Gleolan®
(aminolevulinic acid HCl)

BILLING & CODING GUIDE

Medexus Pharma, Inc. has developed this billing and coding guide for informational purposes to assist healthcare providers and institutions. The information in this guide is not intended to provide legal advice, does not purport to be comprehensive, and is not intended as a warranty, promise, or guarantee of any particular outcome in respect of coverage, coding, or reimbursement of Gleolan. It is the responsibility of healthcare providers and institutions to remain in compliance with healthcare payer guidelines, requirements, and policies relevant to coverage, coding, and reimbursement of Gleolan. For clarity, the information in this guide is not intended to increase or maximize reimbursement by any payer.

Table of Contents

Medicare Severity Diagnosis Related Group (MS-DRG) Coverage

Similar to other inpatient administered drugs, Gleolan® will be bundled by payers into hospital payment rates (ie, MS-DRGs), all patient refined (APR DRGs), or other DRGs specific to the individual payer's internal methodology. DRG assignment depends on the diagnosis and the craniotomy or craniectomy procedure with which Gleolan will be bundled. Medicare utilizes MS-DRGs; the 5 MS-DRGs that represent craniotomy or craniectomy treatments involving Gleolan are shown in the table below. This table may not be reflective of all MS-DRGs or other non–MS-DRGs that may be used for Gleolan. Only 1 MS-DRG should be assigned to a patient for a particular hospital admission.

Potential MS-DRGs[1,2]	
025	Craniotomy and endovascular intracranial procedures with major complication or comorbidity (MCC)
026	Craniotomy and endovascular intracranial procedures with complication or comorbidity (CC)
027	Craniotomy and endovascular intracranial procedures without complication or comorbidity (CC)/major complication or comorbidity (MCC)
054	Nervous system neoplasms with major complication or comorbidity (MCC)
055	Nervous system neoplasms without major complication or comorbidity (MCC)

ICD-10 Clinical Modification (CM) Diagnosis Codes

Hospitals use current ICD-10-CM codes to report a patient's diagnosis on claims forms. Correct coding is the responsibility of the hospital submitting a claim for the item or service. Always check payer guidelines to verify diagnosis coding requirements as individual payer rules may vary and must be adhered to. Below is a range of potential ICD-10-CM diagnosis codes that may be related to a diagnosis within Gleolan's approved label.

Potential ICD-10-CM Codes[3]			
C71.0	Malignant neoplasm of cerebrum	C71.6	Malignant neoplasm of cerebellum
C71.1	Malignant neoplasm of frontal lobe	C71.7	Malignant neoplasm of brain stem
C71.2	Malignant neoplasm of temporal lobe	C71.8	Malignant neoplasm of overlapping sites of brain
C71.3	Malignant neoplasm of parietal lobe	C71.9	Malignant neoplasm of brain, unspecified
C71.4	Malignant neoplasm of occipital lobe	D43.2	Neoplasm of uncertain behavior of brain, unspecified
C71.5	Malignant neoplasm of cerebral ventricle	D49.6	Neoplasm of unspecified behavior of brain

ICD-10 Procedure Coding System (PCS) and Revenue Code

Effective 01/01/2019, the Centers for Medicare & Medicaid Services (CMS) created a new PCS code that captures the PCS method value Fluorescence Guided Procedure and the PCS qualifier value Aminolevulinic Acid and applies them to the fourth character body region values and applicable approaches. These changes enable the capture of additional detail for fluorescence-guided procedures that use aminolevulinic acid. The ICD-10-CM/PCS Coding Clinic Fourth Quarter 2019, pages 41 to 42, confirms the utilization of code 8E090EM for Fluorescence Guided Procedure of Head and Neck Region Using Aminolevulinic Acid, Open Approach. For additional information, please consult the current ICD-10-PCS manual. Some individual payers may require specific accommodations for billing imaging agents on inpatient claims. Always confirm adherence to specific payer rules and guidelines.

Procedure ICD-10-PCS Code[4]	
8E090EM	Fluorescence guided procedure of head and neck region using aminolevulinic acid, open approach

Revenue Codes[1]	
0360	Operating room services general
0250	Pharmacy general

Professional Current Procedural Terminology (CPT) Codes

In addition to facility inpatient reimbursement, some hospitals also bill out professional physician fees separate from the inpatient procedure. Craniotomy and craniectomy procedures will vary. The below list is meant to serve as a guide of commonly used professional fees; however, it is not exhaustive, and individual circumstances and payer rules will determine coding.

CPT Professional Codes[5]	
Craniotomy or Craniectomy Professional Service Codes	
61500	Craniectomy; with excision of tumor or other bone lesion of skull
61510	Craniectomy, trephination, bone flap craniotomy; for excision of brain tumor, supratentorial, except meningioma
61518	Craniectomy for excision of brain tumor, infratentorial or posterior fossa; except meningioma, cerebellopontine angle tumor, or midline tumor at base of skull
61520	Craniectomy for excision of brain tumor, infratentorial or posterior fossa; cerebellopontine angle tumor
61521	Craniectomy for excision of brain tumor, infratentorial or posterior fossa; midline tumor at base of skull
Operating Microscope Professional Service Codes	
69990	Microsurgical techniques, requiring use of operating microscope (list separately in addition to code for primary procedure)

Each payer can have unique requirements for their claims process. Please consult with the payer to ensure compliance with their requirements.

Product Information[6]

Gleolan® (aminolevulinic acid hydrochloride) for oral solution

How Supplied

Gleolan (NDC 59137-231-01) is supplied as 1,500 mg of lyophilized aminolevulinic acid hydrochloride powder (equivalent to 1,170 mg aminolevulinic acid), for oral solution in a 50-mL clear, colorless, glass vial with a rubber stopper and an aluminum crimp seal.

Storage and Handling

Store at 25 °C (77 °F); excursions permitted to 15-30 °C (59-86 °F).

Reconstitution of Gleolan

Gleolan powder must be reconstituted prior to administration by a healthcare provider according to the following instructions:

- Determine the total number of vials needed to achieve the intended dose for the patient according to the following equation (rounded up to the nearest whole vial):

$$\text{\# of vials} = \frac{\text{Patient Body Weight (kg)}}{\text{75 kg/vial}}$$

Online Calculator

- Completely remove the white cap and aluminum crimp seal from each vial.
- Remove and retain the rubber stopper from the vial.
- Using an appropriate volumetric measuring device (e.g., flask, graduated cylinder, dosing syringe), measure 50 mL of drinking water and add to each vial containing 1,500 mg of Gleolan.
- Gently swirl the vial to completely dissolve the powder.
- The resulting reconstituted solution (30 mg of Gleolan per mL) is clear and colorless to slightly yellowish.
- If required, replace the stopper and store reconstituted solution for up to 24 hours at room temperature prior to administration.

Gleolan Administration

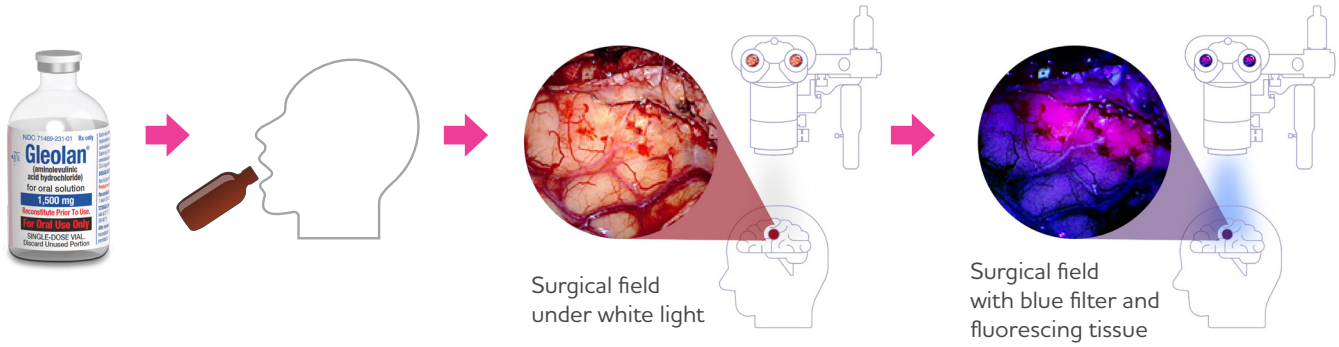
Gleolan is for ORAL USE ONLY. The reconstituted Gleolan solution is administered according to the following steps:

- Calculate the administration volume, in mL, to achieve the intended dose according to the following equation:

$$\text{Administration Volume (mL)} = \frac{\text{Patient Body Weight (kg)} * \text{20 mg/kg}}{\text{30 mg/mL}}$$

Online Calculator

- Transfer the entire contents of the prepared vial(s) into an appropriate dosing container (e.g., oral medicine bottle); ensure the entire contents of the vials are transferred.
- After transfer, discard the empty vial(s).
- Using a disposable volumetric syringe, remove the administration volume of reconstituted Gleolan solution from the dosing container and transfer to a separate oral dosing container.
- Discard unneeded volume of Gleolan solution.
- Administer orally 3 hours (range 2 to 4 hours) prior to induction of anesthesia.



Gleolan® (aminolevulinic acid hydrochloride) for oral solution is the first and only FDA-approved optical imaging agent for use during fluorescence-guided surgery (FGS) in patients with glioma (World Health Organization suspected Grades III and IV on preoperative imaging) as an adjunct for the visualization of malignant tissue during surgery.

Recognized in guidelines for the management of glioma, including:

American Association of Neurological Surgeons and Congress of Neurological Surgeons (AANS/CNS) Joint Section on Tumors guidelines[7]

AANS/CNS

National Comprehensive Cancer Network (NCCN) guidelines (version 2) on central nervous system cancers[8]

NCCN

European Society for Medical Oncology (ESMO)[9]

ESMO

Aminolevulinic acid hydrochloride for oral solution has been used in more than 100,000 patients in over 42 countries.[10]

National Drug Code (NDC)[6]

In some cases, payers require the NDC number to be on the inpatient claim. NDCs are universal product identifiers assigned to drugs upon FDA approval. Drugs and biologics, such as Gleolan, are assigned unique, 3-segment NDC numbers. Confirm NDC billing instructions with each payer, as requirements may vary. On drug packaging, NDC numbers are often displayed in a 10-digit format; however, claim filing requirements of an NDC number requires 11 digits in a 5-4-2 format.

10-Digit NDC Number: 1500 mg/50 mL Vial	11-Digit NDC Number: 1500 mg/50 mL Vial
59137-231-01	59137-0231-01

Sample Claim Form: CMS-1450/UB-04

Field Locator 42
Input revenue code 0360 Operating Room Services: General Classification

Field Locator 43
Procedure description:
- Main Craniotomy or Craniectomy Procedure
- Fluorescence Guided Procedure

Field Locator 45
Date of procedure

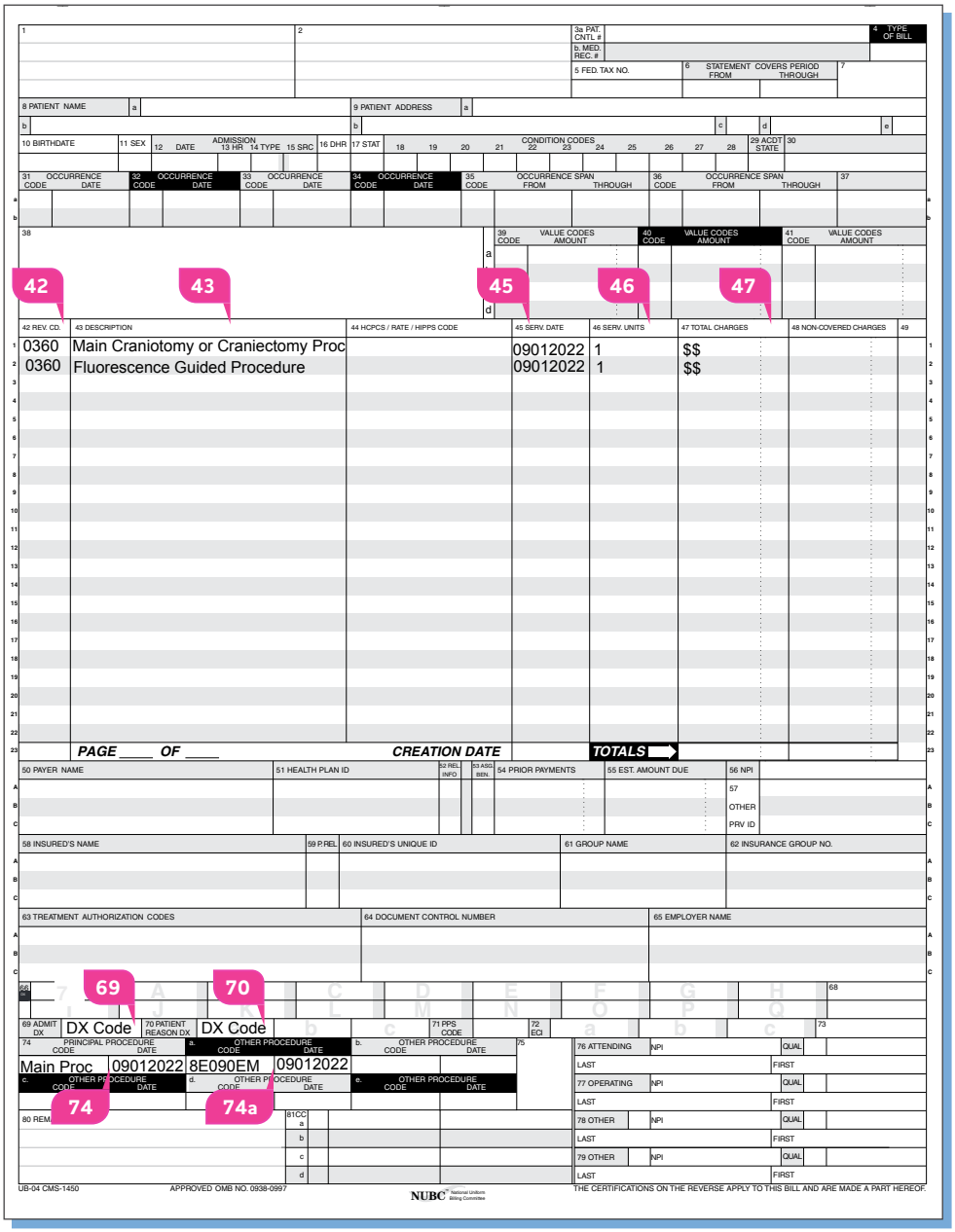
Field Locator 46
Service units

Field Locator 47
Total charges

Field Locator 69-70
Admitting and reason diagnosis codes

Field Locator 74
Main procedure: Craniotomy or Craniectomy PCS Code

Field Locator 74a
Other procedure code: 8E090EM Fluorescence Guided Procedure of Head and Neck Region Using Aminolevulinic Acid, Open Approach



Each payer can have unique requirements for their claims process. Please consult with the payer to ensure compliance with their requirements.

Gleolan® (aminolevulinic acid HCl)

Gleolan® is an optical imaging agent indicated in patients with glioma (suspected World Health Organization Grades III or IV on preoperative imaging) as an adjunct for the visualization of malignant tissue during surgery

Important Safety Information

Contraindications

Do not use Gleolan® in patients with:

- hypersensitivity to aminolevulinic acid (ALA) or porphyrins
- acute or chronic types of porphyria

Warnings and Precautions

Due to the risk of phototoxic reactions, do not administer phototoxic drugs and topical preparations containing ALA for 24 hours during the perioperative period. Reduce exposure to sunlight or room lights for 48 hours after administration of Gleolan.

Errors may occur with the use of Gleolan for intraoperative visualization of malignant glioma, including false negatives and false positives. Non-fluorescing tissue in the surgical field does not rule out the presence of tumor in patients with glioma. Fluorescence may be seen in areas of inflammation or metastases from other tumor types.

Hypersensitivity reactions, including serious hypersensitivity reactions have occurred; these reactions include anaphylactic shock, swelling, and urticaria. Always have cardiopulmonary resuscitation personnel and equipment readily available and monitor all patients for hypersensitivity reactions.

Adverse Reactions

Adverse reactions occurring in >1% of patients in the week following surgery were pyrexia, hypotension, nausea, and vomiting.

Nervous system disorders occurred in 29% of patients within the first week after surgery and events occurring in >1% of patients included: aphasia (8%), hemiparesis (7.8%), hemianopsia (3.2%), headache (2.7%), seizure (1.9%), hemiplegia (1.9%), monoparesis (1.3%) and hypoesthesia (1.1%). Brain edema occurred in <1% of patients in the first 6 weeks after surgery. In a randomized clinical trial, the number of serious neurologic adverse events in the post operative period were higher in patients randomized to ALA fluorescence arm compared to the control arm. An imbalance was notable for the adverse events aphasia, ataxia, convulsion and hemianopsia and is likely related to the higher amount of brain resection performed in the ALA arm. At longer follow up periods, the numbers between the two arms appeared similar.

Worsening of >2 Common Toxicity Criteria grades in alanine aminotransferase and gamma-glutamyl transferase occurred in 15.8% and 11.6% of patients, respectively, within the first week after surgery. Absolute levels ranged from 2 times to greater than 10 times the upper limit of normal for each parameter. At 6 weeks, these measurements remained elevated in 2.9% and 7.5% of patients, respectively. There were no cases of liver failure.

Drug-Drug Interactions

See information under Warnings and Precautions regarding phototoxic reactions.

Please see **Full Prescribing Information**.

CORE CONNECTIONS
Coverage, Resources and Education

Get support every step of the way in your treatment journey with CORE Connections. Obtain more information on reimbursement support, medical affairs, customer service, and medical information requests.

Take advantage of CORE Connections by calling **1-855-336-3322**, from 8:00 AM to 8:00 PM EST Monday through Friday (excluding holidays).

To order Gleolan®, please call 833-GLEOLAN (453-6526)

Gleolan®
(aminolevulinic acid HCl)

References:

1. Centers for Medicare & Medicaid Services. ICD-10-CM/PCS MS-DRG v37.0 Definitions Manual. https://www.cms.gov/icd10m/version37-fullcode-cms/fullcode_cms/P0001.html. **2.** Centers for Medicare & Medicaid Services. ICD-10-CM/PCS MS-DRG v37.0 Definitions Manual: MDC 01 diseases & disorders of the nervous system. https://www.cms.gov/icd10m/version37-fullcode-cms/fullcode_cms/P0004.html. **3.** American Medical Association. ICD-10-CM: The Complete Official Codebook With Guidelines. 2022. **4.** American Medical Association. ICD-10-PCS: The Complete Official Codebook. 2022. **5.** Current Procedural Terminology (CPT) Professional Edition. 2022. **6.** Gleolan Prescribing Information. **7.** Patrick HH, Sherman JH, Elder JB, Olson JJ. Congress of neurological surgeons systematic review and evidence-based guidelines update on the role of cytoreductive surgery in the management of progressive glioblastoma in adults. *J Neurooncol*. 2022;158(2):167-177. doi: 10.1007/s11060-021-03881-w **8.** National Comprehensive Cancer Network (NCCN) Clinical Practice Guidelines in Oncology. 2018. https://www.nccn.org/professionals/physician_gls/pdf/cns.pdf. **9.** Stupp R, Brada M, van den Bent MJ, Tonn JC, Pentheroudakis G; ESMO Guidelines Working Group. High-grade glioma: ESMO Clinical Practice Guidelines for diagnosis, treatment and follow-up. *Ann Oncol*. 2014;25(suppl 3):iii93-iii101. **10.** Data on file, Medexus Pharma, Inc.

MEDEXUS PHARMA