

## SENTINEL DISTRIBUTED QUERY TOOL SUMMARY TABLE DESCRIPTIONS

### Sentinel Operations Center

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Sentinel is sponsored by the [U.S. Food and Drug Administration \(FDA\)](#) to monitor the safety of FDA-regulated medical products. Sentinel is one piece of the [Sentinel Initiative](#), a multi-faceted effort by the FDA to develop a national electronic system that complements previously existing methods of safety surveillance. Sentinel Collaborators include Data and Academic Partners that provide access to health care data and ongoing scientific, technical, methodological, and organizational expertise. The Sentinel Coordinating Center is funded by the FDA through the Department of Health and Human Services (HHS) Contract number HHSF223201400030I.

# Sentinel Distributed Query Tool Summary Table Descriptions

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## Document History

The following table is a revision history for this document.

Revision	Author(s)	Date	Description
2.0	Robert Rosofsky, Malcolm Rucker	February, 2016	Updated document for this v2.0 rewrite of programming package, with clarity on business rules and descriptions

## I. QUERY TOOL OVERVIEW

The Sentinel Distributed Query Tool is designed to facilitate distributed querying within the Sentinel network. It is based on the PopMedNet™ software application ([www.popmednet.org](http://www.popmednet.org)). The Sentinel Distributed Query Tool allows simple and rapid menu-driven querying of pre-populated summary tables. The following sections describe the structure of the summary tables that are currently supported by the Sentinel Distributed Query Tool software.

Each Sentinel Data Partner must install the Sentinel Distributed Query Tool software, establish a network connection using the Sentinel Distributed Query Tool secure web-based portal, and use the application to respond to queries sent by the Sentinel Operations Center (SOC) staff on behalf of the FDA.

## II. SUMMARY TABLE OVERVIEW

The system supports three broad query types: prevalent queries, incident queries, and most frequent utilization queries. The nine prevalence summary tables represent prevalence counts of diagnoses (3, 4, and 5 digit ICD-9-CM), procedures (3 and 4 digit ICD-9-CM and HCPCS/CPT4), drug exposures (ingredient name and drug category), and enrollment. The three incidence summary tables represent diagnoses (3-digit ICD-9-CM) and drug exposures (ingredient name and drug category). The most frequent utilization queries return the most frequently observed utilization (drug exposures, diagnoses, or procedures) defined by events or number of users by age group, sex, and year within the prevalence tables.

The tables are described below. The summary tables are created through distributed SAS programs written by the SOC and executed against the Sentinel Distributed Database held by each Data Partner. Each Data Partner is responsible for maintaining the summary tables behind their firewalls and responding to distributed queries using the Sentinel Distributed Query Tool software.

The code set used for the descriptions for HCPCS/CPT4, ICD-9-CM Diagnosis (3, 4 and 5 digit) and ICD-9-CM Procedure (3 and 4 digit) query types are provided by Ingenix, Inc. The code set used for the descriptions for the drug exposures (ingredient name and drug category) query types are provided by First DataBank, Inc. The query tool software uses the short name description, as opposed to the long name description, to match code names. The Sentinel Operations Center compiles a list of diagnosis and procedure codes unique to each Data Partner's code availability.

## III. DEFINITIONS

This section provides high-level concepts used in creating the summary tables. Details of each summary table are in the next section. Please contact the Sentinel Operations Center to discuss specific questions about definitions.

**Age Group:** The system uses the following age groups: 0-1, 2-4, 5-9, 10-14, 15-18, 19-21, 22-44, 45-64, 65-74, and 75+. Age is defined as the age as of the beginning of a period (i.e., calendar year or calendar quarter) in the case of prevalence tables and the date of first utilization for incident tables. For the enrollment table, age is defined as age as of the beginning of the period (i.e., calendar year or calendar quarter).

**Sex:** The system uses the following categories for sex: male and female.

- Member:** A member is defined as a person who is cared for by the institution. For utilization counts a “member” is a person who received care. For enrollment, a member is a covered individual at any time during the period in question. A “member” is a health insurance concept referring to an individual for whom the insurer has some responsibility for reimbursement of their medical coverage during a defined period. Non-insurer-based settings such as medical group practices should use a definition appropriate to their setting and document the definition.
- Days Covered:** Days covered is included in the Enrollment table. It represents the sum, by strata, of the totals number of days of enrollment for each member in the strata.
- Stratum:** A stratum is a combination of age, sex, period, and setting (if applicable). Each combination is presented in the result tables as a separate row. Denominators are pulled from the Enrollment table to get the relevant rates across participating Data Partners.
- Event Counts:** Counts of events for pharmacy dispensing (i.e., dispensing) and medical utilization (i.e., visits) are derived from the relevant utilization tables in the Sentinel Distributed Database.

## IV. DESCRIPTION OF SUMMARY TABLES

Each of the 13 tables available via the Sentinel Distributed Query Tool is described below.

### A. AGE GROUPS TABLE

The age groups table provides a key for the age group stratifications within each summary table. This table provides a unique Age Group ID for one of the ten following age groups: ‘0-1’, ‘2-4’, ‘5- 9’, ‘10-14’, ‘15-18’, ‘19-21’, ‘22-44’, ‘45-64’, ‘65-74’ and ‘75+’. This table is used to minimize the complexity of the query created by the Sentinel Query Tool. The table is created as part of the distributed SAS code. The file will not change with each data refresh, but it must be held in the local summary table database at all times to enable the query process.

#### ***Table name, variables, and permissible formats for the Enrollment table:***

Summary table name: AGE\_GROUPS

ID: Numeric format

StratXX\_name: Character format

StratXX\_sort\_order: Numeric format

**Table 1.** Age groups table

Id	strat10_name	strat10_sort_order	strat7_name	strat7_sort_order	strat4_name	strat4_sort_order	strat2_name	strat2_sort_order
1	0-1	10	0-4	10	0-21	10	Under 65	10
2	2-4	20	0-4	10	0-21	10	Under 65	10
3	5-9	30	5-9	20	0-21	10	Under 65	10
4	10-14	40	10-18	30	0-21	10	Under 65	10
5	15-18	50	10-18	30	0-21	10	Under 65	10
6	19-21	60	19-21	40	0-21	10	Under 65	10
7	22-44	70	22-44	50	22-44	20	Under 65	10
8	45-64	80	45-64	60	45-64	30	Under 65	10
9	65-74	90	65+	70	65+	40	65+	20
10	75+	100	65+	70	65+	40	65+	20

**B. ENROLLMENT SUMMARY TABLE**

The enrollment table provides a count of unique members and days covered as defined above. The member count and days covered are stratified by age group, sex, year (or year-quarter), and the combination of drug coverage status and medical coverage status. The count of unique members or days covered can be used as denominators to calculate crude prevalence rates.

**Table name, variables, and permissible formats for the Enrollment table:**

Summary table name: ENROLLMENT

- Age\_Group: '0-1', '2-4', '5-9', '10-14', '15-18', '19-21', '22-44', '45-64', '65-74', '75+'
- Sex: 'M', 'F' (character format)
- Year: 6 digit (character format), enabling YYYY and YYYYQ# patterns
- DrugCov: 'Y', 'N' (character format)
- MedCov: 'Y', 'N' (character format)
- Members: Numeric format
- DaysCovered: Numeric format
- Age\_Group\_Id: Numeric format

**Table 2.** Sample of the Enrollment table

Age Group	Sex	Year	MedCov	DrugCov	Members	DaysCovered	Age Group Id
0-1	F	2004	Y	Y	120605	17933289	1
0-1	F	2005	Y	Y	134638	30496475	1
0-1	F	2006	Y	Y	139252	31003878	1
0-1	F	2007	Y	N	141430	31110397	1
0-1	F	2004Q1	Y	Y	30151	4483322	1
0-1	F	2005Q2	Y	Y	33659	7624118	1
0-1	M	2006Q3	Y	Y	34813	7750969	1
0-1	M	2007Q4	Y	N	35357	7777599	1
10-14	F	2004	Y	Y	150354	24239986	4
10-14	F	2005	Y	Y	173232	47207680	4
10-14	F	2006	Y	Y	166158	44204575	4
10-14	F	2007	Y	Y	154123	40027516	4
10-14	F	2004Q1	Y	Y	37588	6059996	4
10-14	F	2005Q2	Y	Y	43308	11801920	4

Age Group	Sex	Year	MedCov	DrugCov	Members	DaysCovered	Age Group Id
10-14	M	2006Q3	Y	Y	41539	11051143	4
10-14	M	2007Q4	Y	N	38530	10006879	4
15-18	F	2004	Y	Y	105795	16401894	5
15-18	F	2005	Y	Y	132165	33731727	5
15-18	F	2006	Y	Y	132831	33157514	5
15-18	F	2007	N	Y	124262	30366662	5

### C. ICD-9-CM DIAGNOSIS SUMMARY TABLE (3 DIGIT)

The 3 digit ICD-9-CM diagnosis table provides a count of unique members with a diagnosis observed during the period and a count of events experienced within each stratum.

The counts are stratified by setting of visit (inpatient, outpatient, emergency department, any), age group, sex, year, and 3 character ICD-9-CM code. Members are categorized into visit setting by the encounter type: **inpatient** includes acute inpatient hospital stay and non-acute institutional stays; **emergency department** includes emergency department encounters; **outpatient** includes ambulatory visit, telephone encounters, email encounters and other outpatient encounters; **Any** includes the members with a visit in any of the care settings. For example, if a member has the same diagnosis code observed across multiple care settings during a period, the member will be counted once in the member count and all the visits with the code will be summed for the event counts.

For an event and member to be counted, the member must have at least one day of both medical and drug coverage in the Period (i.e., year) in which the event occurred. A day with medical coverage and a day with drug coverage need not be the same day.

#### **Table name, variables, and permissible formats for the 3-digit ICD-9-CM Diagnosis table:**

Summary table name: ICD9\_DIAGNOSIS

Age\_Group: '0-1', '2-4', '5-9', '10-14', '15-18', '19-21', '22-44', '45-64', '65-74', '75+' (character format)  
 Sex: 'M', 'F' (character format)  
 Period: 4 digit year (character format)  
 Code: 3 character code XXX (character format)  
 DXname: 35 digit character format  
 Setting: 'IP', 'ED', 'AV', 'AN' (character format)  
 Members: Numeric format  
 Events: Numeric format  
 Age\_Group\_ID: Numeric format

**Table 3.** Sample of the 3-digit ICD-9-CM diagnosis table

Age Group	Sex	Period	Code	DxName	Setting	Members	Events	Age Group ID
0-1	F	2004	003	OTHER SALMONELLA INFECTIONS	AN	63	111	1
0-1	F	2004	003	OTHER SALMONELLA INFECTIONS	AV	50	87	1
0-1	F	2004	003	OTHER SALMONELLA INFECTIONS	ED	2	2	1
10-14	F	2007	556	ULCERATIVE COLITIS	AN	26	64	4
10-14	F	2007	556	ULCERATIVE COLITIS	AV	15	41	4
10-14	F	2007	556	ULCERATIVE COLITIS	ED	1	1	4
10-14	F	2007	556	ULCERATIVE COLITIS	IP	16	22	4
10-14	M	2007	802	FRACTURE OF FACE BONES	AN	124	294	4

Age Group	Sex	Period	Code	DxName	Setting	Members	Events	Age Group ID
10-14	M	2007	802	FRACTURE OF FACE BONES	AV	112	180	4
10-14	M	2007	802	FRACTURE OF FACE BONES	ED	66	72	4
10-14	M	2007	802	FRACTURE OF FACE BONES	IP	20	42	4
75+	M	2009	V44	ARTIFICIAL OPENING STATUS	ED	48	53	10
75+	M	2009	V44	ARTIFICIAL OPENING STATUS	ED	1	1	10
75+	M	2009	V44	ARTIFICIAL OPENING STATUS	IP	47	52	10
75+	M	2009	V45	OTHER POSTPROCEDURAL STATUS	AN	536	975	10
75+	M	2009	V45	OTHER POSTPROCEDURAL STATUS	AV	228	634	10
75+	M	2009	V45	OTHER POSTPROCEDURAL STATUS	ED	6	6	10

#### D. ICD-9-CM DIAGNOSIS SUMMARY TABLE (4 DIGIT)

The 4 digit ICD-9-CM diagnosis table provides a count of unique members with a diagnosis observed during the period and a count of events experienced within each stratum. The counts are stratified by setting of visit as described above (3-digit diagnosis summary tables).

For an event and member to be counted, the member must meet enrollment requirements as described above (3-digit diagnosis summary tables).

#### **Table name, variables, and permissible formats for the 4 digit ICD-9-CM Diagnosis table:**

Summary table name: ICD9\_DIAGNOSIS\_4\_DIGIT

Age\_Group: '0-1', '2-4', '5-9', '10-14', '15-18', '19-21', '22-44', '45-64', '65-74', '75+' (character format)

Sex: 'M', 'F' (character format)

Period: 4 digit year (character format)

Code: 4 character code XXXX (character format)

DXname: 35 digit character format

Setting: 'IP', 'ED', 'AV', 'AN' (character format)

Members: Numeric format

Events: Numeric format

Age Group ID: Numeric format

**Table 4.** Sample of the 4-digit ICD-9-CM diagnosis table

Age Group	Sex	Period	Code	DxName	Setting	Members	Events	Age Group ID
0-1	F	2004	0041	SHIGELLA FLEXNERI	AN	1	2	1
0-1	F	2004	0041	SHIGELLA FLEXNERI	AV	1	2	1
10-14	M	2008	2701	PHENYLKETONURIA	AN	2	2	4
10-14	M	2008	2701	PHENYLKETONURIA	AV	1	1	4
10-14	M	2008	2701	PHENYLKETONURIA	IP	1	1	4
45-64	M	2006	3592	MYOTONIC DISORDERS	AV	8	30	8
45-64	M	2006	3592	MYOTONIC DISORDERS	IP	2	2	8
45-64	M	2006	3594	TOXIC MYOPATHY	AN	3	4	8
45-64	M	2006	3594	TOXIC MYOPATHY	AV	3	4	8
75+	F	2007	9058	LATE EFFECT OF TENDON INJURY	AN	2	2	10
75+	F	2007	9058	LATE EFFECT OF TENDON INJURY	IP	2	2	10
75+	F	2007	9061	LATE EFF OPEN WND EXTREM	AN	1	1	10
75+	F	2007	9061	LATE EFF OPEN WND EXTREM	AV	1	1	10

## E. ICD-9-CM DIAGNOSIS SUMMARY TABLE (5 DIGIT)

The 5 digit ICD-9-CM diagnosis table provides a count of unique members with a diagnosis observed during the period and a count of events experienced within each stratum. The counts are stratified by setting of visit as described above (3-digit diagnosis summary tables).

For an event and member to be counted, the member must meet enrollment requirements as described above (3-digit diagnosis summary tables).

### **Table name, variables, and permissible formats for the 5 digit ICD-9-CM Diagnosis table:**

Summary table name: ICD9\_DIAGNOSIS\_5\_DIGIT

Age\_Group: '0-1', '2-4', '5-9', '10-14', '15-18', '19-21', '22-44', '45-64', '65-74', '75+' (character format)

Sex: 'M', 'F'(character format)

Period: 4 digit year (character format)

Code: 5 character code XXXXX (character format)

DXname: 35 digit character format

Setting: 'IP', 'ED', 'AV', 'AN'(character format)

Members: Numeric format

Events: Numeric format

Age\_Group\_Id: Numeric format

**Table 5.** Sample of the 5-digit ICD-9-CM diagnosis table

Age_Group	Sex	Period	Code	DxName	Setting	Members	Events	Age_Group_ID
0-1	F	2004	00322	SALMONELLA PNEUMONIA	AN	2	3	1
0-1	F	2004	00322	SALMONELLA PNEUMONIA	AV	1	2	1
10-14	M	2006	78321	LOSS OF WEIGHT	ED	2	2	4
10-14	M	2006	78321	LOSS OF WEIGHT	IP	16	16	4
10-14	M	2006	78322	UNDERWEIGHT	AN	50	82	4
65-74	M	2005	36731	ANISOMETROPIA	AN	1	1	9
65-74	M	2005	36731	ANISOMETROPIA	AV	1	1	9
65-74	M	2005	36732	ANISEIKONIA	AN	1	1	9
45-64	M	2009	72981	SWELLING OF LIMB	AN	1441	1885	8
45-64	M	2009	72981	SWELLING OF LIMB	AV	934	1135	8
45-64	M	2009	72981	SWELLING OF LIMB	ED	199	212	8
75+	F	2008	72633	OLECRANON BURSITIS	AN	12	17	10
75+	F	2008	72633	OLECRANON BURSITIS	AV	10	15	10
75+	F	2008	72633	OLECRANON BURSITIS	ED	1	1	10

## F. HCPCS SUMMARY TABLE

The HCPCS table provides a count of unique members who had a procedure observed during the period and a count of events experienced within each stratum.

The counts are stratified by setting of visit as defined above (3-digit diagnosis summary tables), age group, sex, year, and HCPCS code. Note that as CPT4 (Common Procedural Terminology) codes are considered HCPCS Level 1 codes, these will be included. Members are categorized into visit setting as described above (3-digit diagnosis summary tables).

For an event and member to be counted, the member must meet enrollment requirements as described above (3-digit diagnosis summary tables).



**Table name, variables, and permissible formats for the HCPCS Procedure table:**

Summary table name: HCPCS

Age\_Group: '0-1', '2-4', '5- 9', '10-14', '15-18', '19-21', '22-44', '45-64', '65-74', '75+' (character format)  
 Sex: 'M', 'F' (character format)  
 Period: 4 digit year (character format)  
 Code: 5 character code XXXXX (character format)  
 PxName: 35 digit character format  
 Setting: 'IP', 'ED', 'AV', 'AN' (character format)  
 Members: Numeric format  
 Events: Numeric format  
 Age\_Group\_Id: Numeric format

**Table 6.** Sample of the HCPCS procedure code table

Age_Group	Sex	Period	Code	PxName	Setting	Members	Events	Age_Group_ID
0-1	F	2004	00148	ANESTH EYE EXAM	AN	17	24	1
0-1	F	2004	00148	ANESTH EYE EXAM	AV	15	20	1
15-18	M	2004	20950	FLUID PRESSURE MUSCLE	AV	1	1	5
15-18	M	2004	21025	EXCISION OF BONE LOWER JAW	AN	5	5	5
15-18	M	2004	21025	EXCISION OF BONE LOWER JAW	AV	5	5	5
22-44	F	2006	D9420	HOSPITAL CALL	AN	8	8	7
22-44	F	2006	D9420	HOSPITAL CALL	AV	8	8	7
45-64	M	2007	84295	ASSAY OF SERUM SODIUM	AN	647	1209	8
45-64	M	2007	84295	ASSAY OF SERUM SODIUM	AV	461	981	8
75+	M	2009	75940	X-RAY PLACEMENT VEIN FILTER	AV	3	3	10
75+	M	2009	75940	X-RAY PLACEMENT VEIN FILTER	IP	10	10	10

**G. ICD-9-CM PROCEDURE SUMMARY TABLE (3 DIGIT)**

The ICD-9-CM 3 digit procedure table provides a count of unique members with an ICD-9-CM coded procedure observed during the period and a count of events in each stratum.

The counts are stratified by setting of visit as defined above (3-digit diagnosis summary tables), age group, sex, year, and 3 digit ICD-9-CM procedure code (format XXX). Members are categorized into visit setting as described above (3-digit diagnosis summary tables).

For an event and member to be counted, the member must meet enrollment requirements as described above (3-digit diagnosis summary tables).

**Table name, variables, and permissible formats for the ICD-9-CM Procedure table:**

Summary table name: ICD9\_PROCEDURE

Age\_Group: '0-1', '2-4', '5- 9', '10-14', '15-18', '19-21', '22-44', '45-64', '65-74', '75+' (character format)  
 Sex: 'M', 'F' (character format)  
 Period: 4 digit year (character format)  
 Setting: 'IP', 'ED', 'AV', 'AN' (character format)  
 Code: 3 digit code XXX (character format)  
 PxName: 35 digit character format  
 Members: Numeric format

Events: Numeric format  
 Age\_Group\_ID: Numeric format

**Table 7.** Sample of the ICD-9-CM 3 digit procedure code table

Age_Group	Sex	Period	Code	PxName	Setting	Members	Events	Age_Group_ID
0-1	F	2004	010	CRANIAL PUNCTURE	AN	5	5	1
0-1	F	2004	010	CRANIAL PUNCTURE	AV	2	2	1
15-18	M	2008	470	APPENDECTOMY	AN	166	167	5
15-18	M	2008	470	APPENDECTOMY	IP	166	167	5
19-21	F	2006	345	PLEURECTOMY	AN	3	3	6
19-21	F	2006	345	PLEURECTOMY	IP	3	3	6
22-44	F	2005	389	PUNCTURE OF VESSEL	AV	187	199	7
22-44	F	2005	389	PUNCTURE OF VESSEL	IP	941	1207	7
65-74	F	2006	841	AMPUTATION OF LOWER LIMB	AN	15	17	9
65-74	F	2007	022	VENTRICULOSTOMY	IP	2	2	9
75+	F	2008	311	TEMPORARY TRACHEOSTOMY	AN	36	36	10
75+	F	2008	381	ENDARTERECTOMY	IP	36	38	10

#### H. ICD-9-CM PROCEDURE SUMMARY TABLE (4 DIGIT)

The ICD-9-CM 4 digit procedure table provides a count of unique members with an ICD-9-CM coded procedure observed during the period and a count of events experienced within each stratum.

The counts are stratified by setting of visit as defined above (3-digit diagnosis summary tables), age group, sex, year, and 4 digit ICD-9-CM procedure code (format XXXX). Members are categorized into visit setting as described above (3-digit diagnosis summary tables).

For an event and member to be counted, the member must meet enrollment requirements as described above (3-digit diagnosis summary tables).

#### **Table name, variables, and permissible formats for the ICD-9-CM (4 digit) Procedure table:**

Summary table name: ICD9\_PROCEDURE\_4\_DIGIT

Age\_Group: '0-1', '2-4', '5- 9', '10-14', '15-18', '19-21', '22-44', '45-64', '65-74', '75+' (character format)

Sex: 'M', 'F' (character format)

Period: 4 digit year (character format)

Setting: 'IP', 'ED', 'AV', 'AN' (character format)

PX\_Code: 4 digit code XXXX (character format)

PXname: 35 digit character format

Members: Numeric format

Events: Numeric format

Age\_Group\_ID: Numeric format

**Table 8.** Sample of the ICD-9-CM 4 digit procedure code table

Age_Group	Sex	Period	PX_Code	PxName	Setting	Members	Events	Age_Group_ID
0-1	F	2004	0331	SPINAL TAP	AV	112	113	1
0-1	F	2004	0331	SPINAL TAP	IP	705	713	1
19-21	F	2004	0395	SPINAL BLOOD PATCH	AV	19	19	6
19-21	F	2004	0395	SPINAL BLOOD PATCH	IP	2	2	6

Age_Group	Sex	Period	PX_Code	PxName	Setting	Members	Events	Age_Group_ID
22-44	M	2005	9904	TRANSFUSION OF PACKED CELLS	AN	268	420	7
22-44	M	2005	9904	TRANSFUSION OF PACKED CELLS	AV	26	66	7
45-64	F	2005	9917	INJECTION OF INSULIN	AV	18	19	8
45-64	F	2005	9917	INJECTION OF INSULIN	IP	9	9	8
65-74	M	2004	8703	CAT OF HEAD	AN	5	6	9
65-74	M	2004	8703	CAT OF HEAD	AV	2	3	9
75+	M	2009	9961	ATRIAL CARDIOVERSION	AN	5	5	10
75+	M	2009	9961	ATRIAL CARDIOVERSION	IP	5	5	10

## I. INGREDIENT NAME SUMMARY TABLE

The ingredient name, also known as Generic Name, table provides a count of unique members who had a drug dispensing during the period, a count of dispensings received by all of these members, and the total number of days supplied by strata.

The counts are stratified by generic drug name, age group, sex, quarter-year and year. The generic drug name is standardized using a look-up table provided by the Sentinel Operations Center.

For an event and member to be counted, the member must meet enrollment requirements as described above (3-digit diagnosis summary tables).

### **Table name, variables, and permissible formats for the Ingredient Name table:**

Summary table name: GENERIC\_NAME

Age\_Group: '0-1', '2-4', '5-9', '10-14', '15-18', '19-21', '22-44', '45-64', '65-74', '75+' (character format)

Sex: 'M', 'F' (character format)

Period: 6 digit (character format), enabling YYYY and YYYYQ# patterns

GenericName: 30 digit character format

Members: Numeric format

Events: Numeric format

DaysSupply: Numeric format

Age\_Group\_ID: Numeric format

**Table 9.** Sample of the ingredient name summary table

Age_Group	Sex	Period	GenericName	Members	Dispensings	DaySupply	Age_Group_ID
0-1	F	2004Q3	ACYCLOVIR	75	93	989	1
0-1	F	2004Q3	ADAPALENE	1	3	90	1
5-9	M	2008Q4	GLIMEPIRIDE	1	3	90	3
5-9	M	2008Q4	GLIPIZIDE	2	6	180	3
10-14	M	2009	STAVUDINE	16	80	2400	4
10-14	M	2009	SUCCIMER	1	3	30	4
22-44	M	2005	BUDESONIDE	732	1853	47365	7
22-44	M	2005	BUMETANIDE	143	772	22391	7
45-64	M	2005	LANCETS	12	36	1015	8
45-64	M	2005	LANSOPRAZOLE	17626	115790	3443065	8
75+	F	2005Q3	TAMSULOSIN HCL	64	93	1407	10
75+	M	2009	VALSARTAN	70	276	8280	10

## J. DRUG CATEGORY SUMMARY TABLE

The drug category, also known as Drug Class, table provides a count of unique members who had a drug dispensing during the period and a count of dispensings received by all of these members by strata. Additionally, a count of the total number of days supply (sum of days supply for all members by strata) is included.

The counts are stratified by drug class, age group, sex, quarter-year and year. The drug category is standardized using a look-up table provided by the Sentinel Operations Center.

For an event and member to be counted, the member must meet enrollment requirements as described above (3-digit diagnosis summary tables).

### **Table name, variables, and permissible formats for the Drug Category table:**

Summary table name: DRUG\_CLASS

Age\_Group: '0-1', '2-4', '5-9', '10-14', '15-18', '19-21', '22-44', '45-64', '65-74', '75+' (character format)

Sex: 'M', 'F' (character format)

Period: 6 digit (character format), enabling YYYY and YYYYQ# patterns

DrugClass: 70 digit character format

Members: Numeric format

Dispensings: Numeric format

DaysSupply: Numeric format

Age\_Group\_ID: Numeric format

**Table 10.** Sample of the drug class summary table

Age_Group	Sex	Period	DrugClass	Members	Dispensings	DaySupply	Age_Group_ID
0-1	F	2004Q3	Antacids	3	5	150	1
0-1	F	2004Q3	Anthelmintic	44	47	314	1
2-4	M	2004Q3	G.U. Irrigants	12	20	332	2
2-4	F	2005	Vasodilators	1	1	30	2
22-44	M	2009	Antiprotozoal	146	343	8775	7
22-44	M	2009	NSAID Analgesics	6450	11254	244277	7
45-64	F	2005	Peripheral Vasodilators	55	206	5994	8
45-64	M	2006Q2	Calcitonins	37	85	2135	8
65-74	M	2008Q4	Quinolone Antibiotics	221	273	2455	9
65-74	F	2007	Estrogens	113	595	17903	9
75+	M	2009	Nasal Corticosteroids	75	185	5314	10
75+	M	2009	Mineralocorticoids	2	6	180	10

## K. INCIDENT ICD-9-CM DIAGNOSIS SUMMARY TABLE (3 DIGIT)

The incident ICD-9-CM diagnosis table provides a count of unique members and unique incident diagnosis events of each 3-character ICD-9-CM category in one of four care settings of interest (i.e., inpatient, emergency department, ambulatory, and any) stratified by age group, sex, and year.

An incident event is defined as a member with an encounter with the diagnosis of interest (i.e., the index date), in the care setting of interest, in the year of interest, with no evidence of that diagnosis in the 90, 180 and 270 days (i.e., the lookback periods) before the index date in any care setting. Both continuous medical and drug coverage are required during the 3 possible lookback periods, as well as for the incident events. When defining continuous coverage, enrollment gaps of <=45 days are bridged. If a patient has more than one qualifying

incident event within a calendar year, for a given diagnosis and care setting, all qualifying incident events will be reported, though incident members will be counted at most once within a calendar year, for a given diagnosis and care setting. Note that while reporting is by calendar year, lookback periods can extend to the prior year to ascertain incidence.

Counts are stratified by setting of visit, age group, sex, year, 3-character ICD-9-CM code(s) of interest. For each stratum the number of unique members and incident events for the 90, 180 and 270 lookback scenarios are reported.

**Table name, variables, and permissible formats for the 3-digit ICD-9-CM Diagnosis Incidence table:**

Summary table name: INCIDENT\_ICD9\_DIAGNOSIS

Age\_Group: '0-1', '2-4', '5- 9', '10-14', '15-18', '19-21', '22-44', '45-64', '65-74', '75+' (character format)  
 Sex: 'M', 'F' (character format)  
 Period: 4 digit year (character format)  
 Code: 3 character code XXX (character format)  
 DxName: 35 digit character format  
 Setting: 'IP', 'ED', 'AV', 'AN' (character format)  
 Members90: Numeric format  
 Events90: Numeric format  
 Members180: Numeric format  
 Events180: Numeric format  
 Members270: Numeric format  
 Events270: Numeric format  
 Age\_Group\_ID: Numeric format

**Table 11.** Sample of the incident 3-digit ICD-9-CM diagnosis summary table

Age Group	Sex	Period	Code	DxName	Setting	Members90	Events90	Members180	Age Group ID
0-1	F	2004	133	ACARIASIS	AV	59	67	1	1
0-1	F	2004	133	ACARIASIS	ED	1	1	0	1
45-64	F	2006	531	GASTRIC ULCER	AN	388	580	358	8
45-64	F	2006	531	GASTRIC ULCER	AV	234	359	218	8
65-74	M	2005	332	PARKINSONS DISEASE	AN	66	105	52	9
65-74	M	2005	685	PILONIDAL CYST	AV	2	4	2	9
65-74	M	2005	20	PLAGUE	AN	1	1	1	9
65-74	M	2005	511	PLEURISY	AN	106	164	89	9
75+	M	2005	304	DRUG DEPENDENCE	AN	1	1	1	10
75+	M	2005	532	DUODENAL ULCER	AN	18	25	15	10
75+	M	2005	492	EMPHYSEMA	IP	17	18	16	10
75+	M	2005	274	GOUT	AV	26	35	23	10

(Table display is abbreviated by column)

**L. INCIDENT DRUG CATEGORY SUMMARY TABLE**

The incident drug category table provides a count of unique members with an incident dispensing for each drug category (e.g., betablocker, antidiabetic) of interest stratified by age group, sex, and year. Incidence is defined as a member with a dispensing with the drug category of interest (i.e., the index date), in the year of interest with no evidence of a dispensing for that drug category in the 90, 180 and 270 days (i.e., the lookback periods) before the index date.

Both medical and drug coverage are required during the 3 possible lookback periods, allowing for eligibility gaps of <=45 days. In addition, the member must have continuous enrollment of both medical and drug coverage from the index date through their entire drug episode, their end of enrollment, or the end of the data period for the Data Partner, whichever is earlier.

For each such incident user a treatment episode starting on the index date is created and its length is determined. Although a member can have multiple index events in a given calendar year, the first one only is counted and used for reporting. Treatment gaps of <= 15 days are allowed when building treatment episodes and no restriction on the length of treatment episodes is applied, other than the enrollment requirements mentioned above.

Reporting is performed for the number of members with an incident dispensing, the total number of dispensings with the drug category of interest, days supplied and length of treatment episodes (in days). The counts are stratified by drug category, age group, sex, and year. Drug categories are standardized using a look-up table provided by the Sentinel Operations Center. For each stratum the results contain 3 separate sections for each of the 90, 180 and 270 lookback scenarios. Each section contains the total number of members, total dispensings, total days supplied and total length of all episodes, as well as a quarterly breakdown of index dates (must sum up to total number of members).

**Table name, variables, and permissible formats for the Incident Drug Category table:**

Summary table name: INCIDENT\_DRUG\_CLASS

Age\_Group: '0-1', '2-4', '5- 9', '10-14', '15-18', '19-21', '22-44', '45-64', '65-74', '75+'  
(character format)  
Sex: 'M', 'F' (character format)  
Period: 4 digit year (character format)  
DrugClass: 70 digit character format  
Members (90, 180, & 270): Numeric format  
Dispensings (90, 180, & 270): Numeric format  
DaysSupply (90, 180, & 270): Numeric format  
EpisodeSpan (90, 180, & 270): Numeric format  
MembersQ1 (90, 180, & 270): Numeric format  
MembersQ2 (90, 180, & 270): Numeric format  
MembersQ3 (90, 180, & 270): Numeric format  
MembersQ4 (90, 180, & 270): Numeric format  
Age\_Group\_ID: Numeric format

**Table 12.** Sample of the incident drug category summary table

Age Group	Sex	Period	DrugClass	Members90	EpisodeSpan90	Dispensings90	DaysSupply90	Members90Q1
0-1	F	2004	Antacids	4	120	4	120	0
0-1	F	2004	Anthelmintic	62	439	66	391	0
45-64	M	2007	Nasal Corticosteroids	1777	88582	3120	85053	617
45-64	M	2007	Nasal Moisturizers	4	101	5	95	1
65-74	M	2009	Antiretrovirals	8	277	16	465	4
65-74	M	2009	Antithyroid Agents	3	127	5	134	0
65-74	M	2009	Calcitonins	1	123	4	120	1
75+	F	2008	Mineralocorticoids	6	281	10	281	3
75+	F	2009	Antacids	32	1061	40	1166	15
75+	F	2009	Anthelmintic	5	24	5	24	4

Age Group	Sex	Period	DrugClass	Members90	EpisodeSpan90	Dispensings90	DaysSupply90	Members90Q1
75+	M	2005	GOUT	AV	26	35	23	29

(Table display is abbreviated by column)

### M. INCIDENT INGREDIENT NAME SUMMARY TABLE

The incident name, also known as generic name, table provides a count of unique members with an incident dispensing for each generic drug name of interest stratified by age group, sex, and year. Incidence is defined as a member with a dispensing with the generic drug name of interest (i.e., the index date), in the year of interest with no evidence of a dispensing for that generic drug name in the 90, 180 and 270 days (i.e., the lookback periods) before the index date.

All enrollment requirements, calculation of drug episodes, and reporting is as described above (Incident Drug Category Summary Table).

#### **Table name, variables, and permissible formats for the Incident Ingredient Name table:**

Summary table name:	INCIDENT_GENERIC_NAME
Age_Group:	'0-1', '2-4', '5-9', '10-14', '15-18', '19-21', '22-44', '45-64', '65-74', '75+' (character format)
Sex:	'M', 'F' (character format)
Period:	4 digit year (character format)
GenericName:	30 digit character format
Members (90, 180, & 270):	Numeric format
Dispensings (90, 180, & 270):	Numeric format
DaysSupply (90, 180, & 270):	Numeric format
EpisodeSpan (90, 180, & 270):	Numeric format
MembersQ1 (90, 180, & 270):	Numeric format
MembersQ2 (90, 180, & 270):	Numeric format
MembersQ3 (90, 180, & 270):	Numeric format
MembersQ4 (90, 180, & 270):	Numeric format
Age_Group_ID:	Numeric format

**Table 13.** Sample of the ingredient name summary table (Table display is abbreviated by column)

Age Group	Sex	Period	Generic Name	Members90	EpisodeSpan90	Dispensings90	DaysSupply90	Members90Q1
0-1	F	2004	ATENOLOL	2	60	2	60	0
0-1	F	2004	CEFACLOR	90	968	92	953	0
22-44	F	2007	LISINOPRIL	2228	172040	5585	168272	543
22-44	M	2004	HYDROXYUREA	58	3741	120	3562	0
45-64	F	2009	MIGLITOL	9	776	26	780	8
45-64	M	2004	ITRACONAZOLE	29	2137	74	2029	0
65-74	F	2005	PROBENECID	22	1036	38	1028	4
65-74	M	2004	MUPIROCIN	380	8221	533	7456	0
75+	F	2006	FUROSEMIDE	962	57189	1998	55980	469
75+	M	2006	CLARITHROMYCIN	31	289	34	283	10

(Table display is abbreviated by column)

### V. MOST FREQUENT UTILIZATION FEATURE

The Most Frequent Utilization feature allows investigators to query the top XX events and members within a specified query type (drugs, diagnoses, or procedures) within the prevalence tables.

The counts are stratified by age group, sex, year, code, drug name or drug class, and for diagnoses and procedures, setting of visit (Inpatient, Outpatient, Emergency Department, or Any).

## **VI. QUERY RESULT DENOMINATOR**

The Sentinel Distributed Query Tool results include counts of utilization and enrollment information for each stratum included in the query. The denominator information is obtained by extracting enrollment data from the enrollment table.