

AI (OpenAI) Assisted Prior Authorization



IBM, Microsoft, and OpenAI Partnership

Microsoft Azure Data & AI Practice of IBM Consulting

Global Practice focused on **Azure Data and AI**

Fastest Growing consulting (GSI) partner for Microsoft Data and AI (among top 5)

4000+ Azure Data and AI trained and certified professionals

30+ Global delivery centers

Unmatched **global scalability**

OpenAI partnership



OpenAI Accessibility

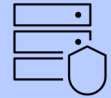
- Private Preview Partner
- Regular connect with Microsoft product and Engineering
- Joint Hackathon with 350+ participants and 10+ clients



Compatibility and Integration

Solutions / Assets / offerings Developed:

- Prior Authorization
- Contract Intelligence
- Documentation search
- Prompt engineering library
- Jumpstart workshop + Innovate and Scale offering



Data Privacy & Security



Gold
Microsoft
Partner

Microsoft
Partner

ADVANCED
SPECIALIZATION
AI AND MACHINE LEARNING
ON MICROSOFT AZURE

Analytics on Microsoft Azure
Advanced Specialization

Strategic acquisitions focused on Azure

neudesic
an IBM Company

Nordcloud
an IBM Company

/bluetab

taos
an IBM Company

Prior Authorization is a major point of friction between Payers, Providers, and Consumers in the U.S.

184M

Number of prior authorizations processed yearly between Providers and Payers in the U.S.

\$1.2B

Spent in 2022 by Providers on prior authorizations, compared to \$424M spent by Payers.

Providers are impacted disproportionately by a factor of 2.8X.

33%

Number of physicians who reported that PA has led to a serious adverse event for their patients in 2022.

94% report care delays, and 80% report treatment abandonment.

28%

Number of fully electronic prior authorizations (EDI, FHIR) as of 2022.

45% is considered partially electronic (web portal, IVR), while 34% is still fully manual (phone, fax, email, mail).

IBM believes
Payers, Providers,
Regulators and Big Tech
should work together
to transform and modernize
prior authorization

What if

prior authorization became less costly for Payers and more user-friendly for Providers and Consumers?

Current State

High Operational Costs

Highly manual, redundant work, drives up operating cost, lowers employee morale, and creates a poor experience for providers and consumers.

Document-Centric

Workflow designed around forms and document submissions, which make it difficult to extract and interpret data, and result in inaccuracies.

Black-Boxed

Providers and Consumers unaware of how the process works and what to expect; Payer rules not exposed to providers.

Workflow Silos

Multiple handoffs and ineffective communication create additional burden for already overworked clinical resources.

Long Lead Times & Painful Experience

Resulting from ineffective workflows, lack of interoperability, poor data quality, and reliance on manual intervention.

Future State Possibilities

Reduced Operational Costs

Through re-designed workflows around automation and outsourcing of low-value work to lower cost locations.

Data-Centric & Interoperable

Leveraging FHIR® to facilitate the exchange of information between Payers and Providers, improving accuracy and response times.

Transparent

Self-service enabled, with Payer rules exposed to Providers in the EMR to facilitate decision-making and transition into value-based care.

Streamlined Collaboration

Leveraging new ways of working, modern workforce tools, and multiple digital channels of interaction, to improve convenience and agility.

Real-Time & User-Friendly

Be able to auto-adjudicate in real-time during the encounter to improve provider and consumer experience.



Interoperability

The ultimate vision of CMS and ONC is to leverage HL7 FHIR to enable the exchange of information between Payers and Providers to have fully electronic prior authorizations.

There are limitations with the current standards and technology as well as with the ability to include attachments which are required to support clinical reviews.

A solid interoperability foundation, with broad connectivity across Payers and Providers, is required to enable fully electronic prior authorizations.



AI and Automation

The cost savings and ROI of automating prior authorizations has been well known and documented over the past couple of years.

AI further enables productivity through the extraction of clinical data from documentation, creation of decision trees from clinical guidelines, providing decision support and care navigation, as well as virtual agent support.

For Providers, automating the creation of the clinical bundle and subsequent follow-ups is the most impactful, while for Payers, it is evaluating the request against the clinical guidelines and plan rules.



Advanced Analytics

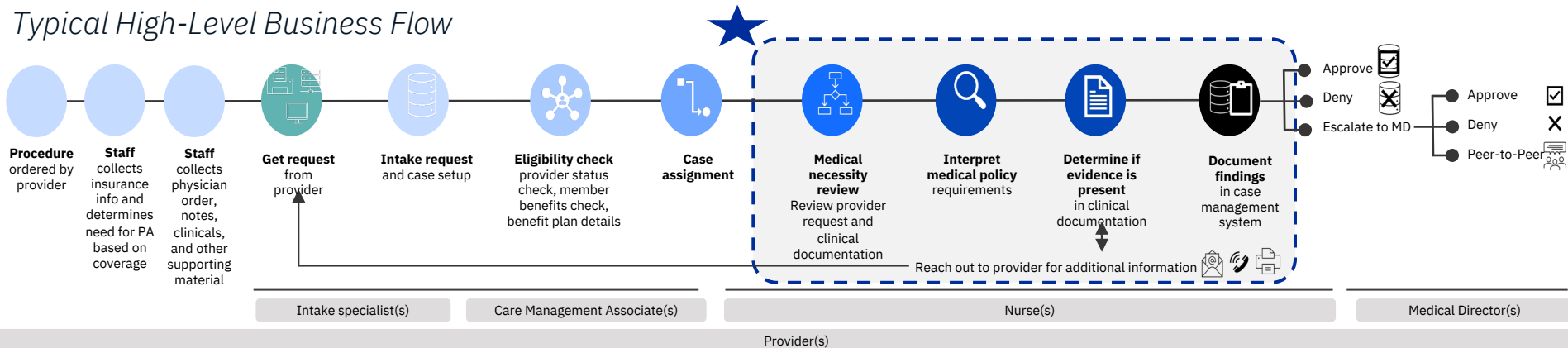
Payers are increasingly considering gold carding of providers to ease the burden of prior authorization, and in some states, there is legislation either in consideration or currently in place to expand this practice.

In addition, Payers are looking at reducing the number of CPT codes and medications that require prior authorization.

Fraud, waste and abuse technology coupled with advanced analytics is required to identify and monitor gold carded providers, as well as prioritizing CPT codes and medications to require prior authorization.

Prior Authorization involves multiple stakeholders and requires both simple and complex processing to achieve end-to-end automation potential

Typical High-Level Business Flow



Multiple processing complexity levels need to be considered

- **“Simple Processing”** via available structured data pertaining to Provider, Patient, Procedure, etc. to enable operational decision management (i.e., Gold Card) and historically trained predictive analytics (i.e., Decision Based Modeling)
- **“Complex Processing”** utilizing structured data pertaining to Provider, Patient, Procedure, etc AND unstructured EMR / clinical attachment data to digitize, understand, and rationalize clinical information to render decisions (i.e., Criteria-Level and Case-Level Decisioning). Data extracted can also enhance simple processing capability and drive improvement in 360 degree understanding of the patient.



For the OpenAI PA Demo, we focused on complex Payer processing components

The future of business and
Clinical processes with
AI-Human collaboration is here !

Foundation AI-Automation

with
Foundation Models
(OpenAI on Azure)

Next Gen Prior Authorization

Enable E2E automation of Provider-Payer processes

Foundational models to help MDs/Nurses/Staff address case-specific medical necessity and policy questions

~50%

Annual reduction
in time spent by
nurses reviewing
precertification cases



Improve Clinician Experience

Provider:

- Less time on keyboard
- Focus more on Patient
- Minimal to No back-and-forth with Payers

Payer:

- Less time to decision
- Easy access to Clinical evidence
- Build Trust in AI over time
- Cost Savings

\$5M

Estimated annual
operational savings

Prior Authorization with OpenAI

Generative AI for Prior-Auth – review clinical evidence against criteria

Clinical Policy Bulletin
describing criteria to authorize procedure

Obesity Surgery

ADULT

Initial Bariatric Procedures
Humana members age 18 years or older may be eligible under the Plan for the following open or laparoscopic bariatric surgeries:

- Bilopancreatic diversion (BPD) with or without duodenal switch (DS); **OR**
- Laparoscopic adjustable gastric banding (LAGB) (eg, Lap-Band); **OR**
- Roux-en-Y gastric bypass (RYGB) (short or long limb); **OR**
- Sleeve gastrectomy

Humana members age 18 years or older must meet **ALL** of the following criteria to be eligible for the above surgical treatments:

- BMI greater than 40; **OR**
- BMI greater than 35 with at least one of the following associated comorbidities:
 - Hypertension; **OR**
 - Joint disease (eg, osteoarthritis); **OR**

Clinician
manually reviews
each clinical document
for evidence against
auth criteria



Intake of multiple clinical documents
to support prior authorization request

Alexis Greene

DOB: 7/19/1977

Med: #723272
Date of Service: October 6, 2018
Reason for Visit: Evaluation for Elective Surgical Weight Loss
Diagnosed by: Dr. Brenden Lee

Alexis Greene is a 41-year-old female with a BMI today of 43. She is 5'4" tall and weighs 252 pounds. She is motivated to attempt surgical weight loss because she has been overweight for over 20 years and wants to lose weight slowly and be more active with her grandchildren and be healthier. She is mainly affected physically by her weight. When she loses weight, she always regains it and she always gains back more weight than she has lost. At one time, she lost 25 pounds and gained the weight back in about six months. She has done numerous commercial weight loss programs including Weight Watchers for six months in 1997, 1999, 2002, and 2004 with a 10 to 25 pound weight loss, TOPS Program in 2006 with a ten pound weight loss, Hypnosis for four months in 2012 with a 20-pou and weight loss, an exercise program for two months in 2015 with six pound weight loss, and Six Week Body Makeover for one month in 2016 with a two-pound weight loss. She did have symptoms for six months in 2017 with a 20-pound weight loss and she was under medical supervision in early 2018 where she actually gained 12 pounds. She was on Metoprolol from one month during that time.

PAST MEDICAL HISTORY: She had a negative stress test four to five years ago. She gets short of breath in walking about 30 steps. She has had non-insulin dependent diabetes for about eight years now. She has a left knee arthritis and history of hemorrhoids.

PAST SURGICAL HISTORY: Pertinent for laparoscopic cholecystectomy, tonsillectomy, left knee surgery, and right breast lumpectomy.

PSYCHOLOGICAL HISTORY: Negative except that she was rehabilitated for alcohol addiction in 1990.

SOCIAL HISTORY: The patient is married. She is an office manager for a gravel company. Her spouse is also overweight. She drinks on a weekly basis and she smokes about two packs of cigarettes over a week's period of time. She is doing this for about 35 years.

FAMILY HISTORY: Diabetes and hypertension.

MEDICATIONS: Include Citalopram 1 g daily, Actos 30 mg daily, Amryl 2 mg daily, Soma, and metoclopramide for her back pain.

ALLERGIES: She has no allergies; however, she does get tachycardic with caffeine, Subutex, or phenylpropanolamine.

REVIEW OF SYSTEMS: Otherwise, negative.

PHYSICAL EXAM: This is a pleasant female in no acute distress. Alert and oriented x 3. HEENT: Normocephalic, anatomic. Extraocular muscles intact. Oropharynx: sclerae. Chest is clear. Abdomen is obese, soft, nontender and nondistended. Extremities show no edema, clubbing or cyanosis.

ASSESSMENT/PLAN: This is a 51-year-old female with a BMI of 43 who is interested in the Lap-Band as opposed to gastric bypass. Alexis Greene will be asking for a letter of medical necessity from her insurance company. She will also need an EKG and clearance for surgery. She will also see my nutritionist and social worker and once this is completed, we will submit her to her insurance company for approval.

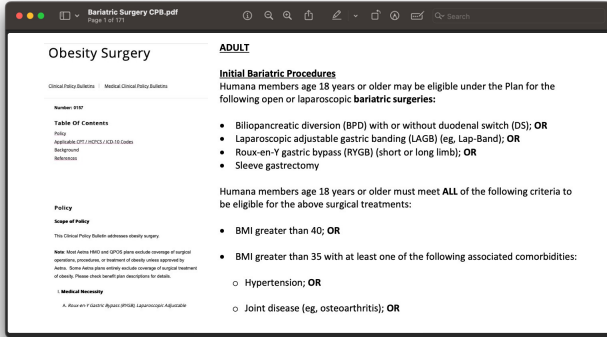
Extract deterministic rules

#	Question	Mapping to Comment
1	Is the surgery planned for any of the following procedures? Open or laparoscopic short or long limb Roux-en-Y gastric bypass (RYGB) Open or laparoscopic sleeve gastrectomy	A
2	Open or laparoscopic biliopancreatic diversion (BPD) with or without duodenal switch (DS) Laparoscopic adjustable silicone gastric banding (LAGB) Open or laparoscopic single anastomosis duodeno-ileal switch (SADI-S) Open or laparoscopic sleeve gastrectomy with single anastomosis duodeno-ileal bypass (SIBS)	A
3	Is patient an Adult?	A1a
4	For Adults, is BMI at start > 40 (initial weight prior to preop prep program)?	A1a1
5	For Adults, is BMI at start 35 < BMI <= 40 or (initial weight prior to preop prep program)?	A1a1
5.1	Does patient have Dx: Sleep Apnea or Obstructive Sleep Apnea (OSA)?	A1a1a
5.2	Does patient have Dx: Coronary Heart Disease (As indicated by any of the following documentation: Stress test (exercise stress test, radioiodinated stress test, pharmacologic stress test, stress echocardiography) CT angiography Coronary angiography	A1a1b
5.3	Does patient have history of Heart Failure or Prior Myocardial Infarction?	A1a1b
5.4	Is latest BP reading >140mmHg Systolic and/or 90 mmHg diastolic?	A1a1c
5.5	Is patient taking at least 3 anti-hypertensive medications of different classes?	A1a1c
5.6	Does patient have Dx: Type 2 Diabetes?	A1a1d
5.7	Does patient have Dx: NASH (Non-Alcoholic Steatohepatitis)/ fatty liver?	A1a1e
6	Has the patient attempted weight loss in the past without successful long-term weight reduction?	A2 IF 6.1-6.3 IS YES, THEN 6 IS YES IF 6 IS NO, THEN 6.1-6.3 IS N/A

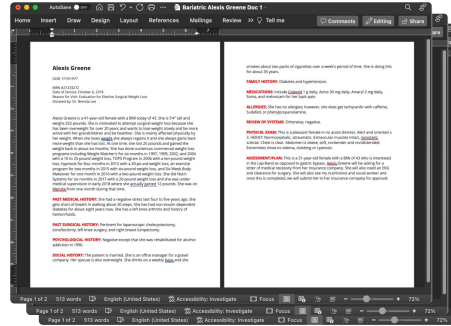
(physician notes, lab results etc.)

Generative AI for Prior-Auth – review clinical evidence against criteria

Clinical Policy Bulletin
describing criteria to authorize procedure



Intake of multiple clinical documents
to support prior authorization request



Extract deterministic rules

#	Question	Mapping to Comment
1	First Bariatric Surgery?	
2	Is the surgery planned for any of the following procedures? Open or laparoscopic short or long limb Roux-en-Y gastric bypass (RYGB) Open or laparoscopic sleeve gastrectomy Open or laparoscopic bilopancreatic diversion (BPD) with or without duodenal switch (DS) Laparoscopic adjustable silicone gastric banding (LAGB) Open or laparoscopic single anastomosis duodenal-ileal switch (SADI-S) Open or laparoscopic sleeve gastrectomy with single anastomosis duodeno-ileal bypass (SIPBS)	A
3	Is patient an Adult?	A1a
4	For Adults, is BMI at start > 40 (initial weight prior to prep program)?	A1a
5	For Adults, is BMI at start 35 < BMI <= 40 or (initial weight prior to prep program)?	A1a1
5.1	Does patient have Dx: Sleep Apnea or Obstructive Sleep Apnea (OSA)?	A1a1a
5.2	Does patient have Dx: Coronary Heart Disease (CHD) as indicated by any of the following documentation: Stress test (exercise stress test, radiocesium stress test, pharmacologic stress test, stress echocardiography) CT angiography Coronary angiography	A1a1b
5.3	Does patient have history of Heart Failure or Prior Myocardial Infarction?	A1a1b
5.4	Is latest BP reading >140mmHg Systolic and/or 90 mmHg diastolic?	A1a1c
5.5	Is patient taking at least 3 anti-hypertensive medications of different classes?	A1a1c
5.6	Does patient have Dx: Type 2 Diabetes?	A1a1d
5.7	Does patient have Dx: NASH (Non-Alcoholic Steatohepatitis)/ fatty liver?	A1a1e
6	Has the patient attempted weight loss in the past without successful long-term weight reduction?	A2

“Does the patient have BMI > 40?”
“Does the patient have markers of Diabetes?”



Match against criteria, with lineage
back to evidence across all clinical docs

IBM Accelerator to read and extract Health Plan – Policies and Medical Necessity Criteria

Bariatric Surgery CPB - Aetna.pdf
Page 1 of 171

Clinical Policy Bulletins | Medical Clinical Policy Bulletins

Number: 0157

Table Of Contents

- Policy
- Applicable CPT / HCPCS / ICD-10 Codes
- Background
- References

Policy History

Last Review 12/05/2022
Effective: 03/16/1997
Next Review: 01/26/2023

Review History

Definitions

Additional Information

Clinical Policy Bulletin Notes

State Information

Maryland

Policy

Scope of Policy

This Clinical Policy Bulletin addresses obesity surgery.

Note: Most Aetna HMO and QPOS plans exclude coverage of surgical operations, procedures, or treatment of obesity unless approved by Aetna. Some Aetna plans entirely exclude coverage of surgical treatment of obesity. Please check benefit plan descriptions for details.

I. Medical Necessity

A. Roux-en-Y Gastric Bypass (RYGB), Laparoscopic Adjustable

1 of 171
2/7/23, 12:27 PM
Obesity Surgery - Medical Clinical Policy Bulletins | Aetna
https://www.aetna.com/cpb/medical/data/100_199/0157.htm

Reference - Bariatric Clinical Policy -v6

Update Available We've made some fixes and improvements. To complete the process, the app needs to restart.

D24 If 6.1-6.1.3 is YES, then 6.1 is YES

Rule #	NI Question	Mapping to	Comment
1	First Bariatric Surgery?		
2	Is the surgery planned for any of the following procedures?	A	
3	Open or laparoscopic short or long-limb Roux-en-Y gastric bypass (RYGB)		
4	Open or laparoscopic sleeve gastrectomy		
5	Open or laparoscopic biliopancreatic diversion (BPD) with or without duodenal switch (DS)		
6	Laparoscopic adjustable silicone gastric banding (LASGB)		
7	Open or laparoscopic single anastomosis duodenal-ileal switch (SADI-S)		
8	Open or laparoscopic sleeve gastrectomy with single anastomosis duodenal-ileal bypass (SIPS)		
9	Open or laparoscopic sleeve gastrectomy with single anastomosis duodenal-ileal bypass (SIPS)		
10	Is patient an Adult?	A1a	
11	For Adults, is BMI at start > 40 (initial weight prior to preop prep program)?	A1ai	If 4 is YES, then rule 5 does NOT apply
12	For Adults, is BMI at start 35 < BMI <= 40 or (initial weight prior to preop prep program)?	A1aii	
13	5.1 Does patient have Dx: Sleep Apnea or Obstructive Sleep Apnea (OSA)?	A1aia	
14	5.1 Does patient have Dx: Coronary Heart Disease? As evidenced by any of the following documentation:	A1aib	
15	5.2 Stress test (exercise stress test, radionuclide stress test, pharmacologic stress test, stress echocardiography)	A1aib	
16	5.2 CT angiography	A1aib	
17	5.2 Coronary angiography	A1aib	
18	5.3 Does patient have history of Heart Failure or Prior Myocardial Infarction?	A1aib	
19	5.4 Is latest BP reading (>140mmHg Systolic and or 90 mmHg diastolic)?	A1aic	
20	5.5 Is patient taking at least 3 anti-hypertensive medications of different classes?	A1aic	
21	5.6 Does patient have Dx: Type 2 Diabetes?	A1aid	
22	5.7 Does patient have DX: NASH (Non-Alcoholic Steatohepatitis) fatty liver?	A1aie	
23	6 Has the patient attempted weight loss in the past without successful long-term weight reduction?	A2	If 6.1-6.1.3 is YES, then 6 is YES If 6 is NO, then 6.1-6.1.3 is N/A
24	6.1 Is there documentation should include medical records of contemporaneous assessment of patient's		

test, radionuclide stress test, pharmacologic stress test, stress echocardiography, CT

Value Prop

Payer/Provider:

- **Speed to Value:** Improve time to process prior authorization requests; reduce administrative burden
- **Improve Clinician Experience:** Decrease Clinician Burden (Provider & Payer) by reducing "think time" by utilizing job aid to support decisioning
- **Enable MDs/Nurses to operate at Top of their License:** Focus on the complex criterion and cases requiring their expertise
- **Assist in Approval / Denial Communication:** Apply Generative AI to create an initial approval and/or denial letter for review
- **Explainability:** Provide reasoning and reference to the Clinical documentation. Deliver evidence-based traceability to build trust
- **Conversational Engagement:** Quickly find and display answers in natural language for each determination criteria

Foundation Model Benefits

- **Model Training Acceleration:** Improve time to train AI compared to “traditional” NLP (Clinical) models
- **Criterion Extraction Acceleration:** Automate extraction of criterion from policy documents
- **Computational Efficiency:** Ability to support process sequencing in parallel

Thank you!

Appendix

Solution Features

- Finding and displaying answers in natural language for each determination criteria
- Identifying the latest document which contains the answer / evidence
- Showing evidence / mention in other documents
- Ability to review and ask variations of criteria questions

Prior Authorization						Home	Features
Patients							
Patient ID	Patient Name	MRN Number	Surgery Procedure	Status	Score		
1	Alexis Greene	#27233272	Bariatric surgery	Under review	1.0 (20/20)		
2	Jason Lee	546841	Bariatric surgery	Under review	1.0 (27/27)		
3	Martina Hess	7545615	Bariatric surgery	Under review	1.0 (28/28)		

Prior Authorization						Home	Features
<h2>Viewing Data for Patient: Jason Lee</h2>							
Patient Details							
Member No.	546841	Plan ID	None				
Case No.	None	Gender	Male				
Age	30	Height	5 ft 9 in				
BMI	38	Requested Procedure	Laparoscopic adjustable silicone gastric banding (LASGB).				
Criteria							
Criteria ID	Criteria	Response	Evidence	Action			
1	Do you see any mention of previous bariatric surgery? Please respond with yes or no.	No.	1_Bariatric Jason Lee Doc 1.docx	Review			
2	Is the surgery planned for any of the following procedures? - Open or laparoscopic short or long-limb Roux-en-Y gastric bypass (RYGB) - Open or laparoscopic sleeve gastrectomy - Open or laparoscopic biliopancreatic diversion (BPD) with or without duodenal switch (DS)	Laparoscopic adjustable silicone gastric banding (LASGB).	1_Bariatric Jason Lee Doc 1.docx	Review			

Explainability

with Client-specific data, AI-Automation can provide references to the Clinical documentation for trust and transparency of the Generative AI responses to the MNC questions.

The solution provides Evidence based traceability to build trust with practitioners of evidence-based medicine !

Criteria ID	Criteria	Response	Evidence	Action
1	Has initiation of appropriate treatment for persons diagnosed with diabetes based on: - HgbA1c of 6.5% or above - Fasting blood glucose (FBG) of 126 mg/dL or above - Oral glucose tolerance test (OGTT) of 200 mg/dL or above at 2 hours	Yes, patient is taking diabetic medications (Metformin)		Review

Variations

Variations for Question ID: 19 [Add new variation](#) [Back to All Criteria](#)

[Explain Response](#) [Fetch using GPT](#)

[Is the patient on Diabetic medication?](#)

Responses

Final Answer: Yes, patient is taking diabetic medications (Metformin)

Questions	1_Bariatric Jason Lee Doc 1.docx	2_Bariatric Jason Lee Sleep Study.docx	3_Bariatric Jason Lee Doc 2.docx
	Has initiation of appropriate treatment for persons diagnosed with diabetes based on:- HgbA1c of 6.5% or above- Fasting blood glucose (FBG) of 126 mg/dL or above- Oral glucose tolerance test (OGTT) of 200 mg/dL or above at 2 hours	Not found.	Not found.
Is the patient on Diabetic medication?	Yes, patient is taking diabetic medications (Metformin)	Not found.	Yes, patient is taking diabetic medications (Metformin,Jardiance,Trulicity)
The initiation of appropriate treatment for patient diagnosed with diabetes based on?	Metformin 1,00 mg twice daily.	Not found.	Metformin 1,000 mg by mouth twice daily, Jardiance 25 mg by mouth daily, and Trulicity 1.25 mg injectable once a week.

Digital Worker

Generative AI addressing each Medical Necessity Criteria from the Health Plan Policy specific to the requested Procedure Type, for every Prior Auth request

Prior Authorization Home Features

Viewing Data for Patient ID: 1

Criteria ID	Criteria	Response	Evidence	Action
1	Do you see any mention of previous bariatric surgery? Please respond with yes or no.	No.	1_Bariatric Alexis Greene Doc 2.docx	Review
2	Is the surgery planned for any of the following procedures? - Open or laparoscopic short or long-limb Roux-en-Y gastric bypass (RYGB) - Open or laparoscopic sleeve gastrectomy - Open or laparoscopic biliopancreatic diversion (BPD) with or without duodenal switch (DS) - Laparoscopic adjustable silicone gastric banding (LASGB) - Open or laparoscopic single anastomosis duodenal-ileal switch (SADI-S) - Open or laparoscopic sleeve gastrectomy with single anastomosis duodeno-ileal bypass (SIPS)	Laparoscopic gastric bypass.	1_Bariatric Alexis Greene Doc 2.docx	Review
3	Is patient an Adult?	Yes.	1_Bariatric Alexis Greene Doc 2.docx	Review
4	For Adults, is BMI at start > 40 (initial weight prior to preop prep program)?	Yes, the patient's BMI is 51.6.	1_Bariatric Alexis Greene Doc 2.docx	Review
5	For Adults, is BMI at start 35 < BMI <= 40 or (initial weight prior to preop prep program)?		N/A	
5.1	Does patient have Dx: Sleep Apnea or Obstructive Sleep Apnea (OSA)?		N/A	
5.2	Does patient have Dx: Coronary Heart Disease? As evidenced by the any of the following documentation: Stress test (exercise stress test, radionucleid stress test, pharmacologic stress test, stress echocardiography, CT		N/A	

https://openaipriorauth.azurewebsites.net/view/1/question/1?by=Coronary_angiography