Disclaimer

The following report(s) provides findings from an FDA-initiated query using Sentinel. While Sentinel queries may be undertaken to assess potential medical product safety risks, they may also be initiated for various other reasons. Some examples include determining a rate or count of an identified health outcome of interest, examining medical product use, exploring the feasibility of future, more detailed analyses within Sentinel, and seeking to better understand Sentinel capabilities.

Data obtained through Sentinel are intended to complement other types of evidence such as preclinical studies, clinical trials, postmarket studies, and adverse event reports, all of which are used by FDA to inform regulatory decisions regarding medical product safety. The information contained in this report is provided as part of FDA's commitment to place knowledge acquired from Sentinel in the public domain as soon as possible. Any public health actions taken by FDA regarding products involved in Sentinel queries will continue to be communicated through existing channels.

FDA wants to emphasize that the fact that FDA has initiated a query involving a medical product and is reporting findings related to that query does not mean that FDA is suggesting health care practitioners should change their prescribing practices for the medical product or that patients taking the medical product should stop using it. Patients who have questions about the use of an identified medical product should contact their health care practitioners.

The following report contains a description of the request, request specifications, and results from the Query Builder analysis.

If you are using a web page screen reader and are unable to access this document, please contact the Sentinel Operations Center for assistance at info@sentinelsystem.org.

Overview

Query Builder Report: This report details the results of an analysis generated by the Sentinel Query Builder application. Query Builder enables FDA to visualize, draft, and create standardized medical product utilization queries examining dispensing patterns and cohort characteristics using a set of pre-defined parameters. This is a Type 5 (Medical Product Utilization) analysis as described in the Query Request Package (QRP) documentation. This is Report 2 of 2. This report includes scenarios for ethiodized oil and non-oil based agents and the applicable baseline characteristics. Note that as no patients were identified for the ethiodized oil scenario, a baseline characteristics table was not produced. For all investigated scenarios without baseline characteristics, please see Report 1.

Sentinel Routine Querying Module: Cohort Identification and Descriptive Analysis (CIDA) module, version 9.1.0.

Data Source: We executed this request on IBM® MarketScan® Commercial Claims and Encounters Database and Medicare Supplemental Database, which included 140 million members, on June 3, 2020. The study period included data from January 1, 2010 to December 31, 2018. Please see Appendix A for data availability dates.

Limitations: Algorithms used to define exposures and inclusion and exclusion criteria are imperfect; thus it is possible that there may be misclassification. Therefore, data should be interpreted with these limitations in mind.

Notes: Please contact the Sentinel Operations Center (info@sentinelsystem.org) for questions and to provide comments/suggestions for future enhancements to this document. For more information on Sentinel Query Builder, please refer to the documentation (https://dev.sentinelsystem.org/projects/QB/repos/querybuilder/browse).

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Table 1. Baseline table (Non-Oil Agents (All) and Hysterosalpingography (HSG) Procedures, 180 Day Pre-Index Enrollment)

Characteristic[1]	N/Mean	%/Std Dev[2]
Number of unique patients	12	
Demographics		
Mean Age (years)	44.0	14.3
Age (years): 00-01	-	-
Age (years): 02-04	-	-
Age (years): 05-09	-	-
Age (years): 10-14	-	-
Age (years): 15-18	-	-
Age (years): 19-21	-	-
Age (years): 22-44	6	50.0%
Age (years): 45-64	5	41.7%
Age (years): 65-74	1	8.3%
Age (years): 75+	-	-
Sex (Female)	12	100.0%
Year (2010)	1	8.3%
Year (2011)	1	8.3%
Year (2012)	4	33.3%
Year (2013)	3	25.0%
Year (2014)	1	8.3%
Year (2015)	2	16.7%
Year (2016)	-	-
Year (2017)	-	-
Year (2018)	-	-
Recorded history of:		
Prior combined comorbidity score [3]	1.0	2.4
Acquired Hypothyroidism	0	0.0%
Acute Myocardial Infarction	0	0.0%
Alzheimer's Disease	0	0.0%
Alzheimer's Disease, Related Disorders, or Senile Dementia	0	0.0%
Anemia	0	0.0%
Asthma	2	16.7%
Atrial Fibrillation	0	0.0%
Benign Prostatic Hyperplasia	0	0.0%
Breast Cancer	0	0.0%
Cataracts	0	0.0%
Chronic Kidney Disease	1	8.3%
Chronic Obstructive Pulmonary Disease	1	8.3%
Colorectal Cancer	1	8.3%
Depression	1	8.3%
Diabetes	2	16.7%
Endometrial Cancer	0	0.0%
Glaucoma	0	0.0%
Heart Failure	0	0.0%
Hip / Pelvic Fracture	0	0.0%
Hyperlipidemia	2	16.7%
Hypertension	2	16.7%
Ischemic Heart Disease	0	0.0%
Lung Cancer	0	0.0%
Osteoporosis	0	0.0%
Prostate Cancer	0	0.0%
Rheumatoid Arthritis / Osteoarthritis	1	8.3%
Stroke / Transient Ischemic Attack	0	0.0%

Table 1. Baseline table (Non-Oil Agents (All) and Hysterosalpingography (HSG) Procedures, 180 Day Pre-Index Enrollment)

Characteristic[1]	N/Mean	%/Std Dev[2]
Health Service Utilization Intensity:		
Mean number of ambulatory encounters (AV)	6.1	6.7
Mean number of emergency room encounters (ED)	0.3	0.7
Mean number of inpatient hospital encounters (IP)	0.0	0.0
Mean number of non-acute institutional encounters (IS)	0.0	0.0
Mean number of other ambulatory encounters (OA)	3.3	4.4
Mean number of filled prescriptions	12.1	12.4
Mean number of generics	6.7	5.7
Mean number of unique drug classes	6.4	5.4

[1]All metrics based on total number of unique patients
[2]Value represents standard deviation where no % follows the value
[3]The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. J Clin Epidemiol. 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. Med Care. 2017;55(12):1046-1051).

Appendix A. Dates of Available Data for Each Data Partner (DP) up to Request End Date (05/07/2020) as of Query Distribution Date		
Data Partner (Masked)	Start Date	End Date
DP01	01/01/2010	12/31/2018

Appendix B. Specifications Used to Define Parameters in this Request

> **Global Values**
>
> Enrollment Criteria:**Medical and Drug Coverage**
> Enrollment Gap (Days):**45**
> Age Groups (Years):**00-01, 02-04, 05-09, 10-14, 15-18, 19-21, 22-44, 45-64, 65-74, 75+**
>
> Query Period: **01/01/2010-12/31/2018**
> Baseline Characteristics Table:**Yes**
> Baseline Evaluation Window (Day): **-180,-1**

#	Cohort Name	Index Exposure	Pre-Index Enrollment Period (Days)	Washout Period (Days)	Treatment Episode Gap (Days)	Treatment Episode Extension (Days)	Inclusion/ Exclusion	Criteria	Criteria Definition	Evaluation Period Start (Day)	Evaluation Period End (Day)
1	Non-Oil Agents (All) and Hysterosalpingography (HSG) Procedures, 180 Day Pre-Index Enrollment	Non Oil Agents[1]	180	0	0	0	Inclusion	HSG	HSG[2]	0	0
							--	--	--	--	--
2	Ethiodized Oil and Hysterosalpingography (HSG) Procedures, 180 Day Pre-Index Enrollment	Ethiodized Oil[3]	180	0	0	0	Inclusion	HSG	HSG[4]	0	0
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ICD-9,ICD-10,HCPCS AND CPT are provided by Optum360
NDCs are checked against First Data Bank's MedKnowledge.

Appendix of Generic Names and Chronic Conditions

[1]   See Appendix C

[2]   See Appendix D

[3]   See Appendix C

[4]   See Appendix D

Baseline Characteristics Table

Acquired Hypothyroidism	Chronic Kidney Disease	Hypertension
Acute Myocardial Infarction	Chronic Obstructive Pulmonary Disease	Ischemic Heart Disease
Alzheimer's Disease	Colorectal Cancer	Lung Cancer
Alzheimer's Disease, Related Disorders, or Senile Dementia	Depression	Osteoporosis
Anemia	Diabetes	Prostate Cancer
Asthma	Endometrial Cancer	Rheumatoid Arthritis / Osteoarthritis
Atrial Fibrillation	Glaucoma	Stroke / Transient Ischemic Attack
Benign Prostatic Hyperplasia	Heart Failure	
Breast Cancer	Hip / Pelvic Fracture	
Cataracts	Hyperlipidemia	

Glossary of Terms for Analyses Using Cohort Identification and Descriptive Analysis (CIDA) Module

Age Groups - Age groups of members included in the cohort. Strata also used for reporting purposes.

Ambulatory Visit (AV) - A care setting value including visits at outpatient clinics, same-day surgeries, urgent care visits, and other same-day ambulatory hospital encounters, but excludes emergency department encounters.

Baseline Characteristics Table - Optional table containing general characteristics of study population, including background rates of 27 chronic conditions from the CMS Chronic Condition Warehouse (see above if table requested). Users define an evaluation period for the presence of baseline characteristics.

Care Setting - Type of medical encounter or facility where the exposure, event, or condition code was recorded. Possible care settings include: Inpatient Hospital Stay (IP), Non-Acute Institutional Stay (IS), Emergency Department (ED), Ambulatory Visit (AV), and Other Ambulatory Visit (OA). For laboratory results, possible care settings include: Emergency Department (E), Home (H), Inpatient (I), Outpatient (O), or Unknown or Missing (U). The Care Setting, along with the Principal Diagnosis Indicator (PDX), forms the Care Setting/PDX parameter.

Charlson/Elixhauser Combined Comorbidity Score - Calculated based on comorbidities observed during a requester-defined window around the exposure episode start date (e.g., in the 183 days prior to index).

Cohort Definition - Cohort includes all valid exposure episodes during the query period. Only the first valid episode's incidence is assessed using the washout period.

Emergency Department (ED) - A care setting value including ED encounters that become inpatient stays (in which case inpatient stays would be a separate encounter). Excludes urgent care visits.

Enrollment Criteria - Type of coverage required during enrollment period. By default, all patients must have medical and drug coverage.

Enrollment Gap - Allowed gap between coverage periods.

Episodes - Treatment episodes; length of episode is determined by days supplied in one dispensing or consecutive dispensings bridged by the episode gap.

Inclusion/Exclusion - Contains the comprehensive set of codes used to define additional cohort inclusion and/or exclusion criteria (e.g., restrict cohort to individuals with evidence of a pre-existing condition 183 days before the index date). Criteria could be defined with complex algorithms (e.g., diagnosis codes and drug codes) defined under Criteria Definition.

Inpatient Hospital Stay (IP) - A care setting value including all inpatient stays, same-day hospital discharges, hospital transfers, and acute hospital care where the discharge is after the admission date.

Non-Acute Institutional Stay (IS) - A care setting value including hospice, skilled nursing facility (SNF), rehab center, nursing home, residential, overnight non-hospital dialysis and other non-hospital stays.

Other Ambulatory Visit (OA) - A care setting value including other non-overnight AV encounters such as hospice visits, home health visits, skilled nursing facility visits, other non-hospital visits, as well as telemedicine, telephone and email consultations.

Principal Diagnosis (PDX) - Diagnosis or condition established to be chiefly responsible for admission of the patient to the hospital. 'P' = principal diagnosis, 'S' = secondary diagnosis, 'X' = unspecified diagnosis, '.' = blank. Along with the Care Setting values, forms the Caresetting/PDX parameter.

Query Period - The period of time which patients can contribute index-defining exposure/events. Data prior to the start date may be used to determine enrollment, washout, and other cohort inclusion criteria.

Treatment Episode Extension - The episode extension adds the selected number of days to the end of an episode to count as exposed time.

Treatment Episode Gap - The maximum number of days allowed between two dispensings to consider them part of the same episode.

Washout Period - The period before an exposure episode during which an individual cannot have evidence of incidence-defining criteria.

Appendix C. List of Generic and Brand Names of Medical Products Used to Define Index Exposure in this Request

Generic Name	Brand Name
Ethiodized Oil	
ethiodized oil	Lipiodol
ethiodized oil	Ethiodol
Non-Oil Agents	
iothalamate meglumine	Cysto-Conray II
iothalamate meglumine	Conray-30
Iothalamate meglumine	Conray
diatrizoate meglumine/diatrizoate sodium	MD-76 R
ioversol	Optiray 320
ioversol	Optiray 240
ioversol	Optiray 300
ioversol	Optiray 350
iothalamate meglumine	Conray-43
diatrizoate meglumine/diatrizoate sodium	MD-Gastroview
diatrizoate meglumine	Cystografin
iodipamide meglumine	Cholografin Meglumine
diatrizoate meglumine/diatrizoate sodium	Gastrografin
iodipamide meglumine/diatrizoate meglumine	Sinografin
diatrizoate meglumine	Reno-Dip
iopamidol	Isovue-200
iopamidol	Isovue-300
iopamidol	Isovue-370
iopamidol	Isovue-250
diatrizoate meglumine	Cystografin-Dilute
iopamidol	Isovue-M 200
iopamidol	Isovue-M 300
diatrizoate meglumine	Hypaque-Cysto
diatrizoate meglumine	Hypaque Meglumine
diatrizoate sodium	Hypaque Sodium
Diatrizoate meglumine/diatrizoate sodium	Hypaque-76
iohexol	Omnipaque 140
iohexol	Omnipaque 180
iohexol	Omnipaque 240
iohexol	Omnipaque Rediflo 240
iohexol	Omnipaque Rediflo 300
iohexol	Omnipaque 300
iohexol	Omnipaque Rediflo 350
iohexol	Omnipaque 350
iohexol	Omnipaque
iodixanol	Visipaque
iohexol	iohexol
iopromide	Ultravist
ioxilan	Oxilan-350

Appendix D. List of Current Procedural Terminology, Fourth Edition (CPT-4) Codes Used to Define Inclusion Criteria in this Request

Code	Description	Code Category	Code Type
Hysterosalpingography (HSG)			
74740	Hysterosalpingography, radiological supervision and interpretation	Procedure	CPT-4
58340	Catheterization and introduction of saline or contrast material for saline infusion sonohysterography (SIS) or hysterosalpingography	Procedure	CPT-4
76831	Saline infusion sonohysterography (SIS), including color flow Doppler, when performed	Procedure	CPT-4
76830	Ultrasound, transvaginal	Procedure	CPT-4
58345	Transcervical introduction of fallopian tube catheter for diagnosis and/or re-establishing patency (any method), with or without hysterosalpingography	Procedure	CPT-4