Data Gathering and Analysis Methodology

Children's Hospital Database Project

Updated: December 2024

Do No Harm

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Objectives of the Report

The objective of this data analysis project was to provide a comprehensive overview of gender transition-related treatments administered to minors at US-based medical facilities between 2019 and 2023. The project aimed to capture and analyze several key metrics: the number of unique patients treated each year, the average number of medical encounters per patient per year, and the total amount billed to insurance providers annually.

The analysis focused exclusively on patients aged 0 to 17.5 years and included only confirmed cases of gender transition-related treatments, thereby eliminating any ambiguities or "gray areas."

This targeted approach was designed to yield precise insights that could help healthcare providers, policymakers, and researchers understand trends, optimize care, and potentially influence health policy related to gender-affirming treatments in pediatric populations.

Purpose of Whitepaper

The purpose of this whitepaper is to present a comprehensive and transparent overview of the methods employed in the collection, analysis, enrichment, and visualization of healthcare claims data pertaining to surgical gender transitions and hormone and puberty blocker therapies for minors.

This document aims to elucidate the processes and techniques used, from the initial data gathering to the analysis and visualization of the findings.

Data Collection and Sources

The data was sourced from an all-payer claims database that incorporated data from claims clearinghouses, data aggregators, payors, health systems, CMS, and multiple open data sources to build a **Comprehensive Data Ecosystem (CDE)**. The final product included data from commercial insurance, Medicaid, Medicare, and VA claims.

Coverage and Longevity: The dataset covered patient journeys across all United States geographies (50 states), therapeutic groups, and payors, from **January 2019 through December 2023.**

Claims Visibility: The claims visibility of source data provided access to **every open and closed healthcare claim in the US**, with the exception of internal Kaiser and internal VA claims.

Confidentiality: The dataset utilized anonymized patient identifiers to safeguard individual privacy, ensuring that all information was de-identified in compliance with privacy standards. This approach enabled insights into the coordination, outcomes, and financial aspects of each step in the care process while maintaining patient confidentiality.

Review by Medical Professionals

Procedure codes and NDC (medication) codes were meticulously reviewed by multiple physicians and clinicians with decades of combined experience in medicine, and a corresponding confidence level was assigned to indicate their association with a gender transition procedure or medication regimen.

This process ensured that only procedure and NDC codes designated as a high confidence level of being gender transition-related were included in the final report.

See appendix for a list of codes.

Assumptions

In the course of this analysis, several key assumptions were made:

90-Day Window for Prescription Relevance:

Prescriptions written within 90 days before or after a gender transition diagnosis are assumed to be directly related to the diagnosis. This timeframe accommodates potential delays in claim processing.

Use of Absolute Value for Days Calculation:

The absolute value of days between diagnosis and prescription dates is used to capture cases where the diagnosis claim may be processed after the prescription was written.

Data Integrity and Inclusion:

Only records with confirmed gender transition-related procedures and diagnoses were included to ensure accuracy and relevance.

The analysis was focused exclusively on patients aged 0 to 17.5 years.

High Confidence Codes:

Procedure and NDC codes included in the analysis were reviewed and confirmed by experienced physicians and clinicians to ensure high confidence in their relevance to gender transitions.

Handling of Independent Hospitals:

Independent hospitals were assumed to have no system affiliation unless explicitly stated.

Fuzzy Matching for Hospital Identification:

It is assumed that fuzzy matching techniques accurately identified top children's hospitals from the dataset. Manual validation was performed to confirm the accuracy of the matches, with the official addresses of children's hospitals being used in place of city/state information from the claims data where applicable.

Data Enrichment and Merging:

Data from various sources, including NPPES and external data providers, was assumed to be accurate and used for enriching the dataset.

Manual Validation:

Manual checks were conducted to ensure the accuracy of system affiliations and provider details.

Male and Female:

It was assumed that male and female in coding practice may have different values than what was assigned at birth.

SOFTWARE AND TOOLS

Python: Used for data extraction, manipulation, and analysis. Its extensive libraries (e.g., pandas, numpy) provided robust capabilities for handling large datasets efficiently.

Power BI: Employed for data visualization and dashboard creation. Its interactive visualizations and business intelligence capabilities enabled comprehensive and intuitive data exploration and presentation.

Power Query: Utilized for data transformation, cleaning, and merging. Its preparation tools ensured efficient and consistent data processing, maintaining data integrity and quality.

SQL: Used for querying and managing data within databases. Its powerful querying capabilities allowed precise data extraction and manipulation, essential for complex analysis tasks.

Excel: Employed for preliminary data analysis and storage. Its flexibility and familiarity made it suitable for initial data review and small-scale manipulations.

Quality Assurance (QA)

To ensure the highest data integrity and accuracy, a comprehensive Quality Assurance (QA) process was implemented, including multiple stages of validation and review:

Peer Review of Datasets: Datasets were peer reviewed to ensure consistency and accuracy, identifying and correcting discrepancies.

Patient Journey Validation: Detailed analyses of specific patient journeys were conducted to confirm the accuracy and reliability of data entries.

Medical Professional Review: Several experienced physicians and clinicians reviewed medical codes to ensure they were appropriately used and relevant to the study.

Peer Review of Analysis/Findings: Peer review sessions were conducted to identify issues, question insights, and investigate findings collaboratively.

Limitations

Data Exclusion: Claims from internal Kaiser and internal VA systems, as well as cash pay insurance claims, are not included in our data.

Accuracy of Insurance Claims: The data relies on the accuracy and completeness of information provided by individuals filling out insurance claims, which may vary.

Transgender-related Procedures & Treatments: While we have employed stringent criteria in selecting and filtering procedure codes, diagnosis codes, and National Drug Codes (NDCs) to focus on gender transition-related treatments, there remains a possibility that some of the billing data may reflect treatments administered for congenital conditions or other non-gender transition-related reasons. Consequently, caution should be exercised when interpreting the data, as these codes may capture a broader range of medical treatments beyond the scope of gender transition procedures.

Source Data Accuracy: The accuracy of our analysis depends on the quality and reliability of the source data from NPPES and other claims data brokers.

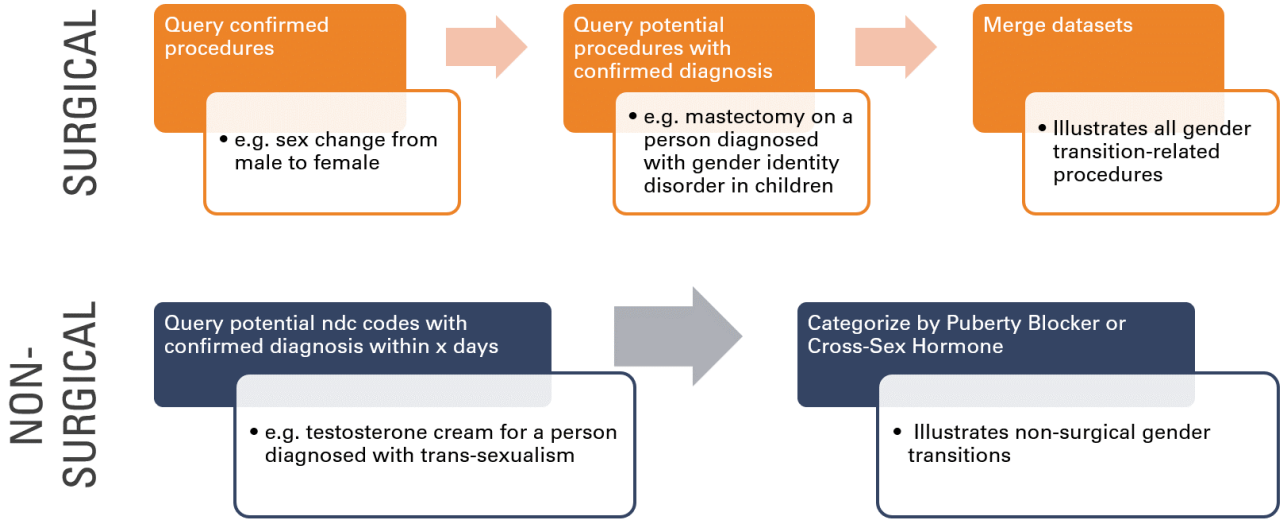
Inferred Values: Some values, such as the healthcare system affiliation, are inferred through a *coalesce imputation waterfall* (detailed below) and might not fully capture the true affiliations or details. For prescription data, facility details are inferred from the healthcare provider's (HCP) NPI record in NPPES and other publicly available provider directories, based on where that individual npi billed a majority of their claims over the prior year, and may not reflect the actual location where the prescription was written.

By acknowledging these limitations, we aim to provide a transparent understanding of the scope and constraints of our analysis, ensuring stakeholders are aware of potential data gaps and accuracy considerations.

Data Query Process

The process of querying the Comprehensive Data Ecosystem (CDE) to obtain all confirmed gender transitions on minors, both surgical (body-modification surgeries) and non-surgical (hormones and puberty blockers), involved a systematic approach to data extraction and analysis using Python, Power Query, and Power BI.

Data Extraction from CDE



Surgical Data:

1. **Query confirmed procedures:** The process began by extracting data on confirmed surgical gender transition procedures on minors, such as sex changes from male to female, directly from the CDE. This ensured that all surgical interventions that did not require a corresponding diagnosis code related to gender transitions were captured.

2. **Query potential procedures with confirmed diagnosis:** The next step was to query all procedures that were ranked as “high confidence that the procedure/drug is used for gender transitions” and had a corresponding gender transition-related diagnosis.

   Note: The only procedure code that was queried without a corresponding gender transition-related diagnosis was ‘55970 - Intersex surgery; male to female’. This procedure was designated “high confidence that the procedure/drug is used for gender transitions” without requiring a corresponding gender diagnosis during the physician and clinician review.

   While the CPT code '55970 - Intersex surgery; male to female' can theoretically be used for surgeries related to intersex conditions in newborns, a detailed review of the patient age data strongly suggests that its predominant use is for gender transition procedures. The overwhelming majority of patients associated with this

code are adolescents, typical of those undergoing gender-affirming surgeries. Although it is possible that a very small subset of cases could involve congenital intersex-related surgeries, such occurrences are statistically rare based on the age distribution of patients.

3. **Merge datasets:** the two datasets were then merged into a single dataset.

Non-Surgical (hormone & puberty blocker) Data:

1. Query Non-Surgical Treatments: Concurrently, potential non-surgical treatments, including the use of hormones and puberty blockers, were queried. This involved searching for specific National Drug Codes (NDC) that correspond to these treatments, ensuring the transgender diagnosis occurred within 90 days of the prescription being written.

2. Categorize by Puberty Blocker or Hormone-Related: Finally, after identifying all gender transitions performed by medication, these drugs were categorized as either “Puberty Blocker” or “Hormone-Related”.

Note: To focus solely on identifying drugs and surgeries directly related to gender transition, our analysis does not account for any treatments given in response to known adverse effects of hormone treatments.

Data Manipulation in Power Query and Visualization in Power BI

Refining Data: After extracting the initial datasets, Power Query was used to refine and clean the data. This step involved filtering out data unrelated to diagnoses, procedures, billing, location, and demographics, transforming data formats for consistency, and merging related data fields to create a comprehensive view of each patient’s treatment path.

Inferring Values: In some cases, such as identifying the health system for surgical procedures, when a health system was not listed on the claim record, a value was inferred through a *coalesce imputation waterfall* (detailed below), which returned the first non-null value in a list of arguments.

Integration and Visualization: With the data refined and categorized in Power Query, it was loaded into Power BI for deeper analysis and visualization. Dashboards were

created to provide insights into the volume of procedures, the distribution of treatment types (surgical vs. non-surgical), and trends over time.

Surgical Data: Cleaning, Enriching, and Imputing

Data Import and Initial Setup

Source Data Import: A CSV file was generated from the CDE based on the following parameters:

- Relevant Procedure Codes (see appendix)
- Relevant Diagnosis Codes (see appendix)
- Patient Age (0-17.5 years old)
- Date of Occurrence (01/01/2019-12/31/2023)

Data Cleaning

Formatting edits (column headers, data type, etc.) were made to the file in order to better organize the dataset.

Blank or “nan” values were replaced with “null” throughout the dataset and rows that included codes that were not an exact match with those designated as “high confidence” were removed.

Data Enrichment

Append Additional Data: An additional dataset was generated to account for the 55970 procedure code and merged to the main table to combine relevant information in one place.

Add Trans_Code Column: A column was added to identify any values in the column of diagnosis codes that matched one of the values in the diagnosis codes list (see appendix). This helped to determine which diagnosis code was gender transition-related whenever multiple diagnoses were listed on a procedure claim.

Further Data Merging

Join with Additional Datasets: The enriched data was merged with an external dataset that included an NPI-to-EIN crosswalk, enabling more accurate system attribution. NPI details were sourced from the NPPES database to include provider information, affiliations with leading children's hospitals in the U.S., and other critical attributes.

Fuzzy Matching: To determine which surgical facilities in the query output were part of a list of the top children's hospitals in the U.S., fuzzy matching was used to join datasets based on facility and system names, as well as geographic location. This approach ensured a comprehensive integration of data. Facilities with a high percentage match were then manually validated to confirm that the facility name listed in the NPPES database matched the name of the hospital in the top children's hospitals list. For facilities identified as official children's hospitals, the official address was manually identified and used in lieu of any city/state listed in the claims data record to ensure accuracy.

Unified System Calculation Process

Add Unified System Information (Coalesce Imputation Waterfall Method): A "unified system" column was created to consolidate system information from various sources:

The "unified system" column was created by sequentially checking and using the most accurate system affiliation from various data sources. Each step is explained below

1. **Check nppes_full.system**:
    - **Purpose**: Verify if the system is listed in the NPI registry based on the organizational provider's National Provider Identifier (NPI).
2. **Check CH List_system_gendercenter.System**:
    - **Purpose**: Look up the system in a manually identified list of top children's hospitals and their corresponding systems.
3. **Check hco_ein_system_inferred**:
    - **Purpose**: Utilize external dataset NPI-to-EIN crosswalk to infer the system based on the highest proportion of the **HCO** NPI's procedures performed at a specific system.
4. **Check system_GPT**:
    - **Purpose**: Use chatGPT's AI features to compare hospitals against a comprehensive database of known hospital systems and identify any missing systems, which were then manually validated.
5. **Check hcp_ein_system_inferred**:

- **Purpose**: If hco_npi is null, use the inferred system value from the external dataset NPI-to-EIN crosswalk based on the highest proportion of the **HCP** NPI's procedures at a specific system.

6. **Return Null**:
   - **Purpose**: If none of the above checks provide a value, return null.

This process ensured a thorough and accurate imputed system mapping for each healthcare facility by leveraging multiple data sources and validation steps.

Output Preparation

Final Cleanup: The final table was prepared by replacing null values in key columns with default text and removing any remaining duplicates.

Final Merge and Expansion: A last merge with the nppes_full dataset allowed for enriched geodata to be included on both the individual provider and organizational provider.

Non-Surgical Data: Cleaning, Enriching, and Imputing

Data Filters

- All data was filtered on ages 17.5 and below, within the United States, from January 2019 to December 2023.
- To ensure the data was tailored and actionable, it was made filterable by hospital facility, hospital system, and treatment type, including puberty blockers, cross-sex hormones, and surgeries.

Days between Diagnosis and Prescription Calculation

To initialize the dataset, the data was filtered to include only those prescriptions for specific National Drug Codes (NDCs) that were written within 90 days before or after the gender diagnosis was given to a minor.

The process of identifying the number of days between the date of diagnosis and the prescription being written followed this sequence:

1. Constructed a new table consisting of unique journey IDs, claim dates, and diagnosis codes for patients 17.5 years old or younger who had specific GD-related diagnosis codes.

2. Constructed a second new table that joined the previous table with prescription data in order to calculate the minimum days difference between GD diagnosis and prescription issue date.
3. Filtered the previous table by only “high confidence” designated NDC codes.

Data Cleaning and Enriching

After the initial dataset was created and only included records of the drugs specified in the NDC Codes List above, the data was imported into Power Query for additional cleaning, enriching, and imputing.

Filter Days from Diagnosis to Prescription Written: The minimum days to GD diagnosis column was filtered to include only records where the diagnosis occurred within 90 days before or after the prescription was written.

Replace and Remove Values: Replaced "nan" and "None" values with nulls in specified columns and removed unnecessary columns.

Merge and Expand Data: Merged the dataset with approved NDC codes to include details on whether the drug was hormone-related or puberty blocker.

Added NPPES Provider Details: Facility and system details were inferred using the prescription script writer’s (HCP) NPI record from NPPES, supplemented by other publicly available provider directories. Geodata, including city and state, was populated based on the provider's registered location in NPPES.

> ***Update 10/23/24:*** *Because prescription data uses the inferred facility based on where the script writer (HCP) billed the majority of their claims over the prior year, while the city and state were pulled from the script writer’s (HCP) NPPES record, discrepancies arose in cases where the facility performing the majority of claims was located in a different city or state than the script writer’s registered address. To resolve these discrepancies, we updated the data to reflect the city and state of the inferred facility, ensuring a more accurate representation of the physical location of service. However, since facility details are inferred from claim patterns rather than the exact location where the prescription was written, the data may not always match the precise prescribing location.*

Filter to Prescription Write Date as a Minor: Merged the dataset with the prescription date calculated table for additional patient information in order to filter patients to those whose prescription was written at age 17.5 or younger. This ensured that only those records with both a gender diagnosis and prescription as a minor were included.

Fuzzy Matching for Children's Hospitals: To determine which prescription writer facilities in the query output were part of a list of the top children's hospitals in the U.S., fuzzy matching was used to join datasets based on facility and system names. Facilities with a high percentage match were then manually validated to confirm that the facility name listed in the NPPES database matched the name of the hospital in the top children's hospitals list. For facilities identified as official children's hospitals, the official address was manually identified and used in lieu of any city/state listed in the claims data record to ensure accuracy.

Clean Up and Finalization: Replaced system values with "Independent/No system" and removed duplicate rows to finalize the dataset.

COMBINING DATASETS: DATA DICTIONARY

The surgeries and prescriptions datasets were consolidated into a single summarized dataset for public release. Shared terms, as defined in the Data Dictionary below, facilitated this integration. Due to limited latitude/longitude data (available for only about 66% of the NPPES database), geographic data is represented by city, state, and ZIP code.

This dataset is summarized at the system and facility levels for public publication.

The Combined Field column lists the unified dataset columns created by merging both datasets. For example, "script_id" from the prescriptions data and "encounter_id" from the surgeries data were unified into "script_encounter_id" below:

Combined Field	Prescriptions Data	Surgeries Data
journey_id	Randomly generated identifier unique to each longitudinal patient journey.	Randomly generated identifier unique to each longitudinal patient journey.
script_encounter_id	Uses script_id - Randomly generated identifier unique to each prescription claim.	Uses encounter_id - Randomly generated identifier, unique to an isolated event of care.

allowed_patient_pay	Uses patient_pay - Patient cost responsibility as determined by payor.	Uses smart_allowed - Line-item estimate of allowed amount, utilizing proprietary ML on CMS, Price Transparency and Actual Adjudicated amounts to provide estimates within an average of 5% variance from actuals.
type	Type of prescription drug (hormone-related, puberty blocker; statins filtered out).	N/A
facility	Uses hcp_nppes_full.facility - for prescription data, facility details are inferred from the healthcare provider's (HCP) NPI record in NPPES and other publicly available provider directories, based on where that individual npi billed a majority of their claims over the prior year -- this may not reflect the actual location where the prescription was written. The facility names are cleaned and normalized for readability utilizing multiple public data sources, including but not limited to the NPPES database.	Uses hco_nppes_full.facility - facility name based on the Organizational provider of an encounter, identified via their National Provider Identifier (NPI) registered with NPPES. The facility names are cleaned and normalized for readability utilizing multiple public data sources, including but not limited to the NPPES database.
system	Uses hcp_nppes_full.system - system name based on the National Provider Identifier (NPI) of the individual that wrote the prescription for the patient, as registered with NPPES.	Uses system_unified - a coalesce imputation waterfall that follows the following logic: – Step 1: It checks if the value in [nppes_full.system] is not empty or null. If it's not empty, it uses this value. – Step 2: If [nppes_full.system] is empty or null, it then checks [CH List_system_gendercenter.System]. If this value is not empty or null, it uses this value. – Step 3: If both [nppes_full.system] and [CH List_system_gendercenter.System] are empty or null, it checks [hco_ein_system_inferred]. If this value is not empty or null, it uses this value. – Step 4: If all the above are empty or null, it checks [system_GPT]. If this value is not empty or null, it uses this value. – Step 5: If [hco_npi] is empty or null

		and [hcp_ein_system_inferred] is not empty or null, it uses [hcp_ein_system_inferred]. – Step 6: If none of the above conditions are met, it returns null.
city	Uses city of the inferred facility (hcp_nppes_full.facility) - for prescription data, facility details are inferred from the healthcare provider's (HCP) NPI record in NPPES and other publicly available provider directories, based on where that individual npi billed a majority of their claims over the prior year -- this may not reflect the actual location where the prescription was written.	Uses hco_nppes_full.city - city name based on the Organizational provider of an encounter, identified via their National Provider Identifier (NPI) registered with NPPES.
state	Uses state of the inferred facility (hcp_nppes_full.facility) - for prescription data, facility details are inferred from the healthcare provider's (HCP) NPI record in NPPES and other publicly available provider directories, based on where that individual npi billed a majority of their claims over the prior year -- this may not reflect the actual location where the prescription was written.	Uses hco_nppes_full.state - state based on the Organizational provider of an encounter, identified via their National Provider Identifier (NPI) registered with NPPES.
date	Uses script_date - Date the prescription was written.	Uses claim_date - Primary date of each encounter.
charge	Uses submitted_cost - Pharmacy submitted cost of the claim. This is the amount that a pharmacy or healthcare provider reports to the insurance company as the charge for a specific prescription drug claim, and it does not reflect any adjustments, such as discounts, negotiated rates, or patient co-payments.	Uses claim_charge - Line-item charge submitted to insurers along with facility and revenue center charge considerations. The line charge is the pre-adjudicated value submitted to insurers. This is the initial financial value sent from the medical provider to the insurer via the 837 claim form.
childrens_hospital	Lists the DNH-provided childrens hospital associated with the facility.	Lists the DNH-provided childrens hospital associated with the facility.
year	Uses year in script_date - Date the prescription was written.	Uses year in claim_date - Primary date of each encounter.

APPENDIX: DIAGNOSIS, PROCEDURE, AND NDC CODES

Diagnosis Codes

The following diagnosis codes were used as a baseline filter to ensure that any surgical procedures or prescriptions were related to a gender transition. See Procedure Codes and NDC Codes section below for additional detail on how the Diagnosis Codes were utilized.

ICD-10 diagnosis code	Description
3023	transvestic fetishism
3025	trans-sexualism
3026	gender identity disorder in children
30251	trans-sexualism with asexual history
30252	trans-sexualism with homosexual history
30253	trans-sexualism with heterosexual history
30285	gender identity disorder in adolescents or adults
302500	trans-sexualism with unspecified sexual history
F64	transexualism
F640	Transsexualism
F641	Dual role transvestism
F642	gender identity disorder of childhood
F648	other gender identity disorders
F649	gender identity disorder, unspecified
F651	Transvestic fetishism
Z87890	history of sex reassignment

Procedure Codes

The following surgical procedures codes were vetted by medical professionals and experienced clinicians, and designated as **high confidence that the procedure was used for gender transitions**, as long as the procedure **included at least one of the corresponding diagnoses** listed in the Diagnosis Codes list above.

Code	Description
15241	Full thickness skin graft to forehead, cheeks, chin, mouth, neck, underarms, genitals, hands, or feet, each additional 20.0 sq cm
14301	Repair of wound by transferring skin, 30.1-60.0 sq cm
14041	Repair of wound of forehead, cheeks, chin, mouth, neck, underarms, genitals, hands, or feet by transferring skin, 10.1-30.0 sq cm
54125	Amputation of penis
21125	Enlargement of lower jaw with implant

21127	Insertion of bone grafts between portions of bone to enlarge lower jaw bone
15820	Repair of lower eyelid defect
15821	Removal of excessive skin of lower eyelid and fat around eye
15823	Removal of excessive skin and fat of upper eyelid
19357	Reconstruction of breast using tissue expander
19325	Insertion of breast implant
19324	Breast augmentation without prosthetic implant
56805	Reconstruction or creation of the external female sexual organ for intersex state
14302	Repair of wound by transferring skin, each additional 30.0 sq cm
15240	Full thickness skin graft to forehead, cheeks, chin, mouth, neck, underarms, genitals, hands, or feet, 20.0 sq cm or less
57292	Construction of artificial vagina using tissue graft
57291	Construction of artificial vagina
15822	Removal of excessive skin of upper eyelid
19316	Repair for sagging of the breast
21120	Implantation of graft to enlarge chin bone
11950	Injection of filling material under skin, 1.0 cc or less
21209	Incision and repair of bony defect of cheek bone including bony segment reduction
31580	Repair of congenital vocal cord defect with insertion of indwelling stent
15876	Suction assisted removal of fat of head and neck
30400	Reshaping of tip of nose
30410	Reshaping of bone, cartilage, and/or tip of nose
30420	Reshaping of bony cartilage dividing nasal passages
15828	Removal of wrinkles and extra skin of cheeks, chin, and neck
31899	Other procedure on windpipe or lung airway
21899	Other procedure on neck or chest
31599	Other procedure on voice box
15750	Creation of nerve and blood vessel skin graft
51040	Incision of bladder with drainage
17380	Hair removal by electrolysis, each 30 minutes
15830	Removal of extra skin and tissue of abdomen
15836	Removal of extra skin and tissue of arm
15835	Removal of extra skin and tissue of buttock
15837	Removal of extra skin and tissue of forearm or hand
15834	Removal of extra skin and tissue of hip
15833	Removal of extra skin and tissue of leg
15839	Removal of extra skin and tissue of other area
15838	Removal of extra skin and tissue of chin
15832	Removal of extra skin and tissue of thigh
15756	Muscle graft with repair of small blood vessel
15758	Tissue graft with repair of small blood vessel
20969	Placement of skin and bone flap with microvascular connection
20970	Placement of bone and skin flap from hip bone with connection of small blood vessels
20972	Placement of bone and skin flap from foot bone with connection of small blood vessels
15200	Full thickness skin graft to trunk, 20.0 sq cm or less
15201	Full thickness skin graft to trunk, each additional 20.0 sq cm
21122	Enlargement of chin by movement of multiple bones
21121	Enlargement of chin by movement of bone
21123	Insertion of sliding bone graft to enlarge chin bone, additional bone graft
15773	Graft using patient's fat removed by liposuction and inserted into face, eyelids, mouth, neck, ears, around eyes, genitals, hands, or feet, 25.0 cc or less
15774	Graft using patient's fat removed by liposuction and inserted into face, eyelids, mouth, neck, ears, around eyes, genitals, hands, or feet, each additional 25.0 cc
15771	Graft using patient's fat removed by liposuction and inserted into trunk, breasts, scalp, arms, or legs, 50.0 cc or less

15772	Graft using patient's fat removed by liposuction and inserted into trunk, breasts, scalp, arms, or legs, each additional 50.0 cc
15769	Self soft tissue graft
58550	Removal of uterus through vagina using an endoscope, 250.0 g or less
58552	Removal of uterus, tubes, and/or ovaries through vagina using an endoscope, 250.0 g or less
58553	Removal of uterus through vagina using an endoscope, more than 250.0
58554	Removal of uterus, tubes, and/or ovaries through vagina using an endoscope, more than 250.0 g
58570	Removal of uterus through abdomen using an endoscope, 250.0 g or less
58571	Removal of uterus, tubes, and/or ovaries through abdomen using an endoscope, 250.0 g or less
58572	Removal of uterus through abdomen using an endoscope, more than 250.0 g
58573	Removal of uterus, tubes, and/or ovaries through abdomen using an endoscope, more than 250.0 g
58180	Removal of uterus through abdomen
58260	Removal of uterus through vagina, 250.0 g or less
58262	Removal of uterus, tubes, and/or ovaries through vagina, 250.0 g or less
58275	Removal of uterus and vagina
58290	Removal of uterus through vagina, more than 250.0 g
58291	Removal of uterus, tubes, and/or ovaries through vagina, more than 250.0 g
58541	Partial removal of uterus with retention of cervix using an endoscope, 250.0 g or less
58542	Partial removal of uterus, tubes, and/or ovaries with retention of cervix using an endoscope, 250.0 g or less
58543	Partial removal of uterus with retention of cervix using an endoscope, more than 250.0 g
58544	Partial removal of uterus, tubes, and/or ovaries with retention of cervix using an endoscope, more than 250.0 g
58150	Removal of uterus and cervix through abdomen
19340	Placement of implant on same day of breast reconstruction
55980	Operation to change sex female to male
57425	Surgical repair of vaginal defect using an endoscope
19303	Simple complete removal of breast
55899	Other procedure on male genital system
64856	Suture and relocation of arm or leg peripheral nerve
19350	Reconstruction of nipple or area around nipple
5452050	Orchiectomy, bilateral
54520	Simple removal of testicle
54690	Removal of testicles using an endoscope
21208	Incision and repair of bony defect of cheek bone with repositioning of bony segment
20926	Peritoneal graft for neo-vaginal canal
55866	Surgical removal of prostate and surrounding lymph nodes using an endoscope
15775	Hair transplant, 1-15 punch grafts
15776	Hair transplant, more than 15 punch grafts
15757	Skin graft with repair of small blood vessel
55970	Operation to change sex male to female
19318	Breast reduction
56800	Plastic repair of vaginal opening
57426	Revision or removal of prosthetic vaginal graft using an endoscope
57296	Revision or removal of prosthetic vaginal graft
57295	Revision of prosthetic vaginal graft
30435	Revision to reshape nasal bones after previous repair
30450	Revision to reshape nasal bones and tip of nose after previous repair
30430	Revision to reshape nose or small amount of tip of nose after previous repair
15824	Removal of wrinkles and extra skin of forehead
15826	Incision, stretching, and suture of skin between eyebrows
15825	Removal of wrinkles and extra skin of neck
15829	Removal of wrinkles and extra skin with grafting of cheeks, chin, and neck
58954	Removal of lining of abdomen, uterus, ovaries, fallopian tubes, and lymph nodes of pelvis and aorta for reduction of growth
58720	Removal of uterine tubes and ovaries
55180	Complicated repair of scrotum

55175	Simple repair of scrotum
15101	Partial thickness self skin graft of trunk, arms, or legs, each additional 100.0 sq cm or 1% body area for infants and children, or less
15100	Partial thickness self skin graft to trunk, arms, or legs, 100.0 sq cm or 1% body area for infants and children, or less
11951	Injection of filling material under skin, 1.1-5.0 cc
11952	Injection of filling material under skin, 5.1-10.0 cc
11954	Injection of filling material under skin, more than 10.0 cc
19304	Subcutaneous mastectomy (nipple sparing for peri-areolar techniques)
15879	Suction assisted removal of fat of leg
15877	Suction assisted removal of fat of body
15878	Suction assisted removal of fat of arm
54660	Insertion of testicular implant
53450	Repair of urethra and urinary opening
53431	Repair of urethra and/or lower bladder for incontinence
53410	Reconstruction of urethra in male
53420	Reconstruction or repair of urethra, stage 1 of 2
53430	Reconstruction of urethra in female
53425	Reconstruction or repair of urethra, stage 2 of 2
57110	Removal of vaginal wall
57106	Partial removal of vaginal wall
57335	Plastic repair of vagina for intersex state
56625	Removal of external female genitals

NDC Codes

The following National Drug Codes (NDC) were vetted by the medical professionals and ranked as **high confidence that the prescription was used for gender transitions**, as long as the patient who was prescribed the drug had one of the **corresponding diagnoses (listed in the Diagnosis Codes table above) within 90 days before or after the prescription was written.**

In analyzing the claims data, the 90-day window between the gender transition diagnosis date and the prescription write date was selected to ensure association between the two. The 90-day period accommodates potential delays in claim processing and allows for a comprehensive capture of relevant prescriptions. The use of absolute values for days ensures inclusion of cases where the diagnosis claim might be processed after the prescription is written.

FDA National Drug Code version 11 standardized code for a dispensed drug	**Name**
9027101	depo-estradiol
9074635	depo-provera
9074630	depo-provera
9008601	depo-testosterone
9041702	depo-testosterone

9008610	depo-testosterone
9034702	depo-testosterone
430072124	estrace
430072024	estrace
430375414	estrace
430072224	estrace
781713454	estradiol
378730653	estradiol
378728153	estradiol
378731685	estradiol
378655053	estradiol
378728053	estradiol
378729453	estradiol
378336099	estradiol
378730753	estradiol
555088604	estradiol
378728853	estradiol
378462226	estradiol
378334999	estradiol
555088704	estradiol
781711954	estradiol
378729653	estradiol
143929101	estradiol
93322397	estradiol
378462026	estradiol
93354143	estradiol
93767902	estradiol
517044001	estradiol
378335299	estradiol
378877035	estradiol
378464126	estradiol
378728753	estradiol
378730353	estradiol
378335099	estradiol
378462126	estradiol
378730053	estradiol
781715640	estradiol
378729553	estradiol
378336199	estradiol
378730853	estradiol
781713654	estradiol
555088702	estradiol
378729953	estradiol
378728590	estradiol
378335199	estradiol
378464326	estradiol
781710454	estradiol
378464026	estradiol
378727453	estradiol
781407515	estradiol
93322308	estradiol
555089902	estradiol
378464226	estradiol
378464426	estradiol
555088602	estradiol

781712940	estradiol
143928901	estradiol
378729753	estradiol
378728353	estradiol
781712254	estradiol
517042001	estradiol
781713354	estradiol
378461926	estradiol
378462326	estradiol
93735556	finasteride
93735505	finasteride
904683061	finasteride
904683006	finasteride
93735598	finasteride
52030151	ganirelix (Antagon)
93532862	junel
555902542	junel
555902858	junel
555902658	junel
555902742	junel
781400332	leuprolide acetate
74105205	LUPANETA PACK
74364203	lupron depot
74368303	lupron depot
74347303	lupron depot
74228203	lupron depot
74969403	lupron depot
74334603	lupron depot
74357501	lupron depot
74364103	lupron depot
74366303	lupron depot
74210803	lupron depot
74244003	lupron depot
555077904	medroxyprogesterone acetate
548570100	medroxyprogesterone acetate
548540000	medroxyprogesterone acetate
555087304	medroxyprogesterone acetate
555087302	medroxyprogesterone acetate
548541000	medroxyprogesterone acetate
555077902	medroxyprogesterone acetate
548541025	medroxyprogesterone acetate
378729253	norethindrone
378729189	norethindrone
378727253	norethindrone
555021110	norethindrone
555901258	nortrel
555901058	nortrel
555900867	nortrel
555913167	ocella
46110181	premarin
46110281	premarin
46087221	premarin
46110291	premarin
46074905	premarin
46110081	premarin

46110381	premarin
591312879	progesterone
517176701	progesterone
378024301	spironolactone
378043701	spironolactone
378214601	spironolactone
378024305	spironolactone
93214062	sprintec
555901658	sprintec
555901858	sprintec
25016608	SYNAREL
143900501	testosterone
409656222	testosterone
143975001	testosterone
591321730	testosterone
591236360	testosterone
591292630	testosterone
832112035	testosterone
409656201	testosterone
574082001	testosterone
143965901	testosterone
409656220	testosterone
591321630	testosterone
409656202	testosterone
574082010	testosterone
832112142	testosterone
591292530	testosterone
603783188	testosterone
517183001	testosterone
574082701	testosterone
143972601	testosterone
591352430	testosterone
591412879	testosterone
591211481	testosterone
591292418	testosterone
574082710	testosterone
409655701	testosterone
832112005	testosterone
23590623	TRELSTAR
23590412	TRELSTAR
51848888	Adrogel 1%, 1.62%
51846233	Adrogel 1%, 1.62%
51846212	Adrogel 1%, 1.62%
51842501	Adrogel 1%, 1.62%
51846230	Adrogel 1%, 1.62%
51846231	Adrogel 1%, 1.62%
51848833	Adrogel 1%, 1.62%
51842530	Adrogel 1%, 1.62%
9737611	depo-provera
9041701	depo-testosterone
9008510	depo-testosterone
378728490	estradiol
143929001	estradiol
74105305	LUPANETA PACK
74377903	lupron depot

555087202	medroxyprogesterone acetate
548540025	medroxyprogesterone acetate
555900942	nortrel
74003828	Orilissa Pro (Elagolix)
46110481	premarin
13668017990	rosuvastatin calcium
13668018090	rosuvastatin calcium
13668018005	rosuvastatin calcium
13668017905	rosuvastatin calcium
378214605	spironolactone
591292102	testosterone
69536010388	aftera
16714063101	alendronate sodium
65862032904	alendronate sodium
45802016972	alogliptin and metformin hydrochloride
52544029528	amethyst
68001015508	anastrozole
16729003515	anastrozole
16729003516	anastrozole
68382020906	anastrozole
59651023630	anastrozole
51991062033	anastrozole
16729003510	anastrozole
51991062090	anastrozole
59651023690	anastrozole
68001015504	anastrozole
17139056288	androgel
50419048303	angeliq
50261031301	annovera
75834025701	atorvastatin calcium
75834025601	atorvastatin calcium
75834025501	atorvastatin calcium
16714017301	atorvastatin calcium
16714017303	atorvastatin calcium
16714017401	atorvastatin calcium
16714017502	atorvastatin calcium
16714017403	atorvastatin calcium
60505257809	atorvastatin calcium
60505257909	atorvastatin calcium
16714017501	atorvastatin calcium
16714017503	atorvastatin calcium
60505258009	atorvastatin calcium
60505267108	atorvastatin calcium
16714017402	atorvastatin calcium
60505257808	atorvastatin calcium
60505257908	atorvastatin calcium
60505258008	atorvastatin calcium
68382024910	atorvastatin calcium
16729004617	atorvastatin calcium
69097094405	atorvastatin calcium
63304082790	atorvastatin calcium
67877051290	atorvastatin calcium
43598083005	atorvastatin calcium
70377002713	atorvastatin calcium
70377002811	atorvastatin calcium

72205002205	atorvastatin calcium
55111012290	atorvastatin calcium
62175089043	atorvastatin calcium
68382025110	atorvastatin calcium
16729004517	atorvastatin calcium
16729004716	atorvastatin calcium
68180063502	atorvastatin calcium
68180063509	atorvastatin calcium
68180063702	atorvastatin calcium
63304082805	atorvastatin calcium
42571017210	atorvastatin calcium
67877051110	atorvastatin calcium
67877051210	atorvastatin calcium
67877051305	atorvastatin calcium
67877051310	atorvastatin calcium
72205002390	atorvastatin calcium
72205002499	atorvastatin calcium
62175089143	atorvastatin calcium
68382025010	atorvastatin calcium
68382025016	atorvastatin calcium
16729004417	atorvastatin calcium
70377002911	atorvastatin calcium
70377002913	atorvastatin calcium
72205002405	atorvastatin calcium
72205002599	atorvastatin calcium
55111012190	atorvastatin calcium
69097094505	atorvastatin calcium
68180063602	atorvastatin calcium
63304082705	atorvastatin calcium
63304082890	atorvastatin calcium
63304082905	atorvastatin calcium
67877051390	atorvastatin calcium
43598083105	atorvastatin calcium
68382025116	atorvastatin calcium
68382024916	atorvastatin calcium
70377002711	atorvastatin calcium
70377002813	atorvastatin calcium
72205002290	atorvastatin calcium
72205002305	atorvastatin calcium
72205002505	atorvastatin calcium
70377003012	atorvastatin calcium
55111012105	atorvastatin calcium
55111012205	atorvastatin calcium
55111012305	atorvastatin calcium
68180063609	atorvastatin calcium
68180063709	atorvastatin calcium
63304082990	atorvastatin calcium
67877051190	atorvastatin calcium
43598083205	atorvastatin calcium
65862093574	aurovela 1.5/30
65862093988	aurovela 1/20
67979051143	aveed
51285042410	aygestin
47335048583	bicalutamide
47335048588	bicalutamide

16714081602	bicalutamide
62559089030	bicalutamide
16714081601	bicalutamide
16729002301	bicalutamide
16729002310	bicalutamide
68462031629	briellyn
51862088403	camila
46287002004	carospir
46287002050	carospir
46287002001	carospir
17478079312	cetrorelix
44087122501	cetrotide
63323003011	chorionic gonadotropin
50419045404	climara
50419045104	climara
50419045204	climara
50419045304	climara
50419049104	climara pro
49884070155	clomiphene citrate
49884070154	clomiphene citrate
68968051408	combipatch (estradiol/norethindrone acetate transd
68968052508	combipatch (estradiol/norethindrone acetate transd
62135047660	danazol
71205086255	danazol
71205086260	danazol
71205086230	danazol
42023011101	delestrogen
42023011201	delestrogen
42023011001	delestrogen
51862051403	desogestrel and ethinyl estradiol
51862051401	desogestrel and ethinyl estradiol
68025006630	divigel
68025006730	divigel
68025006530	divigel
68025008630	divigel
50742065928	dolishale
50742065984	dolishale
65162099308	dotti
65162099208	dotti
65162098908	dotti
65162099508	dotti
65162099708	dotti
75834011629	drospirenone and ethinyl estradiol
68462073329	drospirenone and ethinyl estradiol
68180086873	drospirenone and ethinyl estradiol
68462072029	drospirenone and ethinyl estradiol
31722094531	drospirenone and ethinyl estradiol
75834011684	drospirenone and ethinyl estradiol
68180090273	drospirenone and ethinyl estradiol
31722093432	drospirenone and ethinyl estradiol
75834011529	drospirenone and ethinyl estradiol
68180089473	drospirenone, ethinyl estradiol and levomefolate c
65162075009	dutasteride
42806054909	dutasteride
31722013190	dutasteride

65162075003	dutasteride
42806054930	dutasteride
31722013130	dutasteride
62935075375	eligard
62935030330	eligard
62935045345	eligard
62935022305	eligard
62935046150	eligard
73302045601	ella
50090542200	ella
65162046935	eluryng
55566650003	endometrin
51862088603	errin
51293064001	esterified estrogens and methyltestosterone
24658070305	estradiol
42806008701	estradiol
42806008805	estradiol
51862033405	estradiol
70700014435	estradiol
70700014535	estradiol
70700019535	estradiol
13811009332	estradiol
13811009432	estradiol
68968341008	estradiol
42806008705	estradiol
42806008901	estradiol
68968345008	estradiol
42806008801	estradiol
51862033305	estradiol
51862033401	estradiol
68968347508	estradiol
70700014335	estradiol
24658070401	estradiol
42806008905	estradiol
68968342508	estradiol
68968343708	estradiol
47781010444	estradiol
50742065884	estradiol and norethindrone acetate
50742065728	estradiol and norethindrone acetate
45802009735	estradiol vaginal
66993000210	estradiol vaginal cream
68462071188	estradiol vaginal inserts
68462071171	estradiol vaginal inserts
70700027322	estradiol valerate
70700027522	estradiol valerate
70700027422	estradiol valerate
17139061740	estrogel
66993060536	etonogestrel/ethinyl estradiol
72495020210	femring
62935015350	fensolvi
62935016360	fensolvi
16729009016	finasteride
65862014930	finasteride
68645054154	finasteride
65862092790	finasteride

67877028890	finasteride
43598039030	finasteride
16729009010	finasteride
16729009015	finasteride
67877045590	finasteride
43598039090	finasteride
57237006290	finasteride
47335071483	finasteride
31722052530	finasteride
31722052690	finasteride
65862092730	finasteride
50268031415	finasteride
65862014990	finasteride
43598030390	finasteride
16729008910	finasteride
16729009001	finasteride
65862014905	finasteride
67877028810	finasteride
43598030330	finasteride
57237006190	finasteride
57237006230	finasteride
31722052510	finasteride
69097011202	finasteride
16729008915	finasteride
57237006130	finasteride
57237006205	finasteride
31722052590	finasteride
31722052630	finasteride
63481018316	fortesta
68180082773	fyavolv
55566101001	fyremadel
78206013801	ganirelix acetate
71288055480	ganirelix acetate
55566100001	ganirelix acetate
44087903001	gonal-f
44087111701	gonal-f rff redi-ject
44087111501	gonal-f rff redi-ject
44087111601	gonal-f rff redi-ject
68462050481	hailey 1.5/30
51862014803	haloette
68462030329	heather
50742035201	her style
50261010408	imvexxy
50261010418	imvexxy
50261011018	imvexxy
50261011008	imvexxy
65862092585	incassia
69087015812	jatenzo
69087023712	jatenzo
69087019812	jatenzo
68180087773	jencycla
64764033560	kazano
50419042401	kyleena
80603010122	kyzatrex
16729003410	letrozole

16729003415	letrozole
59651018030	letrozole
51991075910	letrozole
51991075933	letrozole
72664061128	leuprolide acetate
47335093640	leuprolide acetate
69097090950	leuprolide acetate depot
70700016406	levonorgestrel
68462063729	levonorgestrel and ethinyl estradiol
68180085473	levonorgestrel and ethinyl estradiol
68180084313	levonorgestrel and ethinyl estradiol
68462067295	levonorgestrel and ethinyl estradiol
68180084813	levonorgestrel and ethinyl estradiol and ethinyl e
66869020490	livalo
51285013197	loestrin 21 day
51285012797	loestrin 21 day
70700011485	loryna
68180046701	lovastatin
68180046703	lovastatin
61442014210	lovastatin
68645056790	lovastatin
68001031400	lovastatin
68180046801	lovastatin
68180046807	lovastatin
68180046707	lovastatin
68180046803	lovastatin
68180046903	lovastatin
51862056406	low-ogestrel
50102030013	lyleq
65162014808	lyllana
65162014908	lyllana
65162012608	lyllana
65162015008	lyllana
65162022808	lyllana
64011030103	makena
50090592500	medroxyprogesterone acetate
59762005501	medroxyprogesterone acetate
59762005601	medroxyprogesterone acetate
59762005801	medroxyprogesterone acetate
16714099901	medroxyprogesterone acetate
59762453701	medroxyprogesterone acetate
67457088701	medroxyprogesterone acetate
16714098101	medroxyprogesterone acetate
16714098102	medroxyprogesterone acetate
66993037025	medroxyprogesterone acetate
66993037083	medroxyprogesterone acetate
59762453802	medroxyprogesterone acetate
62756009045	medroxyprogesterone acetate
62756009140	medroxyprogesterone acetate
67457088799	medroxyprogesterone acetate
50102059140	medroxyprogesterone acetate
62756009040	medroxyprogesterone acetate
59762453702	medroxyprogesterone acetate
66993037179	medroxyprogesterone acetate
55150033001	medroxyprogesterone acetate

55150032901	medroxyprogesterone acetate
50090332800	medroxyprogesterone acetate
64380015902	megestrol acetate
64380016002	megestrol acetate
49884028901	megestrol acetate
49884029001	megestrol acetate
49884090738	megestrol acetate
50383085924	megestrol acetate
64380015901	megestrol acetate
64380016001	megestrol acetate
49884029005	megestrol acetate
49884090761	megestrol acetate
50419045504	menostar
51862087206	microgestin 1.5/30
51862086806	microgestin 1/20
51862064803	microgestin 24 fe
51862064801	microgestin 24 fe
51862087006	microgestin fe 1.5/30
51862086606	microgestin fe 1/20
43393000106	mifepristone
68968662508	minivelle
68968665008	minivelle
68968663708	minivelle
68968661008	minivelle
68968667508	minivelle
50419042301	mirena
16714036001	mono-linyah
16714036004	mono-linyah
62756072060	my choice tm
68180085211	my way
72974041501	myfembree
51862089203	necon
16714080901	new day
78206014501	nexplanon
52544062928	nora be
68180087613	norethindrone
68462030529	norethindrone
68180087673	norethindrone
42291065090	norethindrone acetate
50742026750	norethindrone acetate
65162047509	norethindrone acetate
68462030450	norethindrone acetate
65162047505	norethindrone acetate
75834013029	norethindrone acetate and ethinyl estradiol
68462013281	norethindrone acetate and ethinyl estradiol
68462065790	norethindrone acetate and ethinyl estradiol
75834012929	norethindrone acetate and ethinyl estradiol
68462065629	norethindrone acetate and ethinyl estradiol
68462065729	norethindrone acetate and ethinyl estradiol
70700010185	norethindrone acetate and ethinyl estradiol
59762159905	norethindrone acetate and ethinyl estradiol and fe
68462037629	norethindrone acetate and ethinyl estradiol and fe
16714015503	norethindrone acetate and ethinyl estradiol, and f
42291056584	norgestimate and ethinyl estradiol
68180083873	norgestimate and ethinyl estradiol

68462030929	norgestimate and ethinyl estradiol
68180084073	norgestimate and ethinyl estradiol
68462056529	norgestimate and ethinyl estradiol
42291055384	norgestimate and ethinyl estradiol
78206014603	nuvaring
59630058090	osphena
55494058090	osphena
44087115001	ovidrel
16714034704	philith
16714034701	philith
69536016288	plan b one-step
68462019590	pravastatin sodium
60505016909	pravastatin sodium
68382007016	pravastatin sodium
16714055801	pravastatin sodium
16729000917	pravastatin sodium
60505016907	pravastatin sodium
60505017007	pravastatin sodium
55111022990	pravastatin sodium
68462019690	pravastatin sodium
68180048609	pravastatin sodium
16729000915	pravastatin sodium
42291066590	pravastatin sodium
60505016805	pravastatin sodium
60505016809	pravastatin sodium
16714055901	pravastatin sodium
68462019605	pravastatin sodium
16729000816	pravastatin sodium
69543037410	progesterone
69452014820	progesterone
69452014920	progesterone
65162080710	progesterone
65162080810	progesterone
43598034901	progesterone
43598035001	progesterone
55150030610	progesterone
63323026110	progesterone
59651015201	progesterone
16714015701	progesterone
16714015801	progesterone
69543037510	progesterone
70700016301	progesterone
69452023420	progesterone
69452023320	progesterone
59651015301	progesterone
70700016201	progesterone
55513071001	prolia
69543037230	prometrium
69543037310	prometrium
72989037230	prometrium
78206015201	propecia
78206015202	propecia
16714021301	raloxifene hydrochloride
65862070930	raloxifene hydrochloride
69097082502	raloxifene hydrochloride

65162005703	raloxifene hydrochloride
65162005709	raloxifene hydrochloride
65862070901	raloxifene hydrochloride
16729028417	rosuvastatin
31722088390	rosuvastatin
16729028517	rosuvastatin
31722088490	rosuvastatin
31722088530	rosuvastatin
31722088290	rosuvastatin
68462026190	rosuvastatin calcium
27808015703	rosuvastatin calcium
57237016990	rosuvastatin calcium
67877043990	rosuvastatin calcium
65862029490	rosuvastatin calcium
65862029690	rosuvastatin calcium
70377000713	rosuvastatin calcium
70377000812	rosuvastatin calcium
70377000813	rosuvastatin calcium
70377000911	rosuvastatin calcium
16714098801	rosuvastatin calcium
68462026110	rosuvastatin calcium
27808015503	rosuvastatin calcium
27808015803	rosuvastatin calcium
65862029590	rosuvastatin calcium
72205000399	rosuvastatin calcium
16714099101	rosuvastatin calcium
72205002790	rosuvastatin calcium
72205002799	rosuvastatin calcium
68462026390	rosuvastatin calcium
27808015701	rosuvastatin calcium
27808015801	rosuvastatin calcium
57237016999	rosuvastatin calcium
65862029390	rosuvastatin calcium
65862029630	rosuvastatin calcium
70377000612	rosuvastatin calcium
70377000613	rosuvastatin calcium
70377000712	rosuvastatin calcium
68462026290	rosuvastatin calcium
27808015601	rosuvastatin calcium
27808015603	rosuvastatin calcium
67877044005	rosuvastatin calcium
67877044090	rosuvastatin calcium
16714098901	rosuvastatin calcium
16714099001	rosuvastatin calcium
27808015501	rosuvastatin calcium
72205000390	rosuvastatin calcium
72205000490	rosuvastatin calcium
72205000499	rosuvastatin calcium
68180047902	simvastatin
65862005299	simvastatin
68180047802	simvastatin
16729000515	simvastatin
70377000315	simvastatin
16714068102	simvastatin
16714068303	simvastatin

16729015615	simvastatin
68180046403	simvastatin
68180046409	simvastatin
68180047803	simvastatin
68180047903	simvastatin
65862005190	simvastatin
65862005290	simvastatin
16714068302	simvastatin
16714068403	simvastatin
16714068201	simvastatin
16714068203	simvastatin
16729000417	simvastatin
16729000517	simvastatin
16729000617	simvastatin
31722051210	simvastatin
50419042201	skyla
59651042701	spironolactone
16714008502	spironolactone
16714008602	spironolactone
65162051450	spironolactone
63629106701	spironolactone
63629106703	spironolactone
53746051101	spironolactone
53746051105	spironolactone
53746051505	spironolactone
69584085410	spironolactone
69584085450	spironolactone
72789029090	spironolactone
59746021601	spironolactone
53489014310	spironolactone
53489032905	spironolactone
53489032906	spironolactone
53489032907	spironolactone
53489032807	spironolactone
16729022601	spironolactone
16729022616	spironolactone
16729022716	spironolactone
59651042605	spironolactone
59651042705	spironolactone
16714008402	spironolactone
16714008403	spironolactone
16714008501	spironolactone
16714008601	spironolactone
65162051510	spironolactone
60687047601	spironolactone
68382066010	spironolactone
63629106201	spironolactone
63629106403	spironolactone
63629109201	spironolactone
63629109401	spironolactone
16714008603	spironolactone
63629109501	spironolactone
65162051110	spironolactone
69584085350	spironolactone
59746021701	spironolactone

43063083530	spironolactone
68382066201	spironolactone
16729022516	spironolactone
16729022701	spironolactone
59651042601	spironolactone
65162051410	spironolactone
72789029282	spironolactone
60687048701	spironolactone
68382066001	spironolactone
68382066005	spironolactone
68382066101	spironolactone
68382066205	spironolactone
53489032901	spironolactone
63629106101	spironolactone
16714008604	spironolactone
63629243801	spironolactone
65162051111	spironolactone
65162051150	spironolactone
69584085210	spironolactone
69584085250	spironolactone
69584085290	spironolactone
69584085310	spironolactone
53746051110	spironolactone
53746051405	spironolactone
59651042801	spironolactone
16714008401	spironolactone
68382066105	spironolactone
53489032801	spironolactone
53489032805	spironolactone
16729022501	spironolactone
16729022517	spironolactone
63629106501	spironolactone
63629106601	spironolactone
60687046501	spironolactone
51079097920	spironolactone
59746021605	spironolactone
59746021801	spironolactone
53489014301	spironolactone
53489014305	spironolactone
53746051401	spironolactone
53746051501	spironolactone
63739054410	spironolactone
63739054510	spironolactone
63629853901	spironolactone
53489014401	spironolactone and hydrochlorothiazide
53489014405	spironolactone and hydrochlorothiazide
63187091128	sprintec
67979000201	supprelin la
70700011585	syeda
69536020088	take action
59651029960	tamoxifen citrate
51862064260	tamoxifen citrate
59651030030	tamoxifen citrate
68382082614	tamoxifen citrate
51862064330	tamoxifen citrate

66887000105	testim
66887000420	testopel
66887000410	testopel
69097036344	testosterone
63629845501	testosterone
68180094311	testosterone
16714096701	testosterone
16714096902	testosterone
69238101302	testosterone
49884051072	testosterone
68180094111	testosterone
24979007815	testosterone
63629212401	testosterone
49884041872	testosterone
45802028139	testosterone
45802075401	testosterone
69339015810	testosterone
43598030488	testosterone
45802061001	testosterone
70700011221	testosterone
64380015102	testosterone
64380015202	testosterone
45802036665	testosterone
16714096802	testosterone
24979013026	testosterone
62756001740	testosterone cypionate
69097080232	testosterone cypionate
70700028922	testosterone cypionate
69097053737	testosterone cypionate
52536062501	testosterone cypionate
62756001540	testosterone cypionate
69097080237	testosterone cypionate
47781091091	testosterone cypionate
47781091193	testosterone cypionate
62756001640	testosterone cypionate
69097053637	testosterone cypionate
69097053731	testosterone cypionate
52536062510	testosterone cypionate
70700028822	testosterone cypionate
21922001902	testosterone gel, 1%
54436011220	tlando
74676590601	trelstar
16714036301	tri-linyah
16714036304	tri-linyah
24338015020	triptodur
71671010003	twirla
54436020004	xyosted
54436025004	xyosted
54436027504	xyosted
65162022623	yuvafem
65162022621	yuvafem
65162035803	zafemy
70720095130	zoladex
70720095036	zoladex
51862089406	zovia 1/35

Addendums

1. **Wolfson Children's Hospital**

   The prescriber's NPI associated with this claim was initially attributed to Wolfson Children's Hospital due to a gap in the inference logic. This occurred because the facility details were inferred from the prescriber's NPI record, based on where the majority of their claims had been billed over the prior year.

   Upon further review, in collaboration with Wolfson Children's Hospital, it was determined that the prescription likely originated from Granger Medical Clinic (NPI 1184657041). This conclusion was verified by cross-referencing procedural data from the time of the prescription with script records, confirming the facility where the patient was seen.

   As a result, the claim has been reattributed to the provider's current place of practice, Granger Medical Clinic in Utah, and is no longer associated with Wolfson Children's Hospital.