIELDS | No |
| 525 | CO-60 ARC/ROTATION | No |
| 526 | CO-60 EXTENDED SSD | No |
| 527 | COMPLEX EXTENDED SSD COBALT | No |
| 528 | CO-60 WHOLE/HALF BODY | No |
| 529 | CO-60 WHOLE CNS | No |

The Radiation Fractions for these visits are then added to R7. For instances where multiple visits on the same day for the same diagnosis and activity occur, the fractions for each of the instances will be counted towards R7.

### R8 Metric - Radiation Fractions – Linear Accelerator

**Range of Possible Values:** 0 or greater

**Definition:** Radiation fractions delivered with a linear accelerator (linac) treatment unit.

**Method:** A visit is considered a Radiation– Cobalt visit for the purposes of calculating R8 if the following NHPIP codes are entered for the activity:

| **NHPIP\_ACT\_CD** | **NHPIP\_ACT\_DESC** | **NHPIP\_ACTIVE\_STATUS** |
| --- | --- | --- |
| 530 | LINAC DIRECT FIELD | Yes |
| 531 | LINAC PAIR - TWO FIELDS | Yes |
| 532 | LINAC THREE FIELDS | Yes |
| 533 | LINAC FOUR FIELDS | Yes |
| 534 | LINAC FIVE OR MORE FIELDS | Yes |
| 535 | LINAC ARC/ROTATION | Yes |
| 536 | LINAC EXTENDED SSD | Yes |
| 538 | LINAC WHOLE/HALF BODY | Yes |
| 540 | LINAC ELECTRONS | Yes |
| 542 | TOTAL BODY ELECTRONS | Yes |
| 548 | STEREOTACTIC TREAT(1 FRACT-1HR/ISOCENTR) | Yes |
| 549 | STEREOTACTIC TREAT(MULTIFRAC-30MIN/ISOC) | Yes |
| 575 | TOMOTHERAPY TREATMENT | Yes |
| 592 | IMRT TREATMENT | Yes |
| 594 | VMAT / RAPIC ARC TREATMENT CODE | Yes |
| 596 | CYBERKNIFE TREATMENT (SINGLE FRACTION) | Yes |
| 597 | CYBERKNIFE TREATMENT (MULTI-FRACTIONS) | Yes |
| 519 | 8 FLD LINAC TREATMENT | No |
| 537 | LINAC COMPLEX EXTENDED SSD | No |
| 539 | LINAC WHOLE CNS | No |
| 541 | 6 FIELD-6 FIELDS/ISOCENTER | No |

The Radiation Fractions for these visits are then added to R8. For instances where multiple visits on the same day for the same diagnosis and activity occur, the fractions for each of the instances will be counted towards R8.

### R9 Metric - Radiation Fractions – High-Energy (Cobalt & Linac)

**Range of Possible Values:** 0 or greater

**Definition:** Radiation fractions delivered using a Megavoltage treatment unit. This is a sum of the Cobalt and Linear Accelerator fractions.

**Method:** To obtain the number of Radiation Fractions - High-Energy, the ALR Metrics R7 (Radiation Fractions - Cobalt) and R8 (Radiation Fractions - Linear Accelerator) are first calculated and then those totals are summed to derive R9.

**Derivation Logic:**

R9 = R7 + R8

### R10 Metric - High Energy NHPIP Minutes

**Range of Possible Values:** 0 or greater

**Definition:** Sum of activity minutes for HIGH energy treatment NHPIP CODES.

**Method:** The sum of NHPIP\_DURATION\_UNIT minutes from NHPIP codes captured in Cobalt ([R7](http://www.cancercare.on.ca/ext/datadictionary_internal/DataDictionary/ALR_Phase_2/Radiation_Fractions_-_Cobalt_R7.htm)) and Linac ([R8](http://www.cancercare.on.ca/ext/datadictionary_internal/DataDictionary/ALR_Phase_2/Radiation_Fractions_-_Linear_Accelerator_R8.htm)) fraction visits for a given period. Real duration is not captured in Data Book.

### R11 Metric - Radiation Fractions – Superficial & Orthovoltage

**Range of Possible Values:** 0 or greater

**Definition:** Radiation fractions delivered using superficial/orthovoltage treatment units.

**Method:** A visit is considered a Radiation– Superficial & Orthovoltage visit for the purposes of calculating R11 if the following NHPIP codes are entered for the activity.

Superficial NHPIP Codes (TS):

|  |  |  |
| --- | --- | --- |
| **NHPIP\_ACT\_CD** | **NHPIP\_ACT\_DESC** | **NHPIP\_ACTIVE\_STATUS** |
| 500 | SUPERFICIAL X-RAY SIMPLE | Yes |
| 501 | SUPERFICIAL X-RAY WITH INTERNAL SHIELD | Yes |
| 503 | RT 50 TREATMENT PAPPION (PMH) | No |

Orthovoltage NHPIP Codes (TD):

|  |  |  |
| --- | --- | --- |
| **NHPIP\_ACT\_CD** | **NHPIP\_ACT\_DESC** | **NHPIP\_ACTIVE\_STATUS** |
| 510 | ORTHOVOLTAGE SIMPLE | Yes |
| 511 | ORTHOVOLTAGE WITH INTERNAL SHIELD | Yes |
| 512 | INTRA-OPERATIVE RADIATION THERAPY | Yes |

The Radiation Fractions for these visits are then added to R11. For instances where multiple visits on the same day for the same diagnosis and activity occur, the fractions for each of the instances will be counted towards R11.

### RLE Metric - Radiation Low Energy NHPIP Minutes – Superficial & Orthovoltage

**Range of Possible Values:** 0 or greater

**Definition:** Sum of activity minutes for LOW energy treatment NHPIP CODES.

**Method:** The sum of NHPIP\_DURATION\_UNIT minutes from NHPIP codes captured in Superficial & Orthovoltage ([R](http://www.cancercare.on.ca/ext/datadictionary_internal/DataDictionary/ALR_Phase_2/Radiation_Fractions_-_Linear_Accelerator_R8.htm)11) fraction visits for a given period. Real duration is not captured in Data Book.

### BRACHY FRACTIONS Metric - Radiation Fractions – Brachytherapy

**Range of Possible Values:** 0 or greater

**Definition:** Radiation fractions delivered using brachytherapy.

**Method:** A visit is considered a Radiation– brachytherapy visit for the purposes of calculating BRACHY FRACTIONS if the following NHPIP codes are entered for the activity.

Interstitial Codes (TT):

| **NHPIP\_ACT\_CD** | **NHPIP\_ACT\_DESC** | **NHPIP\_ACTIVE\_STATUS** |
| --- | --- | --- |
| 570 | INTERS. SOURCE MAN. AFTR LOAD FULL INVOL | Yes |
| 571 | INTERS. SOURCES LIMITED INVOLVEMENT | Yes |
| 573 | REMOTE LOADING INTERS.SOURCE FULL INVOLV | Yes |
| 574 | REMOTE LOADING INTERS.SOURCE LIMT INVOLV | Yes |

Interacavitary Codes (TV):

|  |  |  |
| --- | --- | --- |
| **NHPIP\_ACT\_CD** | **NHPIP\_ACT\_DESC** | **NHPIP\_ACTIVE\_STATUS** |
| 561 | INTRAC SOURCES TOT. INVOLVE-AFTERLOADING | Yes |
| 563 | LIMITED INVOLVEMENT MAN. AFTER LOADING | Yes |
| 565 | REMOTE LOADING TOTAL INVOLVEMENT | Yes |
| 566 | NO DOSIMETRY FOR REMOTE SOURCES LOADING | Yes |
| 568 | PREP,O.R. PROC,COMP DOSIM,ENDOVAS.TX PMH | Yes |

Mould Codes (TM):

|  |  |  |
| --- | --- | --- |
| **NHPIP\_ACT\_CD** | **NHPIP\_ACT\_DESC** | **NHPIP\_ACTIVE\_STATUS** |
| 581 | DAILY APPLICATION OF SURFACE MOULD | Yes |

The Radiation Fractions for these visits are then added to BRACHY FRACTIONS. For instances where multiple visits on the same day for the same diagnosis and activity occur, the fractions for each of the instances will be counted towards BRACHY FRACTIONS.

### R12 Metric - Total Radiation Fractions

**Range of Possible Values:** 0 or greater

**Definition:** Radiation fractions delivered using a Megavoltage treatment units and Low Energy treatment units.

**Method:** To obtain the number of Total Radiation Fractions, the ALR Metrics R7 (Radiation Fractions - Cobalt), R8 (Radiation Fractions - Linear Accelerator), R11 (Radiation Fractions - Superficial & Orthovoltage) and BRACHY FRACTIONS are first calculated and then those totals are summed to derive R12.

**Derivation Logic:**

R12 = (R7+R8+R11+BRACHY FRACTIONS)

### R13 Metric - Total Treatments NHPIP Minutes

**Range of Possible Values:** 0 or greater

**Definition:** The sum of NHPIP\_DURATION\_UNIT minutes from NHPIP codes captured in Cobalt (R7), Linac (R8) and Orthovoltage (R11) fraction visits for a given period.

**Method:** The sum of NHPIP\_DURATION\_UNIT minutes from NHPIP codes captured in Superficial & Orthovoltage ([R](http://www.cancercare.on.ca/ext/datadictionary_internal/DataDictionary/ALR_Phase_2/Radiation_Fractions_-_Linear_Accelerator_R8.htm)11) fraction visits for a given period. Real duration is not captured in Data Book.

## Radiation Treated Cases

### R17 Metric - Radiation Treated Cases – Cobalt

**Range of Possible Values:** 0 or greater

**Definition:** Unique cases that received at least one cobalt radiation therapy treatment in the reporting period. Treatment in other programs may also have been administered.

**Method:** A case is considered a Radiation Treated Case – Cobalt for the purposes of calculating R17 if the following NHPIP codes are entered for the activity:

|  |  |  |
| --- | --- | --- |
| **NHPIP\_ACT\_CD** | **NHPIP\_ACT\_DESC** | **NHPIP\_ACTIVE\_STATUS** |
| 572 | GAMMA KNIFE TREATMENT | Yes |
| 520 | CO-60 DIRECT FIELD | No |
| 521 | CO-60 PAIR - TWO FIELDS | No |
| 522 | CO-60 THREE FIELDS | No |
| 523 | CO-60 FOUR FIELDS | No |
| 524 | CO-60 FIVE FIELDS | No |
| 525 | CO-60 ARC/ROTATION | No |
| 526 | CO-60 EXTENDED SSD | No |
| 527 | COMPLEX EXTENDED SSD COBALT | No |
| 528 | CO-60 WHOLE/HALF BODY | No |
| 529 | CO-60 WHOLE CNS | No |

All instances of a patient with a particular disease at a particular submitting institution are counted as a single case.

**Example 1:** Two separate institutions submit information regarding patient X with disease A, how many cases will this situation create for R17?

Answer: 2, since there were 2 different submitting hospitals

**Example 2:** 5 records are found for the same patient in the month of January 2005. All of the records are for the same disease and are from the same submitting institution. How many cases will this situation create for R17?

Answer: 1, since the records were all for the same patient with the same disease and the same submitting hospital

### R18 Metric - Radiation Treated Cases – Linear Accelerator

**Range of Possible Values:** 0 or greater

**Definition:** Unique cases that received at least one linac radiation therapy treatment in the reporting period. Treatment in other programs may also have been administered.

**Method:** A case is considered a Radiation Treated Case – Linear Accelerator for the purposes of calculating R18 if the following NHPIP codes are entered for the activity.

| **NHPIP\_ACT\_CD** | **NHPIP\_ACT\_DESC** | **NHPIP\_ACTIVE\_STATUS** |
| --- | --- | --- |
| 530 | LINAC DIRECT FIELD | Yes |
| 531 | LINAC PAIR - TWO FIELDS | Yes |
| 532 | LINAC THREE FIELDS | Yes |
| 533 | LINAC FOUR FIELDS | Yes |
| 534 | LINAC FIVE OR MORE FIELDS | Yes |
| 535 | LINAC ARC/ROTATION | Yes |
| 536 | LINAC EXTENDED SSD | Yes |
| 538 | LINAC WHOLE/HALF BODY | Yes |
| 540 | LINAC ELECTRONS | Yes |
| 542 | TOTAL BODY ELECTRONS | Yes |
| 548 | STEREOTACTIC TREAT(1 FRACT-1HR/ISOCENTR) | Yes |
| 549 | STEREOTACTIC TREAT(MULTIFRAC-30MIN/ISOC) | Yes |
| 575 | TOMOTHERAPY TREATMENT | Yes |
| 592 | IMRT TREATMENT | Yes |
| 594 | VMAT / RAPIC ARC TREATMENT CODE | Yes |
| 596 | CYBERKNIFE TREATMENT (SINGLE FRACTION) | Yes |
| 597 | CYBERKNIFE TREATMENT (MULTI-FRACTIONS) | Yes |
| 519 | 8 FLD LINAC TREATMENT | No |
| 537 | LINAC COMPLEX EXTENDED SSD | No |
| 539 | LINAC WHOLE CNS | No |
| 541 | 6 FIELD-6 FIELDS/ISOCENTER | No |

All instances of a patient with a particular disease at a particular submitting institution are counted as a single case.

**Example 1:** Two separate institutions submit information regarding patient X with disease A, how many cases will this situation create for R18?

Answer: 2, since there were 2 different submitting hospitals

**Example 2:** 5 records are found for the same patient in the month of January 2005. All of the records are for the same disease and are from the same submitting institution. How many cases will this situation create for R18?

Answer: 1, since the records were all for the same patient with the same disease and the same submitting hospital

### R19 Metric - Radiation Treated Cases – Superficial & Orthovoltage

**Range of Possible Values:** 0 or greater

**Definition:** Unique cases that received at least one superficial/orthovoltage radiation therapy treatment in the reporting period. Treatment in other programs may also have been administered.

**Method:** A case is considered a Radiation Treated Case – Superficial & Orthovolage for the purposes of calculating R19 if the following NHPIP codes are entered for the activity.

Superficial NHPIP Codes (TS):

|  |  |  |
| --- | --- | --- |
| **NHPIP\_ACT\_CD** | **NHPIP\_ACT\_DESC** | **NHPIP\_ACTIVE\_STATUS** |
| 500 | SUPERFICIAL X-RAY SIMPLE | Yes |
| 501 | SUPERFICIAL X-RAY WITH INTERNAL SHIELD | Yes |
| 503 | RT 50 TREATMENT PAPPION (PMH) | No |

Orthovoltage NHPIP Codes (TD):

|  |  |  |
| --- | --- | --- |
| **NHPIP\_ACT\_CD** | **NHPIP\_ACT\_DESC** | **NHPIP\_ACTIVE\_STATUS** |
| 510 | ORTHOVOLTAGE SIMPLE | Yes |
| 511 | ORTHOVOLTAGE WITH INTERNAL SHIELD | Yes |
| 512 | INTRA-OPERATIVE RADIATION THERAPY | Yes |

All instances of a patient with a particular disease at a particular submitting institution are counted as a single case.

**Example 1:** Two separate institutions submit information regarding patient X with disease A, how many cases will this situation create for R19?

Answer: 2, since there were 2 different submitting hospitals

**Example 2:** 5 records are found for the same patient in the month of January 2005. All of the records are for the same disease and are from the same submitting institution. How many cases will this situation create for R19?

Answer: 1, since the records were all for the same patient with the same disease and the same submitting hospital

### R20 Metric - Radiation Treated Cases – Brachytherapy

**Range of Possible Values:** 0 or greater

**Definition:** Unique cases that received at least one Brachytherapy treatment in the reporting period. Treatment in other programs may also have been administered.

**Method:** A case is considered a Radiation Treated Case – Brachytherapy for the purposes of calculating R20 if the following NHPIP codes are entered for the activity.

Interstitial Codes (TT):

| **NHPIP\_ACT\_CD** | **NHPIP\_ACT\_DESC** | **NHPIP\_ACTIVE\_STATUS** |
| --- | --- | --- |
| 570 | INTERS. SOURCE MAN. AFTR LOAD FULL INVOL | Yes |
| 571 | INTERS. SOURCES LIMITED INVOLVEMENT | Yes |
| 573 | REMOTE LOADING INTERS.SOURCE FULL INVOLV | Yes |
| 574 | REMOTE LOADING INTERS.SOURCE LIMT INVOLV | Yes |

Interacavitary Codes (TV):

|  |  |  |
| --- | --- | --- |
| **NHPIP\_ACT\_CD** | **NHPIP\_ACT\_DESC** | **NHPIP\_ACTIVE\_STATUS** |
| 561 | INTRAC SOURCES TOT. INVOLVE-AFTERLOADING | Yes |
| 563 | LIMITED INVOLVEMENT MAN. AFTER LOADING | Yes |
| 565 | REMOTE LOADING TOTAL INVOLVEMENT | Yes |
| 566 | NO DOSIMETRY FOR REMOTE SOURCES LOADING | Yes |
| 568 | PREP,O.R. PROC,COMP DOSIM,ENDOVAS.TX PMH | Yes |

Mould Codes (TM):

|  |  |  |
| --- | --- | --- |
| **NHPIP\_ACT\_CD** | **NHPIP\_ACT\_DESC** | **NHPIP\_ACTIVE\_STATUS** |
| 581 | DAILY APPLICATION OF SURFACE MOULD | Yes |

All instances of a patient with a particular disease at a particular submitting institution are counted as a single case.

**Example 1:** Two separate institutions submit information regarding patient X with disease A, how many cases will this situation create for R20?

Answer: 2, since there were 2 different submitting hospitals

**Example 2:** 5 records are found for the same patient in the month of January 2005. All of the records are for the same disease and are from the same submitting institution. How many cases will this situation create for R20?

Answer: 1, since the records were all for the same patient with the same disease and the same submitting hospital

### R21 Metric - Total Radiation Treated Cases

**Range of Possible Values:** 0 or greater

**Definition:** The number of unique cases which received at least one type of radiation therapy treatment in the reporting period. (Note: Since a case can have more than one type of radiation treatment in a reporting period, this may not be the sum of the Cobalt Cases + Linear Accelerator Cases + Superficial/Orthovoltage Cases + Brachytherapy Cases.)

**Method:** To obtain the number of Total Radiation Treated Cases, the ALR Metrics R17 (Radiation Treated Cases - Cobalt), R18 (Radiation Treated Cases - Linear Accelerator), R19 (Radiation Treated Cases - Superficial & Orthovoltage) and R20 (Radiation Treated Cases - Brachytherapy) are first calculated and then those totals are summed to derive R21.

**Derivation Logic:**

1) R21 = R17 + R18 + R19 + R20 **🡨** this will result in double counts. It is not the sum it is the distinct count.

2) Count of the distinct/unique combination of a patient and the disease number in a specific submitting organization.

### R30 Metric - New Radiation Treated Cases

**Range of Possible Values:** 0 or greater

**Definition:** The number of NEW cases which received the first radiation treatment, of any type, in the reporting period.

**Method:** The number of cases who received for the first time at least one type of radiation therapy treatment in the current reporting period.

**Derivation Logic:** First radiation treatment flagged as R21 is also flagged as R30

### R31 Metric - Previously Treated Radiation Cases

**Range of Possible Values:** 0 or greater

**Definition:** The number of cases who received at least one type of radiation therapy treatment in the current reporting period, and who’s first treatment case occurred in a previous reporting period.

**Method:** R31 = R21 - R30

### Possible data quality issues that may have an impact on the ALR metrics

Each flag is set only if ALL conditions are met. Here are examples when the flag may not be set properly (treatment is not counted in the right ALR metric):

* The Physician HCP Number or Specialty for physician is unknown
* For clinic visits, Visit Type is not set (Y or N)
* NHPIP Code is unknown

# Appendix 1 – NHPIP Codes (including inactive codes)

National Hospital Productivity Improvement Program (NHPIP) is a listing of radiotherapy procedures with their respective measures of output (workload).  Thereby, radiotherapy workload can be measured by specific procedure performed. The list of NHPIP codes in the table below are available in the online FY2014-15 DataBook under Appendix 1.14 (updated January 2014).

|  |  |
| --- | --- |
| **Legend** |  |
|  | Change 327 to 327X, retained original 327 description |
|  | Added Suffix "X" |
|  | Description Change |
|  | New Code |
|  | Deactivated Code |

| **NHPIP\_ACT\_CD** | **NHPIP\_ACT\_TYPE** | **NHPIP\_ACT\_DESC** | **NHPIP\_DURATION\_UNIT** | **NHPIP\_MAX\_DOSE\_PF** | **NHPIP\_USAGE\_CD** | **NHPIP\_ACTIVE\_STATUS** |
| --- | --- | --- | --- | --- | --- | --- |
| 327X | D | STEREOTACTIC CALC (30 MIN PER ISOCENTER) | 30 |  | P | Yes |
| 235X | P | REMOVAL OF CERROBEND,CLEAN TRAYS | 10 |  | P | Yes |
| 342X | D | IMRT PLANNING | 180 |  | P | Yes |
| 805X | QA | QA CRASH CART (PMH) | 30 |  | R | Yes |
| 806X | QA | VERIFY DAILY START UP PROCEDURE (PMH) | 20 |  | R | Yes |
| 860 | QA | KV/MV FLUOROSCOPIC IMAGE ACQUISITION | 1 |  | P | Yes |
| 861 | QA | KV/MV IMAGE REGISTRATION | 5 |  | P | Yes |
| 862 | QA | KV/MV RADIOGRAPH ACQUISITION | 1 |  | P | Yes |
| 863 | QA | KV/MV VOLUMETRIC IMAGE ACQUISITION | 2 |  | P | Yes |
| 305 | P | CLINICAL MARK UP | 20 |  | P | Yes |
| 306 | P | TRIAL SET UP | 10 |  | P | Yes |
| 369 | S | TREATMENT PLANNING CT SCAN WITH IV CONTRAST | 45 |  | P | Yes |
| 534 | TL | LINAC FIVE OR MORE FIELDS | 22 | 20 | P | Yes |
| 864 | QA | OPTICAL WAND TRACKING | 5 |  | P | Yes |
| 290X | M | MANUFACTURE OF BOLUS | 30 |  | R | Yes |
| 311X | D | COMPUTERIZED PLAN GENERATION 3 OR MORE FIELDS | 30 |  | P | Yes |
| 323X | D | INITIAL CALCULATION 3 OR MORE FIELDS W/O PT | 12 |  | P | Yes |
| 338X | D | INDEPENDENT CALC CHECK (ALTERNATE METHOD) | 15 |  | P | Yes |
| 553X | QA | PLAN CHECK, SIMPLE 1 OR 2 FIELDS | 5 |  | P | Yes |
| 555X | QA | PLAN CHECK, 3 OR MORE FIELDS | 15 |  | P | Yes |
| 830X | D | SENDING IMAGES/DATA TO OTHER FACILITIES | 20 |  | R | Yes |
| 107 | S | VERIFICATION OF TREATMENT SET-UP | 15 |  | P | Yes |
| 202 | M | IMMOBILIZATION (H&N, CNS, VACKLOK, HIPFIX, etc.) | 20 |  | P | Yes |
| 361X | D | TBI PLANNING | 60 |  | P | Yes |
| 368 | S | SIMULATION USING TX CONEBEAM | 15 |  | P | Yes |
| 371 | S | TREATMENT PLANNING CT SCAN WITH GI CONTRAST | 45 |  | P | Yes |
| 372 | S | TREATMENT PLANNING MRI | 30 |  | P | Yes |
| 594 | TL | VMAT / RAPIC ARC TREATMENT CODE | 45 | 13 | P | Yes |
| 596 | TL | CYBERKNIFE TREATMENT (SINGLE FRACTION) | 60 | 55 | P | Yes |
| 597 | TL | CYBERKNIFE TREATMENT (MULTI-FRACTIONS) | 60 | 20 | P | Yes |
| 706 | PS | SPECIAL PROCEDURE EDUCATION | 20 |  | P | Yes |
| 867 | QA | ULTRASOUND LOCALIZATION FOR TREATMENT | 7 |  | P | Yes |
| 218X | M | CUT OUT OF TX FIELDS FROM IMMOBILIZATION DEVICE | 20 |  | P | Yes |
| 236X | M | ELECTRON CUT OUT | 20 |  | P | Yes |
| 344X | D | VOLUMETRIC/RAPID ARC PLANNING | 180 |  | P | Yes |
| 868X | QA | PEER REVIEW QA | 10 |  | P | Yes |
| 100 | S | FLUOROSCOPY ONLY IN SIMULATOR | 15 |  | P | Yes |
| 101 | S | SET UP OF ONE FIELD | 20 |  | P | Yes |
| 102 | S | SET UP OF TWO FIELDS | 28 |  | P | Yes |
| 150 | S | CYSTOGRAPHY W CATHETER INSERTED IN SIM | 20 |  | P | Yes |
| 151 | S | CYSTOGRAPHY W/WO CATHETER PREV INSERTED | 10 |  | P | Yes |
| 152 | S | I.V.P. PROCEDURE | 20 |  | P | Yes |
| 160 | S | UPPER G.I. TRACT WITH CONTRAST | 5 |  | P | Yes |
| 161 | S | LOWER G.I. TRACT WITH CONTRAST | 10 |  | P | Yes |
| 170 | S | CONTOUR USING SIMULATOR SSD SCALE | 3 |  | P | Yes |
| 180 | S | SHIELDING BLOCK OR MASK CHECK | 25 |  | P | Yes |
| 190 | S | INTERNAL SOURCE CHECKS | 30 |  | P | Yes |
| 191 | S | PLACEMENT OF VAGINAL DUMMY | 22 |  | P | Yes |
| 206 | M | CUSTOM MADE MOUTHBITE | 15 |  | P | Yes |
| 207 | M | CUSTOM MADE HEAD/NECK REST | 20 |  | P | Yes |
| 208 | M | FITTING OF STEREOTACTIC FRAME(MULTIFRAC) | 60 |  | P | Yes |
| 209 | M | FITTING OF STEREOTACTIC(SINGLE FRACTION) | 30 |  | P | Yes |
| 210 | M | FITTING H&N PLASTIC SHELL + EYE & MOUTH | 15 |  | P | Yes |
| 211 | M | FITTING OF PLASTIC BREAST/BODY SHELL | 15 |  | P | Yes |
| 214 | M | IMMOBILIZATION ADJUSTMENT | 10 |  | P | Yes |
| 220 | M | SHIELDING TEMPLATE CALCULATION | 10 |  | P | Yes |
| 240 | M | SIMPLE FORM WAX TO OUTLINE WITH PATIENT | 15 |  | P | Yes |
| 260 | M | MOULD/PLAQUE APPLICATOR WITH PATIENT | 90 |  | P | Yes |
| 307 | PS | TATTOOING (PMH) | 5 |  | P | Yes |
| 370 | S | TREATMENT PLANNING C.T.SCAN | 30 |  | P | Yes |
| 377 | S | ULTRASOUND FOR LOCALIZATION (PLANNING) | 20 |  | P | Yes |
| 378 | S | GOLD SEED MARKER IMPLANT | 30 |  | P | Yes |
| 379 | S | PLANNING PET CT | 45 |  | P | Yes |
| 380 | S | 4DCT IMAGE ACQUISITION | 60 |  | P | Yes |
| 500 | TS | SUPERFICIAL X-RAY SIMPLE | 11 | 20 | P | Yes |
| 501 | TS | SUPERFICIAL X-RAY WITH INTERNAL SHIELD | 22 | 20 | P | Yes |
| 510 | TD | ORTHOVOLTAGE SIMPLE | 12 | 20 | P | Yes |
| 511 | TD | ORTHOVOLTAGE WITH INTERNAL SHIELD | 22 | 20 | P | Yes |
| 512 | TD | INTRA-OPERATIVE RADIATION THERAPY | 60 | 20 | P | Yes |
| 530 | TL | LINAC DIRECT FIELD | 10 | 11 | P | Yes |
| 531 | TL | LINAC PAIR - TWO FIELDS | 12 | 11 | P | Yes |
| 532 | TL | LINAC THREE FIELDS | 17 | 11 | P | Yes |
| 533 | TL | LINAC FOUR FIELDS | 19 | 11 | P | Yes |
| 535 | TL | LINAC ARC/ROTATION | 12 | 11 | P | Yes |
| 536 | TL | LINAC EXTENDED SSD | 13 | 11 | P | Yes |
| 538 | TL | LINAC WHOLE/HALF BODY | 40 | 11 | P | Yes |
| 540 | TL | LINAC ELECTRONS | 10 | 15 | P | Yes |
| 542 | TL | TOTAL BODY ELECTRONS | 30 | 11 | P | Yes |
| 548 | TL | STEREOTACTIC TREAT(1 FRACT-1HR/ISOCENTR) | 60 | 25 | P | Yes |
| 549 | TL | STEREOTACTIC TREAT(MULTIFRAC-30MIN/ISOC) | 30 | 14 | P | Yes |
| 557 | QA | PORTAL IMAGING ASSESSMENT | 3 |  | P | Yes |
| 558 | QA | PORTAL IMAGING ACQUISITION | 5 |  | P | Yes |
| 560 | TO | INTRACAVITARY SOURCES PREPARATION | 20 |  | P | Yes |
| 561 | TV | INTRAC SOURCES TOT. INVOLVE-AFTERLOADING | 180 | 40 | P | Yes |
| 562 | TO | PREP. CLEAN-UP ONLY INTERCAV SOURCES | 75 |  | P | Yes |
| 563 | TV | LIMITED INVOLVEMENT MAN. AFTER LOADING | 100 | 40 | P | Yes |
| 565 | TV | REMOTE LOADING TOTAL INVOLVEMENT | 150 | 40 | P | Yes |
| 566 | TV | NO DOSIMETRY FOR REMOTE SOURCES LOADING | 90 | 60 | P | Yes |
| 567 | TO | REMOTE LOADING PROG & HOOK UP ONLY | 30 |  | P | Yes |
| 568 | TV | PREP,O.R. PROC,COMP DOSIM,ENDOVAS.TX PMH | 150 | 40 | P | Yes |
| 570 | TT | INTERS. SOURCE MAN. AFTR LOAD FULL INVOL | 200 | 145 | P | Yes |
| 571 | TT | INTERS. SOURCES LIMITED INVOLVEMENT | 90 | 145 | P | Yes |
| 572 | TC | GAMMA KNIFE TREATMENT | 60 | 70 | P | Yes |
| 573 | TT | REMOTE LOADING INTERS.SOURCE FULL INVOLV | 150 | 16 | P | Yes |
| 574 | TT | REMOTE LOADING INTERS.SOURCE LIMT INVOLV | 30 | 11 | P | Yes |
| 575 | TL | TOMOTHERAPY TREATMENT | 30 | 11 | P | Yes |
| 580 | TO | SOURCES - MOULDS INITIAL/FINAL TASKS | 60 |  | P | Yes |
| 581 | TM | DAILY APPLICATION OF SURFACE MOULD | 15 | 40 | P | Yes |
| 582 | TP | PDT TREATMENT | 80 | 150 | P | Yes |
| 592 | TL | IMRT TREATMENT | 45 | 20 | P | Yes |
| 600 | TO | ISOLATION OR STERILE TECHNIQUE | 25 |  | P | Yes |
| 610 | TO | ANAESTHESIA | 1 |  | P | Yes |
| 700 | PS | SCHEDULED SUPPORT FOR REVIEW/OBSERVATION | 8 |  | P | Yes |
| 705 | PS | PT EDUCATION FOR F/L DAY OF TREATMT | 10 |  | P | Yes |
| 710 | PS | UNSCHEDULED SUPPORT | 5 |  | P | Yes |
| 802 | QA | STEREOTACTIC QA PROCEDURE (PMH) | 30 |  | P | Yes |
| 826 | D | EXPOSURE OF TLDS WITH PAT IN SET-UP | 10 |  | P | Yes |
| 865 | QA | ACTIVE BREATHING CONTROL DEVICE | 15 |  | P | Yes |
| 866 | QA | RESPIRATORY GATING TREATMENT | 15 |  | P | Yes |
| 900 | PS | TRANSPORTATION | 12 |  | P | Yes |
| 210X | M | PREP/MANUFACT PLASTIC H/N SHELL W/O PT | 33 |  | P | Yes |
| 211X | M | PREP/MANUFAC PLASTIC BREAST SHELL W/O PT | 60 |  | P | Yes |
| 220X | M | SHIELDING TEMPLATE CALCULATION W/O PT | 10 |  | P | Yes |
| 221X | M | SHIELDING TEMPLATE FROM COMPUTER PLAN | 11 |  | P | Yes |
| 225X | D | MLC DIGITIZATION (10 MIN PER FIELD) | 10 |  | P | Yes |
| 232X | M | SHIELDING BLOCKS CUSTOM MADE DIVERGENT | 100 |  | P | Yes |
| 240X | M | SIMPLE FORM WAX TO OUTLINE W/O PATIENT | 15 |  | P | Yes |
| 251X | D | MANUAL PREP COMPENSATOR W/O PATIENT | 20 |  | P | Yes |
| 261X | M | HAMMERED AND FITTED LEAD SHIELD W/O PT | 20 |  | P | Yes |
| 300X | PS | PRETREATMENT SCHEDULING W/O PT | 10 |  | P | Yes |
| 301X | P | PLAN CONSULTATION | 30 |  | P | Yes |
| 308X | PS | PDT PRE-TREATMENT PROCEDURE | 45 |  | P | Yes |
| 309X | D | COMPUTER PLAN GENERATION 1 FIELD W/O PT | 15 |  | P | Yes |
| 310X | D | COMPUTERIZED PLAN GENERATION 2 FIELDS | 15 |  | P | Yes |
| 315X | D | COMPUTERIZED PLAN STEREOTACTIC RX | 20 |  | P | Yes |
| 320X | D | INITIAL CALCULATION DIRECT FIELD W/O PT | 6 |  | P | Yes |
| 321X | QA | PROGRAM DATA INTO RECORD & VERIFY -TDMS | 15 |  | P | Yes |
| 322X | D | INITIAL CALCULATION 2 FIELDS W/O PT | 10 |  | P | Yes |
| 333X | D | TREAT PLAN/TARGET DEFIN/DOSE COMPUT/EVAL | 180 |  | P | Yes |
| 340X | D | SURFACE MOULD CALCULATIONS | 120 |  | P | Yes |
| 341X | D | INTERNAL SOURCE CALCULATIONS | 120 |  | P | Yes |
| 343X | D | COMPOSITE DISTRIBUTION | 45 |  | P | Yes |
| 375X | D | IMAGE FUSION | 30 |  | P | Yes |
| 376X | D | CT CONTOURING NORMAL STRUCTURES | 30 |  | P | Yes |
| 547X | QA | STEREOTACTIC QA (30 MIN PER ISOCENTER) | 30 |  | P | Yes |
| 559X | QA | PORTAL IMAGING-REFERENCE(10 MIN PER FLM) | 10 |  | P | Yes |
| 650X | TO | PDT ROOM SET-UP | 10 |  | R | Yes |
| 651X | TO | PDT ROOM CLEAN UP | 10 |  | R | Yes |
| 652X | TO | PDT EQUIPMENT CLEANING AND STERILIZING | 20 |  | P | Yes |
| 711X | PS | COORDINATION OF PATIENT MATERIAL | 10 |  | P | Yes |
| 712X | PS | DOCUMENTATION | 5 |  | P | Yes |
| 800X | QA | ROOM AND EQUIPMENT CHECK W/O PT. | 20 |  | R | Yes |
| 802X | QA | STEREOTACTIC CONVERSION | 30 |  | P | Yes |
| 807X | QA | PORTAL IMAGER QA | 15 |  | P | Yes |
| 808X | QA | IMRT LEAF CHECK | 120 |  | P | Yes |
| 810X | QA | LEAK TEST OF SOURCES W/O PT. | 5 |  | R | Yes |
| 811X | QA | WEEKLY SAFE COUNT W/O PT. | 30 |  | R | Yes |
| 825X | D | PREPARATION OF TLDS W/O PT. | 25 |  | P | Yes |
| 826X | D | EXPOSURE OF TLDS W/O PAT (CONTROLS) | 10 |  | R | Yes |
| 827X | D | READ AND OBTAIN RESULTS OF TLDS W/O PT. | 50 |  | P | Yes |
| 840X | D | CALIBRATION OF SEEDS W/O PT. | 45 |  | R | Yes |
| A01X | QA | No changes recommended; follows usual policy/protocol | 1 |  | P | Yes |
| A02X | QA | No changes recommended; deviates from usual policy/protocol | 1 |  | P | Yes |
| A03X | QA | No changes recommended; review policy/protocol for future | 1 |  | P | Yes |
| B01X | QA | Documentation change recommended; revision to plan documentation | 1 |  | P | Yes |
| C1AX | QA | Minor clinical impact: Minor change recommended; target volume coverage | 1 |  | P | Yes |
| C1BX | QA | Minor clinical impact: Minor change recommended; OAR | 1 |  | P | Yes |
| C1CX | QA | Minor clinical impact: Minor change recommended; technique/dosimetry | 1 |  | P | Yes |
| C1DX | QA | Minor clinical impact: Minor change recommended; other | 1 |  | P | Yes |
| C1EX | QA | Minor clinical impact: Major plan change recommended; target volume coverage | 1 |  | P | Yes |
| C1FX | QA | Minor clinical impact: Major plan change recommended; OAR | 1 |  | P | Yes |
| C1GX | QA | Minor clinical impact: Major plan change recommended; technique/dosimetry | 1 |  | P | Yes |
| C1HX | QA | Minor clinical impact: Major plan change recommended; other | 1 |  | P | Yes |
| C2AX | QA | Significant clinical impact: Minor change recommended: target volume coverage | 1 |  | P | Yes |
| C2BX | QA | Significant clinical impact: Minor change recommended: OAR | 1 |  | P | Yes |
| C2CX | QA | Significant clinical impact: Minor change recommended: technique/dosimetry | 1 |  | P | Yes |
| C2DX | QA | Significant clinical impact: Minor change recommended: other | 1 |  | P | Yes |
| C2EX | QA | Significant clinical impact: Major plan change recommended; target volume coverage | 1 |  | P | Yes |
| C2FX | QA | Significant clinical impact: Major plan change recommended; OAR | 1 |  | P | Yes |
| C2GX | QA | Significant clinical impact: Major plan change recommended; technique/dosimetry | 1 |  | P | Yes |
| C2HX | QA | Significant clinical impact: Major plan change recommended; other | 1 |  | P | Yes |
| O01X | QA | No Change recommended; no change implemented | 1 |  | P | Yes |
| O02X | QA | Change recommended; change implemented | 1 |  | P | Yes |
| O03X | QA | Change recommended; no change implemented | 1 |  | P | Yes |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **NHPIP Deactivated Codes** | | | | | | |
| **NHPIP\_ACT\_CD** | **NHPIP\_ACT\_TYPE** | **NHPIP\_ACT\_DESC** | **NHPIP\_DURATION\_UNIT** | **NHPIP\_MAX\_DOSE\_PF** | **NHPIP\_USAGE\_CD** | **NHPIP\_ACTIVE\_STATUS** |
| 103 | S | SET UP OF THREE FIELDS | 36 |  | P | **No** |
| 104 | S | SET UP OF FOUR FIELDS | 44 |  | P | **No** |
| 105 | S | SET UP OF FIVE FIELDS | 52 |  | P | **No** |
| 106 | S | SET-UP 6 FIELDS-SIM (CONFORMAL THERAPY) | 45 |  | P | **No** |
| 110 | S | BREAST TANGENTS & ANGLE CALCULATION | 40 |  | P | **No** |
| 111 | S | ANGLE DOWN PAIR (PMH) | 57 |  | P | **No** |
| 115 | S | SIMULATION OF ASYMMETRIC BREAST | 45 |  | P | **No** |
| 120 | S | EXTENDED SSD | 60 |  | P | **No** |
| 130 | S | WHOLE CNS | 60 |  | P | **No** |
| 200 | M | HEAD AND NECK PLASTER | 44 |  | P | **No** |
| 201 | M | BREAST/BODY SHELL PLASTER | 70 |  | P | **No** |
| 203 | M | FITTING OF PLASTIC BODY SHELL | 20 |  | P | **No** |
| 203X | M | PREP/MANUFACT PLASTIC BODY SHELL W/O PT | 60 |  | P | **No** |
| 204 | M | PRODUCTION OF ALPHA-CRADLE DEVICE | 20 |  | P | **No** |
| 205 | M | AQUAPLAST | 30 |  | P | **No** |
| 212 | S | SCOUT FILM POSITIONING DURING FITTING | 20 |  | P | **No** |
| 213 | M | VERIFICATION/INSPECTION OF SHELL FIT | 5 |  | P | **No** |
| 215 | M | CONTOUR FROM SHELL OR MOULD (PMH) | 20 |  | P | **No** |
| 215X | M | CONTOUR FROM SHELL OR MOULD W/O PT | 20 |  | P | **No** |
| 216X | M | SIMPLE CUT OUT OF TX FIELDS FROM SHELL | 15 |  | P | **No** |
| 217X | M | COMPLEX CUT OUT OF TX FIELDS FROM SHELL | 50 |  | P | **No** |
| 222X | D | PB MARK-UP ON FILM (5 MIN PER FILM) | 5 |  | P | **No** |
| 223X | D | MLC WORK-UP (5 MIN PER FIELD) | 5 |  | P | **No** |
| 224X | D | MLC PROGRAMMING (3 MIN PER FIELD) | 3 |  | P | **No** |
| 230X | M | STANDARD SHIELDING BLOCKS NON DIVERGENT | 20 |  | P | **No** |
| 231X | M | SHIELDING BLKS CUSTOM-MADE NON-DIVERGENT | 50 |  | P | **No** |
| 233X | M | MODIF. EXISTING CERROBEND SHIELDS SIMPLE | 15 |  | P | **No** |
| 234 | M | CERROBEND SHIELD MODIFIC. COMPLEX (PMH) | 60 |  | P | **No** |
| 241 | M | COMPLEX WAX COMPENSATOR WITH PATIENT | 50 |  | P | **No** |
| 241X | M | FORM WAX EMBED BASEPLATE W/O PATIENT | 50 |  | P | **No** |
| 242 | M | CUSTOM MADE CERROBEND,EYE (PMH) | 15 |  | P | **No** |
| 250 | D | AUTOMATED PREP COMPENSATOR WITH PATIENT | 20 |  | P | **No** |
| 250X | D | AUTOMATED PREP COMPENSATOR W/O PATIENT | 20 |  | P | **No** |
| 251 | D | MANUAL PREP COMPENSATOR WITH PATIENT | 20 |  | P | **No** |
| 252X | M | AUTO PREP LEAD,WAX COMPENSATOR W/O PT | 1 |  | P | **No** |
| 253 | M | MANUAL PREP LEAD,WAX COMPENSATOR WITH PT | 10 |  | P | **No** |
| 253X | M | MANUAL PREP LEAD,WAX COMPENSATOR W/O PT | 10 |  | P | **No** |
| 254X | D | CALCULATIONS IN COMPENSATOR PREP W/O PT | 5 |  | P | **No** |
| 259 | M | PREPARATION PB SHIELD OR CUT-OUT | 10 |  | P | **No** |
| 261 | M | HAMMERED AND FITTED LEAD SHIELD WITH PT | 20 |  | P | **No** |
| 262X | M | MANUFACT CUPROUS OXIDE | 35 |  | P | **No** |
| 263 | M | SURFACE MOULD OR PLAQUE APPLICATOR (PMH) | 180 |  | P | **No** |
| 264 | M | PREP EDUCAT'N + MOULD FABR,INC.CATHETERS | 180 |  | P | **No** |
| 300 | PS | PRETREATMENT PROCEDURE SCHEDULING | 10 |  | P | **No** |
| 312X | D | COMPUTERIZED PLAN GENERATION 4 FIELDS | 45 |  | P | **No** |
| 313X | D | COMPUTERIZED PLAN GENERATION EXTEND SSD | 120 |  | P | **No** |
| 314X | D | COMPUTERIZED PLAN GENERATION WHOLE CNS | 20 |  | P | **No** |
| 316X | D | COMPUTERIZED PLAN 6 FIELDS (CONFORMAL) | 270 |  | P | **No** |
| 317X | D | 4 FLD CONFORMAL DISTRIBUTION | 240 |  | P | **No** |
| 318X | D | 5 FLD DISTRIBUTION NON-CONFORMAL | 120 |  | P | **No** |
| 319X | D | 6 FLD DISTRIBUTION NON-CONFORMAL | 150 |  | P | **No** |
| 320 | D | INITIAL CALCULATION DIRECT FIELD W PT | 6 |  | P | **No** |
| 324X | D | INITIAL CALCULATION 4 FIELDS W/O PT | 15 |  | P | **No** |
| 325X | D | INITIAL CALCULATION FOR ARCS/ROTATIONS | 15 |  | P | **No** |
| 326X | D | COMPLEX CALCU,SHIELD,WEDGE EXTENDED SSD | 5 |  | P | **No** |
| 327 | D | STEREOTACTIC CALC (30 MIN PER ISOCENTER) | 30 |  | P | **No** |
| 328 | D | 6 FLD INITIAL CALC CONFORMAL | 30 |  | P | **No** |
| 329X | D | 6 FLD INITIAL CALC | 20 |  | P | **No** |
| 330X | D | TIMCAL, SIMPLE (PMH) | 10 |  | P | **No** |
| 331X | D | TIMCAL, COMPLEX (PMH) | 20 |  | P | **No** |
| 332X | D | CALCULATION,EQ.SQUARES "IRREG" (PMH) | 25 |  | P | **No** |
| 334X | D | 4 FLD INITIAL CALC NON-COPLANAR | 15 |  | P | **No** |
| 335X | D | 5 FLD INITIAL CALC | 20 |  | P | **No** |
| 336X | D | 5 FLD INITIAL CALC CONFORMAL | 25 |  | P | **No** |
| 339 | D | 8 FLD DISTRIBUTION | 250 |  | P | **No** |
| 350 | P | TOTAL/HEMI BODY PLANNING ON TRMT UNIT | 15 |  | P | **No** |
| 360 | D | TOT/HEMI BODY DOSIM CALC FOR BOLUS THICK | 25 |  | P | **No** |
| 371X | P | CT RECONSTRUCTION (PMH) | 15 |  | P | **No** |
| 372X | P | CT/SIMULATOR RECONSTRUCTION | 60 |  | P | **No** |
| 373 | S | RX PLANNING CT STEREOTACTIC | 60 |  | P | **No** |
| 374 | P | KIDNEY LOCALIZATION | 45 |  | P | **No** |
| 374X | P | KIDNEY LOCALIZATION | 10 |  | P | **No** |
| 381 | D | AUTOMATED CONTOUR FROM SSD SCALE | 10 |  | P | **No** |
| 382 | D | COMPUTERIZED CONTOUR FROM TP/CT | 20 |  | P | **No** |
| 390 | M | CUT-OUTS OF FOAM BLOCKS,ASSESS OF X-RAY | 20 |  | P | **No** |
| 503 | TS | RT 50 TREATMENT PAPPION (PMH) | 22 | 30 | P | **No** |
| 519 | TL | 8 FLD LINAC TREATMENT | 30 | 11 | P | **No** |
| 520 | TC | CO-60 DIRECT FIELD | 12 | 11 | P | **No** |
| 521 | TC | CO-60 PAIR - TWO FIELDS | 15 | 11 | P | **No** |
| 522 | TC | CO-60 THREE FIELDS | 20 | 11 | P | **No** |
| 523 | TC | CO-60 FOUR FIELDS | 26 | 11 | P | **No** |
| 524 | TC | CO-60 FIVE FIELDS | 30 | 11 | P | **No** |
| 525 | TC | CO-60 ARC/ROTATION | 13 | 11 | P | **No** |
| 526 | TC | CO-60 EXTENDED SSD | 20 | 11 | P | **No** |
| 527 | TC | COMPLEX EXTENDED SSD COBALT | 35 | 11 | P | **No** |
| 528 | TC | CO-60 WHOLE/HALF BODY | 40 | 11 | P | **No** |
| 529 | TC | CO-60 WHOLE CNS | 30 | 11 | P | **No** |
| 537 | TL | LINAC COMPLEX EXTENDED SSD | 30 | 11 | P | **No** |
| 539 | TL | LINAC WHOLE CNS | 30 | 11 | P | **No** |
| 541 | TL | 6 FIELD-6 FIELDS/ISOCENTER | 30 | 11 | P | **No** |
| 550 | QA | PORT (CHECK) FILM | 5 |  | P | **No** |
| 551X | QA | DEV.,LABEL,VERIFY CHECK PORT FILM | 5 |  | P | **No** |
| 552 | QA | DIGITAL COPYING EXPANDED 5-MIN PER PHOTO | 5 |  | P | **No** |
| 552X | QA | FILM COPYING (EXPANDED-5 MIN PER FILM) | 5 |  | B | **No** |
| 553 | QA | PLAN CHECK, SIMPLE 1 OR 2 FIELDS | 5 |  | P | **No** |
| 554X | QA | MLC QA (3 MIN PER FIELD) | 3 |  | P | **No** |
| 555 | QA | PLAN CHECK, 3 OR MORE FIELDS | 15 |  | P | **No** |
| 556 | QA | LIVE PORTAL IMAGING | 7 |  | P | **No** |
| 590 | TI | RADIONUCLIDE THERAPY 131I | 90 | 40 | P | **No** |
| 591 | TI | RADIONUCLIDE THERAPY 32P | 32 | 40 | P | **No** |
| 620 | TO | HYPERBARIC OXYGEN PROCEDURE | 1 |  | P | **No** |
| 640 | TO | HYPERTHERMIA | 1 |  | P | **No** |
| 690 | PS | BLOOD IRRADIATION | 15 |  | B | **No** |
| 801 | QA | QA IMMOBILIZATION DEVICE (PMH) | 30 |  | P | **No** |
| 803 | QA | QA HYPERTHERMIA EQUIPMENT (PMH) | 15 |  | R | **No** |
| 804 | QA | CALIBRATION TEMPERATURE PROBES (PMH) | 20 |  | R | **No** |
| 812X | QA | WEEKLY CHANGE OF FLETCHER INSERTS W/O P. | 5 |  | R | **No** |
| 820X | QA | CALIBRATION OF ALL UNITS INCLUDING RT 50 | 30 |  | R | **No** |
| 850 | QA | GENERATE DISTRIBUTIONS (PMH) | 120 |  | R | **No** |
| **329X** | D | 6 FIELD INITIAL CALCULATION | 30 |  | P | **No** |

# Appendix 2: Health Care Provider (HCP) Specialty Codes

The list below contains all Specialty codes that are included in the metrics described above (last updated for FY 2014). The list is reviewed each fiscal year. For an up-to-date list, please contact [informatics@cancercare.on.ca](mailto:informatics@cancercare.on.ca)

| **HCP\_SPECIALTY\_CD** | **HCP\_SPECIALTY\_DESC** |
| --- | --- |
| 00000 | Physician Group |
| 00001 | Family Practice/General Practice Medicine |
| 00002 | Community Medicine |
| 00003 | Emergency Medicine |
| 00004 | Trauma Medicine |
| 00006 | Resident |
| 00010 | Internal Medicine |
| 00011 | Clinical Immunology and Allergy |
| 00012 | Cardiology |
| 00013 | Dermatology |
| 00014 | Endocrinology and Metabolism |
| 00015 | Gastroenterology |
| 00016 | Nephrology |
| 00017 | Neurology |
| 00018 | Respirology |
| 00019 | Rheumatology |
| 00020 | Pediatrics |
| 00021 | Pediatric Immunology and Allergy |
| 00022 | Pediatric Cardiology |
| 00023 | Pediatric Dermatology |
| 00024 | Pediatric Endocrinology and Metabolism |
| 00025 | Pediatric Gastro-Enterology |
| 00026 | Pediatric Nephrology |
| 00027 | Pediatric Neurology |
| 00028 | Pediatric Respirology |
| 00029 | Pediatric Rheumatology |
| 00030 | General Surgery |
| 00031 | Cardiac Surgery |
| 00032 | Neurosurgery |
| 00034 | Orthopedic Surgery |
| 00035 | Plastic Surgery |
| 00036 | Thoracic Surgery |
| 00037 | Vascular Surgery |
| 00038 | Cardiothoracic Surgery |
| 00039 | Urology |
| 00040 | Pediatric General Surgery |
| 00041 | Pediatric Cardiac Surgery |
| 00042 | Pediatric Neurosurgery |
| 00044 | Pediatric Orthopedic Surgery |
| 00045 | Pediatric Plastic Surgery |
| 00046 | Pediatric Thoracic Surgery |
| 00047 | Pediatric Vascular Surgery |
| 00048 | Pediatric Cardiothoracic Surgery |
| 00049 | Pediatric Urology |
| 00050 | Obstetrics and Gynecology |
| 00051 | Gynecologic Reproductive Endocrinology and Infertility |
| 00052 | Urogynaecology |
| 00053 | Urogynaecology |
| 00054 | Maternal-Fetal Medicine |
| 00055 | Critical Care Medicine |
| 00056 | Clinical Pharmacology |
| 00057 | Anaesthesiology |
| 00058 | Pediatric Anaesthesiology |
| 00059 | Colorectal Surgery |
| 00060 | Otolaryngology |
| 00061 | Pediatric Otolaryngology |
| 00062 | Ophthalmology |
| 00063 | Pediatric Ophthalmology |
| 00064 | Psychiatry |
| 00065 | Pediatric Psychiatry |
| 00066 | Hematology |
| 00067 | Pediatric Hematology |
| 00068 | Clinical Immunologist |
| 00070 | Physical Medicine and Rehabilitation |
| 00072 | Geriatric Medicine |
| 00073 | General Surgical Oncology |
| 00074 | Medical Oncology |
| 00075 | Radiation Oncology |
| 00076 | Gynecologic Oncology |
| 00077 | General Pathology |
| 00078 | Medical Microbiology |
| 00080 | Diagnostic Radiology |
| 00082 | Medical Genetics |
| 00083 | Anatomical Pathology |
| 00085 | Hematological Pathology |
| 00086 | Neuropathology |
| 00089 | Nuclear Medicine |
| 00090 | Medical Biochemistry |
| 00092 | Pediatric Radiology |
| 00093 | Neuroradiology |
| 00096 | Infectious Diseases |
| 00097 | Neonatal-Perinatal Medicine |
| 00120 | Pediatric Development |
| 00121 | Palliative Medicine |
| 00122 | Adolescent Medicine |
| 00123 | Forensic Pathology |
| 00124 | Forensic Psychiatry |
| 00125 | Geriatric Psychiatry |
| 00126 | Occupational Medicine |
| 00127 | Paediatric Emergency Medicine |
| 00128 | Transfusion Medicine |
| 00129 | General Internal Medicine |
| 00130 | Pain Medicine |
| 00999 | Palliative Care Physician |
| 01000 | Dentistry Group |
| 01001 | Dentistry |
| 01002 | Dental Surgery |
| 01003 | Oral Surgery |
| 01004 | Orthodontistry |
| 01005 | Paedodontistry |
| 01006 | Periodontistry |
| 01007 | Oral Pathology |
| 01008 | Endodontistry |
| 01009 | Oral Radiology |
| 01010 | Dental Hygiene Technology |
| 01011 | Denturology |
| 01012 | Pediatric Oral Surgery |
| 01013 | Pediatric Dentistry |
| 01014 | Prosthodontics |

# Appendix 3 – NHPIP Codes submitted to DataBook in 2013-2014 and used to calculate ALR metrics for Radiation Therapy

(1=counted; 0=not counted)

| NHPIP CODE | R1 | R2 | R3 | R4 | R7 | R8 | R9 | R10 | RLE | R11 | R12 | R13 | R14 | R15 | R17 | R18 | R19 | R20 | R21 | R23 | R24 | R25 | R26 | BRACHY FRACTIONS | R40 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 100 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 101 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 102 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 107 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 150 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 151 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 152 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 160 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 161 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 170 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 180 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 190 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 191 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 202 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 206 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 207 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 208 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 209 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 210 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 210X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 211 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 211X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 214 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 218X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 220 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 220X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 221X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 225X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 232X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 235X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 236X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 240 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 240X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 251X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 260 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 261X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 290X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 300X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 301X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 305 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 306 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 307 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 308X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 309X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 310X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 311X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 315X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 320X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 321X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 322X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 323X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 327X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 333X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 338X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 340X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 341X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 342X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 343X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 344X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 361X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 368 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 369 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 370 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 371 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 372 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 375X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 376X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 377 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 378 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 379 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 380 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 500 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 |
| 501 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 |
| 510 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 |
| 511 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 |
| 530 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 |
| 531 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 |
| 532 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 |
| 533 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 |
| 534 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 |
| 535 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 |
| 536 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 |
| 538 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 |
| 540 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 |
| 542 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 |
| 547X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 548 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 |
| 549 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 |
| 553X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 555X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 557 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 558 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 559X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 560 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 561 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 |
| 562 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 563 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 |
| 565 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 |
| 566 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 |
| 567 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 570 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 |
| 571 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 |
| 572 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 |
| 573 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 |
| 574 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 |
| 575 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 |
| 580 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 581 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 |
| 582 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 |
| 592 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  |  |
| 592 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 |
| 594 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 |
| 594 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 |
| 596 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 |
| 596 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 |
| 597 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 |
| 597 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 |
| 600 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 610 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 652X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 700 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 705 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 706 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 710 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 711X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 712X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 800X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 802X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 806X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 807X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 808X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 810X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 825X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 826 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 826X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 827X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 830X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 840X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 860 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 861 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 861 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  |  |
| 862 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 862 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  |  |
| 863 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 863 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  |  |
| 864 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 865 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 866 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 867 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 868X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 900 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 900 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  |  |
| A01X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| O01X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |