

Non-Government Application for Re-Use of Massachusetts All-Payer Claims Data Extract [Exhibit A: Data Application]

I. INSTRUCTIONS

This form is required for all Applicants, except Government Agencies as defined in [957 CMR 5.02](#), who wish to re-use Data received pursuant to a previously approved Data Application (“Extract”). **If the applicant requires data not presently held by its Organization the applicant should not use this form.** Re-use of All-Payer Claims Database data is limited to data released in Limited Data Set format (i.e., Release Versions 4.0 and later).

All attachments must be uploaded to IRBNet with your Application. All Application documents can be found on the [CHIA website](#) in Word and in PDF format or on [IRBNet](#) in Word format. If you submit a PDF document, please also include a Word version in order to facilitate edits that may be needed.

Applications will not be reviewed until the Application and all supporting documents are complete and the required application fee is submitted. A [Fee Remittance Form](#) with instructions for submitting the application fee is available on the CHIA website and IRBNet. A copy of the Fee Remittance Form and any supporting documentation must be uploaded to IRBNet.

II. ALL-PAYER CLAIMS DATABASE EXTRACT TO BE RE-USED	
Project Title:	Cost Analysis of Plagiocephaly Treatment
Extract Number:	385_UMMS_Lalikos
IRBNet Number:	1811815-1
Date of Data Use Agreement	9/29/22

III. ORGANIZATION AND INVESTIGATOR INFORMATION	
Project Title:	Closing the Gap- Examining Insurance Coverage for Gender-Affirming Surgeries in Massachusetts
IRBNet Number:	2096023-1
Organization Name:	University of Massachusetts Chan Medical School, Division of Plastic and Reconstructive Surgery
Organization Website:	https://www.umassmed.edu/surgery/divisions-and-programs/plastic-surgery/about-us/
Authorized Signatory for Organization	Janice F. Lalikos, MD
Title:	Professor of Surgery and Pediatrics
E-mail Address:	janice.lalikos2@umassmed.edu
Address, City/Town, State, Zip Code	UMass Plastic Surgery Research Lab S4-745, 55 Lake Avenue North, Worcester MA 01655
Primary Investigator:	Janice F. Lalikos, MD
Title:	Professor of Surgery and Pediatrics
E-mail Address:	Janice.lalikos2@umassmed.edu
Telephone Number:	508-826-0911
Names of Co-Investigators:	UMass Plastic Surgery Research Lab S4-745, 55 Lake Avenue North, Worcester MA 01655
E-mail Address of Co-Investigators:	Quynhanh.phan@umassmed.edu

IV. FEE INFORMATION

1. Consult the [Fee Schedule](#) for All-Payer Claims Database data and select from the following options:

- Researcher
 Other
 Reseller

2. Are you requesting a fee waiver?

- Yes
 No

3. Complete and submit the [Fee Remittance Form](#). If requesting a fee waiver, submit a letter stating the basis for your request (if required). Please refer to the [Fee Schedule](#) (effective Feb 1, 2017) for fee waiver criteria. (Please note that fee must be paid in order to re-use the Data, even if no new extract of data is required upon application approval.)

V. PROJECT INFORMATION

1. What will be the use of the CHIA Data requested? [Check all that apply]

- | | | |
|---|--|--|
| <input type="checkbox"/> Epidemiological | <input type="checkbox"/> Health planning/resource allocation | <input type="checkbox"/> Cost trends |
| <input type="checkbox"/> Longitudinal Research | <input type="checkbox"/> Quality of care assessment | <input type="checkbox"/> Rate setting |
| <input type="checkbox"/> Reference tool | <input checked="" type="checkbox"/> Research studies | <input type="checkbox"/> Severity index tool |
| <input type="checkbox"/> Surveillance | <input checked="" type="checkbox"/> Student research | <input type="checkbox"/> Utilization review of resources |
| <input type="checkbox"/> Inclusion in a product | <input type="checkbox"/> Other (describe in box below) | |

2. Provide a summary of the specific purpose and objectives of your Project. This may include research questions and/or business use Projects.

Despite living in one of the states with the most complete coverage of gender-affirming care, in 2017, 23.6% of transgender patients in Massachusetts report being unable to access transition-related care in the past 12 months, due to factors such as younger age, low income, low educational attainment, private insurance coverage, and healthcare discrimination[1]. This study seeks to provide valuable insights into the utilization of gender-affirming surgeries among transgender individuals and shed light on the trends and characteristics associated with these procedures. By examining the payer status of patients seeking these surgeries, we can better understand the financial barriers and access to care issues that transgender individuals may face. The specific questions that we seek to answer with this study are...

- What proportion of transgender patients are enrolled in MassHealth, private health insurance (HMO, EPO, POS, PPO), and multiple health insurances?

- Has the proportion of transgender patients utilizing MassHealth for GAS increased over time?
- How does the frequency of genital, chest, and facial surgeries coverage differ between MassHealth and private health insurances?
- What is the average real cost, copay and out of pocket cost of GAS through public insurance and private insurance?
- Does the frequency of GAS recipients differ between medically underserved areas (MUAs) and better served areas?

References

1. White Hughto, J.M., Rose, A.J., Pachankis, J.E. & Reisner, S.L. Barriers to gender transition-related healthcare: Identifying underserved transgender adults in Massachusetts. *Transgender health* 2, 107-118 (2017).

3. Has an Institutional Review Board (IRB) reviewed your Project?

- Yes [If yes, a copy of the approval letter and protocol must be included with the Application package on IRBNet.]
- No, this Project is not human subject research and does not require IRB review.

4. **Research Methodology:** Applicants must provide either the IRB protocol or a written description of the Project methodology (typically 1-2 pages), which should state the Project objectives and/or identify relevant research questions. This document must be included with the Application package on IRBNet and must provide sufficient detail to allow CHIA to understand how the Data will be used to meet objectives or address research questions.

VI. PUBLIC INTEREST

1. Briefly explain why completing your Project is in the public interest. *Uses that serve the public interest under CHIA regulation include, but are not limited to: health cost and utilization analysis to formulate public policy; studies that promote improvement in population health, health care quality or access; and health planning tied to evaluation or improvement of Massachusetts state government initiatives.*

Completion of the project is in the public interest because one of the goals of this study is to identify potential barriers to gender affirming surgeries in Massachusetts, especially in regard to chest, genital, and facial surgeries. This information would allow more clarity for surgeons and transgender patients, as well as inform future reimbursement policies.

VII. DATASETS REQUESTED

The Recipient will use Data included in the Extract referenced above for use in this Project; no new Data will be released under this Application.

1. Specify below the dataset(s) and year(s) of data requested for this Project, and provide your justification for requesting each dataset.

Medical Claims

2016 2017 2018 2019 2020

Describer how your research objectives require Medical Claims data:

In order for us to achieve our research objectives, it will be necessary to have access to healthcare codes so that we may identify relevant diagnoses and treatments. We would also need access to payment information to develop a full picture of the average costs of gender-affirming surgeries.

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Pharmacy Claims

2011 2012 2013 2014 2015

Describer how your research objectives require Pharmacy Claims data:

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Dental Claims

2011 2012 2013 2014 2015

Describer how your research objectives require Dental Claims data:

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Member Eligibility

2011 2012 2013 2014 2015

Describer how your research objectives require Member Eligibility data:

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Provider

2011 2012 2013 2014 2015

Describer how your research objectives require Provider data:

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Product

2011 2012 2013 2014 2015

Describer how your research objectives require Product data:

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2. If there are datasets that are included in the Extract that ***are not*** required for this Project indicate below.

- Medical Claims
 Pharmacy Claims
 Dental Claims
 Member Eligibility
 Provider
 Product

3. If there are datasets included in the Extract that are not required for this Project, describe below how those datasets will be segregated and protected from use in this Project.

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VIII. DATA ELEMENTS REQUESTED

State and federal privacy laws limit the release and use of Data to the minimum amount of data needed to accomplish a specific Project objective.

All-Payer Claims Database data is released in Limited Data Sets (LDS). Applicants receive the “Core” LDS, but may also request additional elements listed below for inclusion in their analyses. Requests for additional elements will be reviewed by CHIA to determine whether each represents the minimum data necessary to complete the specific Project objective.

1. Specify below which elements you are requesting in addition to the “Core” LDS and provide your justification for requesting each element.

Geographic Data

The geographic sub-divisions listed below are available for Massachusetts residents and providers only. Choose one of the following geographic options. *[Extracts with 5 digit zip code, have been filter to remove all claims that include a substance abuse diagnosis or treatment.]*

<input type="checkbox"/> 3-Digit Zip Code (standard)	<input checked="" type="checkbox"/> 5-Digit Zip Code***
<p>***If requested, provide justification for requesting 5-Digit Zip Code. Refer to specifics in your methodology:</p> <p>We request 5-digit zip codes because an important aim of our project is to identify transgender communities that are more likely to have MassHealth, which requires the increased precision of a 5 digit zip code. We also aim to examine the rates of gender affirming surgeries in medically underserved areas and compare them to better served areas. For</p>	

us to do this we will need 5 digit zip codes so that we may use the HUD crosswalk files to create a map of medically underserved areas. This would not be possible with only 3 digit zip codes.

Dates

Choose one option from the following options for dates:

<input type="checkbox"/> Year (YYYY) (Standard)	<input checked="" type="checkbox"/> Month (YYYYMM) ***	<input type="checkbox"/> Day (YYYYMMDD) *** [for selected data elements only]
<p>*** If requested, provide justification for requesting Month or Day. Refer to specifics in your methodology:</p> <p>We would request the increased date granularity of month vs year to detect the impact of the pandemic on decreasing access to care since the pandemic began in early 2020 for the following reasons:</p> <ul style="list-style-type: none"> • Covid-19 did not begin to have a significant impact on our healthcare system until early March. If we lumped data from Jan and Feb before the pandemic began its significant impact on our healthcare system, it may distort our results. • The effects the pandemic has had on our healthcare system have been rapid and frequently changing. If we only examined the entire year in aggregate, we would be unable to appreciate how access to care has changed or remained constant over the course of the year. • To further prevent potentially confounding variables from influencing our results we would also like to compare the month-to-month data from years prior to 2020 directly to 2020 monthly data. (i.e compare the rates of gender affirming surgeries from March 2016-2019 to that during March 2020) 		

National Provider Identifier (NPI)

Choose one of the following options for National Provider Identifier(s):

<input checked="" type="checkbox"/> Encrypted National Provider Identifier(s) (standard)	<input type="checkbox"/> Decrypted National Provider Identifier(s)***
<p>*** If requested, provide justification for requesting decrypted National Provider Identifier(s). Refer to specifics in your methodology:</p>	

2. If there are data elements that are included in the Extract that **are not** required for this Project indicate below.

5-Digit Zip Code Month (YYYYMM) Day (YYYYMMDD) Decrypted National Provider Identifier(s)

3. If there are data elements included in the Extract that are not required for this Project, describe below how the data elements will be segregated and protected from use in this Project.

IX. MEDICAID DATA

1. Is Medicaid Data included in the Extract?

Yes

No

2. Indicate whether you are seeking to use Medicaid Data for this Project:

Yes

No

3. Federal law (42 USC 1396a(a)7) restricts the use of individually identifiable data of Medicaid recipients to uses that are directly connected to the administration of the Medicaid program. If you are requesting Medicaid Data, please describe, in the space below, why your use of the data meets this requirement. Requests for Medicaid data will be forwarded to MassHealth for a determination as to whether the proposed use of the data is directly connected to the administration of the Medicaid program. This may introduce significant delays in the receipt of Medicaid Data.

Recipient may not use the Medicaid data for the new Project until Recipient is notified of MassHealth approval.

4. If the Extract contains Medicaid Data and you are not seeking to use Medicaid Data for this Project, or this Application is not approved by MassHealth, describe below how Medicaid Data will be segregated and protected from use in this Project.

X. DATA LINKAGE AND FURTHER DATA ABSTRACTION

Data linkage involves combining CHIA Data with other data to create a more extensive database for analysis. Data linkage is typically used to link multiple events or characteristics within one database that refer to a single person within CHIA Data.

1. Do you intend to link or merge CHIA Data to other data?

Yes

No linkage or merger with any other data will occur

2. If yes, please indicate below the types of data to which CHIA Data will be linked. [Check all that apply]

- Individual Patient Level Data (e.g., disease registries, death data)
- Individual Provider Level Data (e.g., American Medical Association Physician Masterfile)
- Individual Facility Level Data (e.g., American Hospital Association data)
- Aggregate Data (e.g., Census data)
- Other (please describe):

3. If yes, describe the dataset(s) to which the CHIA Data will be linked, indicate which CHIA data elements will be linked and the purpose for each linkage.

We plan reference a list of medically underserved areas as defined by the Health Services Administration, which will be converted from census tracts to 5 digit zip codes with the use of the HUD USPS Zip Code Crosswalk files to develop a map of medically underserved areas based on Zip code. This map we have created from HSA defined medically underserved areas will be used to see which patients in the database are from medically underserved areas so that we may analyze their data and compare it to those not residing in medically underserved areas. We may also link to Census data to get a better sense of the demographics of the communities studied.

4. If yes, for each proposed linkage above, please describe your method or selected algorithm (e.g., deterministic or probabilistic) for linking each dataset. If you intend to develop a unique algorithm, please describe how it will link each dataset.

Zip codes and census tracts do not always match exactly so the zip code assigned to communities where this occurs will be selected based on which one contains the largest proportion of the population, which is a suggested method of analysis by the HUD

5. If yes, please identify the specific steps you will take to prevent the identification of individual patients in the linked dataset.

To prevent the identification of individual patients we will not report information from any zip code on this map of medically underserved areas with a total number of patients less than 11

XI. PUBLICATION / DISSEMINATION / RE-RELEASE

1. Describe your plans to publish or otherwise disclose CHIA Data, or any data derived or extracted from CHIA Data, in any paper, report, website, statistical tabulation, seminar, conference, or other setting. Any and all publication of CHIA Data must comply with CHIA's cell size suppression policy, as set forth in the Data Use Agreement. Please explain how you will ensure that any publications will not disclose a cell less than 11, and percentages or other mathematical formulas that will result in the display of a cell less than 11.

We anticipate that the results of our analysis will be published in a professional journal, poster presentation, and/or a professional conference. After analysis of data, any cell that is less than 11 will be masked and not reported in any publications/presentations/etc.

2. Do you anticipate that the results of your analysis will be published and/or made publically available? If yes, describe how an interested party will obtain your analysis and, if applicable, the amount of the fee, that the third party must pay.

We only plan to disseminate the results of our analysis publicly.

3. Will you use CHIA Data for consulting purposes?

- Yes
 No

4. Will you be selling standard report products using CHIA Data?

- Yes
 No

5. Will you be selling a software product using CHIA Data?

- Yes
 No

6. Will you be reselling CHIA Data in any format?

- Yes
 No

If yes, in what format will you be reselling CHIA Data (e.g., as a standalone product, incorporated with a software product, by a subscription, etc.)?

7. If you have answered "yes" to questions 4, 5 or 6, please describe the types of products, services or studies.

8. If you have answered "yes" to questions 4, 5, or 6, what is the fee you will charge for such products, services or studies?

XII. APPLICANT QUALIFICATIONS

1. Describe your previous experience using claims data. This question should be answered by the primary investigator and any co-investigators who will be using the Data.

We have had previous experience using claims data from a previous project on plagiocephaly.

Janice F. Lalikos, MD is a board certified plastic surgeon and professor of surgery at UMass Chan Medical School with extensive experience in craniofacial surgery. She is the director of the craniofacial clinic at UMass Memorial Medical Center.

Quynh Anh Phan, BS is a medical student at UMass Chan Medical School.

Jessica Farzan, BS is a medical student at UMass Chan Medical School.

Quynh Trang Phan, BS is a Business Administration and Management Degree Holder from Boston University with a concentration in Business Analytics and Information Systems.

2. **Resumes/CVs:** If not submitted with a prior approved Application, when submitting your Application package on IRBNet, include résumés or curricula vitae of the principal investigator and co-investigators. (These attachments will not be posted on the internet.)

XIII. USE OF AGENTS AND/OR CONTRACTORS

Please note: By signing this Application, the Organization assumes all responsibility for the use, security and maintenance of the CHIA Data by its agents, including but not limited to contractors.

Provide the following information for all agents and contractors who will have access to the CHIA Data. *[Add agents or contractors as needed.]*

AGENT/CONTRACTOR #1 INFORMATION	
Company Name:	
Company Website:	
Contact Person:	
Title:	
E-mail Address:	
Address, City/Town, State, Zip Code:	
Telephone Number:	
Term of Contract:	

1. Describe the tasks and products assigned to the agent or contractor for this Project and their qualifications for completing the tasks.

2. Describe the Organization's oversight and monitoring of the activities and actions of the agent or contractor for this Project, including how the Organization will ensure the security of the CHIA Data to which the agent or contractor has access.

3. Will the agent or contractor have access to or store the CHIA Data at a location other than the Organization's location, off-site server and/or database?

- Yes
 No

4. If yes and a Data Management Plan for this agent or contractor is not part of the Data Use Agreement, a separate Data Management Plan **must** be completed by the agent or contractor.

AGENT/CONTRACTOR #2 INFORMATION	
Company Name:	
Company Website:	
Contact Person:	
Title:	
E-mail Address:	
Address, City/Town, State, Zip Code:	
Telephone Number:	
Term of Contract:	

1. Describe the tasks and products assigned to the agent or contractor for this Project and their qualifications for completing the tasks.

2. Describe the Organization's oversight and monitoring of the activities and actions of the agent or contractor for this Project, including how the Organization will ensure the security of the CHIA Data to which the agent or contractor has access.

3. Will the agent or contractor have access to or store the CHIA Data at a location other than the Applicant's location, off-site server and/or database?

- Yes
 No

4. If yes and a Data Management Plan for this agent or contractor is not part of the Data Use Agreement, a separate Data Management Plan **must** be completed by the agent or contractor.

XIV. ATTESTATION

By submitting this Application, the Organization attests that it is aware of its data use, privacy and security obligations imposed by state and federal law *and* confirms that it is compliant with such use, privacy and security standards. The Organization further agrees and understands that it is solely responsible for any breaches or unauthorized access, disclosure or use of CHIA Data, including, but not limited to, any breach or unauthorized access, disclosure or use by its agents.

The Organization's use of the Data for this Project will be governed by the executed Data Management Plan(s), Data Use Agreement, and any Amendment thereto.

By my signature below, I attest: (1) to the accuracy of the information provided herein; (2) that the requested Data is the minimum necessary to accomplish the purposes described herein; (3) that the Organization will meet the data privacy and security requirements described in this Application and supporting documents, and will ensure that any third party with access to the Data meets the data use, privacy and security requirements; and (4) to my authority to bind the Organization.

Signature: (Authorized Signatory for Organization)	DocuSigned by: <i>Brian Coleman</i>
Printed Name :	Brian Coleman
	Click here to enter text.

Attachments

A completed Application must have the following documents attached to the Application:

- 1. IRB approval letter and protocol (if applicable)
- 2. Research Methodology (if protocol is not attached)
- 3. CVs of Investigators (if not submitted previously)
- 5. Data Use Agreement

Applications will not be reviewed until they are complete, including all attachments. Applicant may not use the Extract for this Project until CHIA approval and the execution of an amendment to the Recipient's Data Use Agreement.

TRACKING TABLE (to be completed by CHIA staff only)	
Complete Application Received	
Application Fee Received	
Data Privacy Committee Review	
Data Release Committee Review	
Linkages Approved (as described)	
Executive Director Approval	
Data Fee Received	
Data of First Audit	
IT Extract #	

Attachment #1 – IRB Approval Letter & Protocol or Research Methodology

Attachment #2 – Data Management Plan(s)

Background:

After the implementation of the Affordable Care Act, in 2013, the Center for Medicare & Medicaid Services began covering gender-affirming treatments which resulted in an increased number of transgender individuals enrolled in these health programs. From 2012 to 2014, the number of patients seeking gender-affirming surgeries (GAS) who were covered by Medicare or Medicaid increased by 3-fold¹. Nevertheless, due to the absence of a nationwide policy, the responsibility of determining GAS coverage falls upon individual states, resulting in significant geographical disparities and uncertainty for transgender Medicare/Medicaid beneficiaries.

Currently, 23 states and Washington D.C. expressly include coverage for gender-affirming care in their Medicaid policies. Despite this, 40% of transgender Medicaid beneficiaries are still left without gender-affirmative care coverage due to the states they live in². To add to the complexity, while gender-affirming genital and chest surgeries were covered nearly ubiquitously among states whose Medicaid policies mandated GAS coverage, policies on facial surgeries remain disparate³. For example, in Maryland, Minnesota, Nevada, and Vermont, facial surgeries were defined as cosmetic surgery and thus not covered. Whereas Connecticut, Massachusetts, and Washington provide extensive facial surgeries coverage to Medicaid enrollees.

In Massachusetts, an estimated 7,000 out of 37,100 transgender adults are enrolled in MassHealth, the state's combined Medicaid and Children's Health Insurance Program². MassHealth covers medically necessary gender-affirming treatments, including GAS and hair removal. Covered GAS procedures as outlined under MassHealth policies include:

Masculinizing gender affirming surgeries:

- Bilateral mastectomy
- Reduction mammoplasty
- Chest reconstruction/contouring
- Hysterectomy
- Salpingo-oophorectomy
- Vulvectomy
- Vaginectomy
- Urethroplasty
- Metoidioplasty
- Phalloplasty
- Scrotoplasty with insertion of testicular prosthesis

Feminizing gender affirming surgeries:

- Augmentation mammoplasty with implantation of breast prostheses
- Penectomy
- Clitoroplasty
- Colovaginoplasty
- Vulvoplasty
- Labiaplasty
- Orchiectomy

Facial gender affirmation surgeries:

- Blepharoplasty
- Brow lift

- Cheek augmentation
- Forehead contouring and reduction
- Genioplasty
- Hairline advancement
- Lateral canthopexy
- Lip lift
- Lysis intranasal synechia
- Osteoplasty
- Rhinoplasty and septoplasty
- Suction-assisted lipectomy
- Tracheoplasty

Noncovered surgical procedures include:

- Hair transplantation
- Implants: calf, gluteal, or pectoral
- Isolated blepharoplasty
- Lip reduction or enhancement
- Neck lift
- Panniculectomy or abdominoplasty
- Reversal of previous GAS
- Revisions of previous GAS other than for complications (infections or impairment of function)
- Rhytidectomy
- Vocal cord surgery

Despite living in one of the states with the most complete coverage of gender-affirming care, in 2017, 23.6% of transgender patients in Massachusetts report being unable to access transition-related care in the past 12 months, due to factors such as younger age, low income, low educational attainment, private insurance coverage, and healthcare discrimination⁴. This study seeks to provide valuable insights into the utilization of gender-affirming surgeries among transgender individuals and shed light on the trends and characteristics associated with these procedures. By examining the payer status of patients seeking these surgeries, we can better understand the financial barriers and access to care issues that transgender individuals may face.

Gender-affirmation surgeries, such as mastectomy for Female-to-Male (FTM) patients and breast augmentation for Male-to-Female (MTF) patients, play a crucial role in enhancing the physical and psychological well-being of transgender individuals. These procedures are essential components of gender dysphoria treatment and are increasingly being recognized as medically necessary. However, the costs associated with these surgeries can be substantial and may present significant financial barriers to transgender individuals seeking gender-affirming care. Additionally, our research proposal aims to conduct a cost analysis of mastectomy for FTM patients compared to patients with gynecomastia, as well as breast augmentation procedures for gender affirmation in MTF patients compared to patients with cosmetic reasons. By examining the financial aspects, we seek to understand the economic implications, disparities, and potential barriers to accessing these essential procedures.

Methods:

Identification of study population:

The following ICD-10-CM and ICD-9-CM codes will be used for identifying transgender patients.

ICD-10-CM Codes

- F64.0 Transexualism
- F64.1 Dual role transvestism
- F64.2 Gender identity disorder of childhood
- F64.8 Other gender identity disorders
- F64.9 Gender identity disorder, unspecified
- N62 Hypertrophy of breast (gynecomastia, macromastia)
 - N64.4 Chronic breast pain due to weight of the breasts
 - L30.4 Intertrigo unresponsive to medical management
 - M54.6, M54.2, M53.82, M25.511 –M25.519 Upper back, neck, and shoulder pain
 - M54.89, M54.96 Backache, unspecified
 - M40.04, M40.14, M40.204, M40.294 Thoracic kyphosis, acquired
 - M95.4 Shoulder grooving from bra straps
 - R20.0-R20.9 Upper extremity paresthesia due to brachial plexus compression syndrome secondary to the weight of the breasts being transferred to the shoulder strap area
 - R51 Headache
 - Q98.0-Q98.4 Klinefelter's syndrome
 - Q38.0-Q38.8 Congenital breast deformity
- Z41.1 encounter for breast augmentation or reduction, admission for breast augmentation or reduction (encounter for cosmetic surgery)
- Z87.890 Personal history of sex reassignment
- Z98.82 Breast implants

ICD-9-CM Codes

- 302.5 Transsexualism
- 302.85 Gender identity disorder in adolescents or adults
- 302.6 Gender identity disorder in children

Identification of treatment modality:

The attached Excel sheet specifies the CPT or HCPC codes that will be used to identify patients in the study population receiving GAS. Non-surgical treatments such as electrolysis, laser hair removal, hormone therapy or injections will be excluded from the study.

Statistical analysis:

Data analysis will be conducted in Python and R software.

Plan to answer each study question:

What proportion of transgender patients are enrolled in MassHealth, private health insurance (HMO, EPO, POS, PPO), and multiple health insurances?

- Calculate the percentage of each insurance types for transgender patients, as predicted by the given ICD-10-CM Diagnostic Codes.

Has the proportion of transgender patients utilizing MassHealth for GAS increased over time?

- Chart the percentage of transgender patients with only MassHealth coverage treated with GAS procedures by 3 categories (genital, chest, and facial surgeries) over time.
- Look for trends and if visible analyze with regression analysis.

How does the frequency of genital, chest, and facial surgeries coverage differ between MassHealth and private health insurances?

- Analyze how frequently claims are denied with the “fully denied claim” data element for genital, chest, and facial surgeries among the entire study population. Then using the previous division created based on the Medicaid indicator, compare rates of denial between individuals with public vs. private insurance. Analyze for statistical significance with T test.

What is the average real cost, copay and out of pocket cost of GAS through public insurance and private insurance?

- Separate study population based on Medicaid indicator and compare the average charge amount between the 2 groups. Report confidence intervals and perform T test to check for significance difference.

Does the frequency of GAS recipients differ between medically underserved areas (MUAs) and better served areas?

- MUAs to be identified on Health Services Administration government website, which designates areas based on one of the following (depending on the entry): county subdivision, single county, or census tract. I will be able to convert these data to zip codes using the HUD USPS Zip Code Crosswalk Files to develop a list of medically underserved areas based on 5-digit zip code, which is a data element available through CHIA. Zip codes and the provided geographic data do not always match exactly, so the zip code assigned to communities where this occurs will be selected based on which one contains the largest proportion of the population (this proportion is available through the HUD file) and is a suggested method of analysis by the HUD.
- Calculate mean proportion of transgender patients receiving GAS from underserved areas and better served areas for each year. Compare means with T test to look for significance. Additionally, I will calculate means for underserved areas in rural and non-rural communities and look for significant difference with T test as well.

MASTECTOMY FOR GYNECOMASTIA VS MASTECTOMY FOR GENDER AFFIRMATION IN FTM PATIENTS

- What proportion of gynecomastia diagnoses are treated with breast reduction?
- Has the proportion of gynecomastia patients treated with breast reduction changed over time? Has the proportion of FTM patients treated with breast reduction for gender affirmation changed over time?
- How does the incidence of surgical treatment for gynecomastia differ between medically underserved areas and better served areas? How does the incidence of gender affirming care with breast reduction for FTM patients differ between medically underserved areas and better served areas?
- What is the average cost of breast reduction surgery for gynecomastia? What is the average cost of breast reduction for individuals transitioning from female to male? Does coverage differ between public insurance and private insurance? Are rates of insurance coverage similar?
- What is the frequency of insurance claim line denials for breast reduction surgery in otherwise paid claims? Does this vary between private and public insurers?

BREAST AUGMENTATION FOR COSMETIC REASONS VS BREAST AUGMENTATION FOR GENDER AFFIRMATION IN MTF PATIENTS

- What proportion of MTF patients elect to undergo breast augmentation with implants? Has the proportion of augmentations changed over time?
- Is there a difference between the cost of breast augmentation for cosmetic reasons compared to the cost of breast augmentation for gender affirmation?
- How does the incidence of breast augmentation for gender affirming care differ between medically underserved areas and better served areas?

Bibliography

1. Canner, J.K. *et al.* Temporal trends in gender-affirming surgery among transgender patients in the United States. *JAMA surgery* **153**, 609-616 (2018).
2. Mallory, C. & Tentindo, W. Medicaid coverage for gender-affirming care. (2022).
3. Gorbea, E. *et al.* Insurance coverage of facial gender affirmation surgery: a review of Medicaid and commercial insurance. *Otolaryngology–Head and Neck Surgery* **165**, 791-797 (2021).
4. White Hughto, J.M., Rose, A.J., Pachankis, J.E. & Reisner, S.L. Barriers to gender transition-related healthcare: Identifying underserved transgender adults in Massachusetts. *Transgender health* **2**, 107-118 (2017).