



# Immune Globulins (immunoglobulin):

Asceniv; Bivigam; Flebogamma; Gamunex-C; Gammagard Liquid; Gammagard S/D; Gammaked; Gammaplex; Octagam; Privigen;

**Panzyga** 

(Intravenous)

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## I. Length of Authorization

- Initial and renewal authorization periods vary by specific covered indication.
- Unless otherwise specified, the initial authorization will be provided for 6 months and may be renewed annually.

#### **II.** Dosing Limits

#### A. Quantity Limit (max daily dose) [NDC unit]:

		# of vials		
Drug	Vial size in IgG grams	One time only	per 28 days	
		LOAD	MAINTENANCE	
Asceniv	5	18	18	
<b></b> .	5	1	1	
Bivigam	10	23	23	
	5, 10, 20	1	1	
Flebogamma 10% DIF	20	11	11	
	0.5, 2.5, 5, 10	1	1	
Flebogamma 5% DIF	20	11	11	
	1, 2.5, 5, 10, 20	1	1	
Gamunex-C	40	6	6	
0 111	1, 2.5, 5, 10, 20	1	1	
Gammagard Liquid	30	8	8	
	5	1	1	
Gammagard S/D	10	23	23	
	1, 2.5, 5, 10	1	1	
Gammaked	20	11	11	

a .	5, 10	1	1
Gammaplex	20	11	11
0	2, 5, 10, 20	1	1
Octagam 10%	30	8	8
2	1, 2.5, 5, 10	1	1
Octagam 5%	25	9	9
D	5, 10, 20	1	1
Privigen	40	6	6
Panzyga	1, 2.5, 5, 10, 20	1	1
_ <b></b>	30	8	8

# B. Max Units (per dose and over time) [HCPCS Unit]:

Indication	Billable Units	Per # days (unless otherwise specified)
PID and Supportive Care after Rethymic transplant	184	21
IgG Subclass Deficiency	92	14
CIDP	Load: 460	4
CIDF	Maintenance: 230	21
Immune thrombocytopenia/ITP	460	28
FAIT	200	7
Kawasaki's Disease (Pediatric Patients only)	232	1 dose only
Multifocal Motor Neuropathy	460	28
CLL/MM	92	21
ALL	92	21
HIV (Pediatric Patients only)	47	28
Guillain-Barre	460	5 (for one cycle only)
Myasthenia Gravis	460	28
Auto-immune blistering diseases	460	28
Bone Marrow or Stem Cell Transplant	115	7
Dermatomyositis/Polymyositis	460	28
Complications of transplanted solid organ	460	28
(kidney, liver, lung, heart and pancreas transplants)	400	20
Stiff Person	460	28
Toxic shock syndrome	460	5 (for one cycle only)
NAIT	16	2 doses only
Management of Immune Checkpoint Inhibitor	460	5 (for one cycle only)
Related Toxicity		
Management of CAR T-Cell-Related Toxicity	115	28

# III. Initial Approval Criteria 1-14,69

Site of care specialty infusion program requirements are met (refer to BH Site of Care Policy).



Coverage is provided for the following conditions:

Baseline values for BUN and serum creatinine obtained within 30 days of request; AND

# Primary immunodeficiency (PID)/Wiskott - Aldrich syndrome † 1-14,36,52,54,55,68

Such as: x-linked agammaglobulinemia, common variable immunodeficiency, transient hypogammaglobulinemia of infancy, IgG subclass deficiency with or without IgA deficiency, antibody deficiency with near normal immunoglobulin levels, and combined deficiencies (severe combined immunodeficiencies, ataxia-telangiectasia, x-linked lymphoproliferative syndrome) [list not all inclusive

- Patient's IgG level is < 200 mg/dL **OR** both of the following
  - o Patient has a history of multiple hard to treat infections as indicated by at least **one** of the following:
    - Four or more ear infections within 1 year
    - Two or more serious sinus infections within 1 year
    - Two or more months of antibiotics with little effect
    - Two or more pneumonias within 1 year
    - Recurrent or deep skin abscesses
    - Need for intravenous antibiotics to clear infections
    - Two or more deep-seated infections including septicemia; AND
  - The patient has a deficiency in producing antibodies in response to vaccination; AND
    - Titers were drawn before challenging with vaccination; AND
    - Titers were drawn between 4 and 8 weeks of vaccination

#### IgG Subclass Deficiency \$\pm\$ 68,96-98

- Patient's IgG level is < 400 mg/dL; **AND**
- Patient has a history of recurrent infections; AND
- Patient is receiving prophylactic antibiotic therapy

Immune thrombocytopenia/Idiopathic thrombocytopenia purpura (ITP) † (Φ for Gammaplex) 1-14,30,35,37,79

For acute disease state:

- To manage acute bleeding due to severe thrombocytopenia (platelet count  $< 30 \times 10^9$ /L); **OR**
- To increase platelet counts prior to invasive surgical procedures such as splenectomy (platelet count <  $100 \times 10^{9}/L$ ); **OR**
- Patient has severe thrombocytopenia (platelet count < 20 X 10<sup>9</sup>/L)

Note: Authorization is valid for 1 month only and cannot be renewed

Chronic Immune Thrombocytopenia (CIT):

- The patient is at increased risk for bleeding as indicated by a platelet count < 30 X 10<sup>9</sup>/L; **AND**
- History of failure, contraindication, or intolerance to corticosteroids; AND
- Duration of illness > 6 months



# Chronic Inflammatory Demyelinating Polyneuropathy (CIDP) † ( $\Phi$ for Gamunex-C) 6-9,12,13,16-20,22-24,40,42,70

- Patient's disease course is progressive or relapsing and remitting for >2 months; AND
- Patient has abnormal or absent deep tendon reflexes in upper or lower limbs; AND
- Electrodiagnostic testing indicating demyelination:
  - o Partial motor conduction block in at least 2 motor nerves or in 1 nerve plus one other demyelination criterion listed here in at least 1 other nerve; **OR**
  - Distal CMAP duration increase in at least 1 nerve plus one other demyelination criterion listed here in at least 1 other nerve; **OR**
  - o Abnormal temporal dispersion conduction must be present in at least 2 motor nerves; OR
  - o Reduced motor conduction velocity in at least 2 motor nerves; **OR**
  - o Prolonged distal motor latency in at least 2 motor nerves; **OR**
  - Absent F wave in at least 2 motor nerves plus one other demyelination criterion listed here in at least 1 other nerve; OR
  - o Prolonged F wave latency in at least 2 motor nerves; AND
- Patient is refractory or intolerant to corticosteroids (e.g., prednisolone, prednisone, etc.) given in therapeutic doses over at least three months; **AND**
- Baseline in strength/weakness has been documented using an objective clinical measuring tool (e.g., INCAT, Medical Research Council (MRC) muscle strength, 6-MWT, Rankin, Modified Rankin, etc.)

Note: Initial authorization is valid for 3 months

#### Guillain-Barre Syndrome (Acute inflammatory polyneuropathy) † ‡ 2,3,17,19,20,22,28,29,56,68,75

- Patient has severe disease (i.e., patient requires assistance to ambulate);
- Onset of symptoms are recent (i.e., less than 1 month); AND
- Patient has abnormal or absent deep tendon reflexes in upper or lower limbs; AND
- Patient diagnosis is confirmed using a cerebrospinal fluid (CSF) analysis; AND
- Approval will be granted for a maximum of 2 rounds of therapy within 6 weeks of onset

Note: Authorization is valid for 2 months only and cannot be renewed

#### Multifocal Motor Neuropathy † (Φ for Gammagard Liquid) 4-6,17,19,20,22,23

- Patient has progressive, focal, asymmetric limb weakness (without sensory symptoms) for >1
  month; AND
- Patient has complete or partial conduction block or abnormal temporal dispersion conduction in at least 2 motor nerves; **AND**
- Patient has normal sensory nerve conduction on all nerves tested; AND
- Baseline in strength/weakness has been documented using an objective clinical measuring tool (e.g., INCAT, Medical Research Council (MRC) muscle strength, 6-MWT, Rankin, Modified Rankin, etc.)



Note: Initial authorization is valid for 3 months

# HIV infected children: Bacterial control or prevention † \$\pm2,3,25,26.35,87\$

- Patient age does not exceed 13 years of age; AND
- Patient's IgG level is < 400 mg/dL

#### Myasthenia Gravis ‡ 51,76,83

- Patient has a positive serologic test for anti-acetylcholine receptor (AchR) antibodies; AND
- Patient has an acute exacerbation resulting in impending myasthenic crisis (i.e., respiratory compromise, acute respiratory failure, and/or bulbar compromise); **AND**
- Patient is failing on conventional immunosuppressant therapy alone (e.g., corticosteroids, azathioprine, cyclosporine, mycophenolate, methotrexate, tacrolimus, cyclophosphamide, etc.);
   AND
- Patient will be on combination therapy with corticosteroids or other immunosuppressant (e.g., azathioprine, mycophenolate, cyclosporine, methotrexate, tacrolimus, cyclophosphamide, etc.)

Note: Authorization is valid for 1 course (1 month) only and cannot be renewed

# Dermatomyositis † / Polymyositis ‡ 10,11,17,19,20,22,63,64,68,80,85

- Patient has severe active disease; AND
- Patient has proximal weakness in all upper and/or lower limbs; AND
- Diagnosis has been confirmed by muscle biopsy; AND
- Patient has failed a trial of corticosteroids (i.e., prednisone); AND
- Patient has failed a trial of an immunosuppressant (e.g., methotrexate, azathioprine, etc.);
   AND
- Must be used as part of combination therapy with other agents; AND
- Patient has a documented baseline physical exam and muscular strength/function

Note: Initial authorization is valid for 3 months

# Complications of transplanted solid organ (kidney, liver, lung, heart, pancreas) and bone marrow transplant $\ddagger$ $^{57\text{-}60,68}$

Coverage is provided for one or more of the following (list not all-inclusive):

- Suppression of panel reactive anti-human leukocyte antigen (HLA) antibodies prior to transplantation
- Treatment of antibody-mediated rejection of solid organ transplantation
- Prevention or treatment of viral infections (e.g., cytomegalovirus, Parvo B-19 virus, and Polyoma BK virus)

#### Stiff-Person Syndrome ‡ 19,22,62

Patient has anti-glutamic acid decarboxylase (GAD) antibodies; AND



- Patient has failed at least 2 of the following treatments: benzodiazepines, baclofen, gabapentin, valproate, tiagabine, or levetiracetam; AND
- Patient has a documented baseline on physical exam

# Allogeneic Bone Marrow or Stem Cell Transplant † ‡ 2,3,74

- Used for prevention of acute Graft-Versus-Host-Disease (aGVHD) or infection; AND
- Patient's bone marrow (BMT) or hematopoietic stem cell (HSCT) transplant was allogeneic;
   AND
- Patient's IgG level is less than 400 mg/dL

Note: Initial authorization is valid for 3 months

#### Kawasaki's Disease † 2,3,81

Note: Authorization is valid for 1 course (1 month) only and cannot be renewed

### Fetal Alloimmune Thrombocytopenia (FAIT) ‡ 30,35,45,82,88

- Patient has a history of one or more of the following:
  - Previous FAIT pregnancy
  - Family history of the disease
  - o Screening reveals platelet alloantibodies

Note: Authorization is valid through the delivery date only and cannot be renewed

## Neonatal Alloimmune Thrombocytopenia (NAIT) ‡ 33-35,82

Note: Authorization is valid for 1 course (1 month) only and cannot be renewed

#### Auto-immune Mucocutaneous Blistering Diseases ‡ 32,38,39,65-67,89

- Patient has been diagnosed with one of the following:
  - o Pemphigus vulgaris
  - o Pemphigus foliaceus
  - o Bullous Pemphigoid
  - o Mucous Membrane Pemphigoid (a.k.a. Cicatricial Pemphigoid)
  - Epidermolysis bullosa aquisita
  - Pemphigus gestationis (Herpes gestationis)
  - o Linear IgA dermatosis; AND
- Patient has severe disease that is extensive and debilitating; AND
- Diagnosis has been confirmed by biopsy; AND
- Patient's disease is progressive; AND
- Disease is refractory to a trial of conventional therapy with corticosteroids and concurrent immunosuppressive treatment (e.g., azathioprine, cyclophosphamide, mycophenolate mofetil, etc.); AND
- Patient has a documented baseline on physical exam



# Acquired Immune Deficiency secondary to Acute Lymphoblastic Leukemia (ALL) ‡ 35,77,90

- Used for prevention of infection; AND
- Patient's IgG level is less than 400 mg/dL

# Acquired Immune Deficiency secondary to Chronic Lymphocytic Leukemia † or Multiple Myeloma † ‡ 2,3,35,68,86

- Patient's IgG level is <200 mg/dL OR both of the following</li>
  - Patient has a history of multiple hard to treat infections as indicated by at least <u>one</u> of the following:
    - Four or more ear infections within 1 year
    - Two or more serious sinus infections within 1 year
    - Two or more months of antibiotics with little effect
    - Two or more pneumonias within 1 year
    - Recurrent or deep skin abscesses
    - Need for intravenous antibiotics to clear infections
    - Two or more deep-seated infections including septicemia; AND
  - o The patient has a deficiency in producing antibodies in response to vaccination; AND
    - Titers were drawn before challenging with vaccination; AND
    - Titers were drawn between 4 and 8 weeks of vaccination

<u>Note</u>: other secondary immunodeficiencies resulting in hypogammaglobulinemia and/or B-cell aplasia will be evaluated on a case-by-case basis

#### Toxic Shock Syndrome ‡ 44,91,92

Note: Authorization is valid for 1 course (1 month) only and cannot be renewed

#### Management of Immune-Checkpoint-Inhibitor Related Toxicity ‡ 71,78

- Patient has been receiving therapy with an immune checkpoint inhibitor (e.g. nivolumab, pembrolizumab, atezolizumab, avelumab, durvalumab, dostarlimab, etc.); **AND**
- Patient has one of the following toxicities related to their immunotherapy:
  - Severe (G3) or life-threatening (G4) bullous dermatitis as an adjunct to rituximab
  - Stevens-Johnson syndrome (SJS)
  - Toxic epidermal necrolysis (TEN)
  - Severe (G3-4) myasthenia gravis
  - Transverse myelitis
  - Myocarditis as further intervention if no improvement within 24-48 hours of starting pulse-dose methylprednisolone
  - Moderate (G2) or severe (G3-4) Guillain-Barre Syndrome or severe (G3-4) peripheral neuropathy used in combination with pulse-dose methylprednisolone
  - Moderate (G2) pneumonitis if no improvement after 48-72 hours of corticosteroids



- Severe (G3-4) pneumonitis if no improvement after 48 hours of methylprednisolone
- Encephalitis used in combination with pulse-dose methylprednisolone for severe or progressing symptoms or if oligoclonal bands are present
- Moderate, severe, or life-threatening steroid-refractory myalgias or myositis

# Management of CAR T-Cell-Related Toxicity ‡ 71,78,84,93,94

- Patient has been receiving treatment with anti-CD19 chimeric antigen receptor (CAR) T-cell therapy (e.g., axicabtagene ciloleucel, brexucabtagene autoleucel, idecabtagene vicleucel, lisocabtagene maraleucel, tisagenlecleucel, etc.); **AND** 
  - Used for the management of G4 cytokine release syndrome that is refractory to high-dose corticosteroids and anti-IL-6 therapy (e.g., tocilizumab); **OR**
  - Patient has hypogammaglobulinemia as confirmed by serum IgG levels <600 mg/dL AND serious or recurrent infections; OR
- Used as prophylactic therapy prior to receiving treatment with anti-CD19 chimeric antigen receptor (CAR) T-cell therapy (e.g., axicabtagene ciloleucel, brexucabtagene autoleucel, idecabtagene vicleucel, lisocabtagene maraleucel, tisagenlecleucel, etc.); **AND** 
  - o Patient has hypogammaglobulinemia as confirmed by serum IgG levels ≤400 mg/dL AND serious, persistent, or recurrent bacterial infections

# Supportive Care after Rethymic transplant ‡ 95

- Used as immunoglobulin replacement therapy in pediatric patients with congenital athymia after surgical implantation of Rethymic; **OR**
- Used as re-initiation of treatment 2 months after stopping immunoglobulin replacement therapy in pediatric patients who have an IgG trough level lower than normal range for age

† FDA Approved Indication(s), ‡ Compendia/Literature Supported Indication(s); • Orphan Drug

*For Reference	Use Only			
Brand Name/ Formulation	FDA Indication	Contraindications	Product Specs	Comments
Asceniv	PID (≥12yo)	History of anaphylaxis to IgG IgA-deficient with IgA antibodies	IgA: ≤200 mcg/mL     Osmolality: N/A     Stabilizer: Glycine	Other stabilizer used is Polysorbate 80
Bivigam  (liquid)	PID (peds ≥6)	History of anaphylaxis to IgG IgA-deficient with IgA antibodies	IgA: ≤200 mcg/mL     Osmolality: 510 mOsm/kg     Stabilizer: glycine	
Flebogamma 5% (liquid)	PID (peds ≥2)	History of anaphylaxis to IgG IgA-deficient with IgA antibodies	IgA: <50 mcg/mL Osmolarity: 240 to 370 mOsm/kg Stabilizer: sorbitol	
Flebogamma 10% (liquid)	$\begin{array}{c} \text{PID (peds } \geq 2) \\ \text{ITP (peds } \geq 2) \end{array}$	History of anaphylaxis to IgG IgA-deficient with IgA antibodies	IgA: <32 mcg/mL Osmolarity: 240 to 370 mOsm/L Stabilizer: sorbitol	



Gammagard (liquid)	PID (peds ≥2) MMN (adults)	History of anaphylaxis to IgG IgA-deficient with IgA antibodies	IgA: 37 mcg/mL Osmolality: 240 to 300 mOsm/kg Stabilizer: glycine	May be used SC (see policy for criteria
Gammagard S/D <b>*</b> (lyophilized)	PID ITP CLL Kawasaki (adults/peds for all indx)	History of anaphylaxis to IgG IgA-deficient with IgA antibodies	IgA: <1 mcg/mL (5% solution) Osmolality: 636 mOsm/L (5% soln) Stabilizer: glycine	Contains some sugar (20mg/mL when prepared)
Gammaked (liquid)	PID (peds ≥2) ITP	History of anaphylaxis to IgG IgA-deficient with IgA antibodies	IgA: 46 mcg/mL Osmolality: 258 mOsm/kg Stabilizer: glycine	May be used SC (see policy for criteria
Gammaplex 5% (liquid)	PID (peds ≥2) cITP (adults)	History of anaphylaxis to IgG IgA-deficient with IgA antibodies Fructose intolerance	IgA: <10 mcg/mL Osmolality: 420 to 500 mOsm/kg Stabilizer: glycine	Other stabilizer used is Polysorbate 80
Gammaplex 10% (liquid)	PID (adults) cITP (adults)	History of anaphylaxis to IgG IgA-deficient with IgA antibodies	IgA: <20 mcg/mL Osmolality: 280 mOsm/kg Stabilizer: glycine	Other stabilizer used is Polysorbate 80
Gamunex-C (liquid)	PID (peds ≥2) ITP	History of anaphylaxis to IgG IgA-deficient with IgA antibodies	IgA: 46 mcg/mL Osmolality: 258 mOsm/kg Stabilizer: glycine	May be used SC (see policy for criteria
Octagam 5% (liquid)	PID (peds≥6)	History of anaphylaxis to IgG IgA-deficient with IgA antibodies Corn allergy	IgA: ≤200 mcg/mL Osmolality: 310 to 380 mOsm/kg Stabilizer: maltose	
Octagam 10% (liquid)	ITP (adults)	History of anaphylaxis to IgG IgA-deficient with IgA antibodies	IgA: 106 mcg/mL Osmolality: 310 to 390 mOsm/kg Stabilizer: maltose	
Privigen (liquid)	PID cITP (ped ≥15) CIDP (adults)	History of anaphylaxis to IgG IgA-deficient with IgA antibodies Hyperprolinemia	IgA: <25 mcg/mL Osmolality: 320 mOsm/kg Stabilizer: L-proline	
Panzyga	PID (peds ≥2) cITP (adults)	History of anaphylaxis to IgG IgA-deficient with IgA antibodies	IgA: ≤100 mcg/mL Osmolality: 240-310 mOsm/kg Stabilizer: Glycine	

- All intravenous immunoglobulins are derived from human plasma.
- Products with higher IgA content pose a greater risk for anaphylactic reactions, especially in patients with IgA deficiencies.
- All products may predispose patients to nephrotoxicity especially those with sugar-based or proline-based stabilizers. To lower risks, lower concentration products and infusions rates should be used as well as using products with osmolality/osmolarity that is near physiologic range (around 300 mOsm/kg or mOsm/L).
- Premedications (e.g., acetaminophen, antihistamine, etc.) are recommended to reduce the risk of infusion related reactions.

Adapted from: Professional Resource, Comparison of IVIG Products. Pharmacist's Letter/Prescriber's Letter. December 2016. Discontinued by the manufacturer

# IV. Renewal Criteria 1-14,69

Coverage can be renewed based upon the following criteria:



Note: unless otherwise specified, renewal authorizations are provided for 1 year

- Patient continues to meet indication-specific relevant criteria identified in section III; AND
- Absence of unacceptable toxicity from the drug. Examples of unacceptable toxicity include: renal dysfunction and acute renal failure, thrombosis, hemolysis, severe hypersensitivity reactions, pulmonary adverse reactions/transfusion-related acute lung injury (TRALI), hyperproteinemia, increased serum viscosity, hyponatremia, aseptic meningitis syndrome, hypertension, volume overload, etc.; AND
- BUN and serum creatinine have been obtained within the last 6 months and the concentration and rate of infusion have been adjusted accordingly; AND
- Patient meets the disease-specific criteria identified below:

# Primary Immunodeficiency (PID) 1-14,36,52,54,55,68

- Disease response as evidenced by one or more of the following:
  - o Decrease in the frequency of infection
  - o Decrease in the severity of infection

### IgG Subclass Deficiency 68-96-68

- Disease response as evidenced by one or more of the following:
  - Decrease in the frequency of infection
  - o Decrease in the severity of infection; AND
- Patient is at a decreased risk of infection as a result of treatment necessitating continued therapy

# Chronic Immune Thrombocytopenia/ITP 1-14,30,35,37,79

• Disease response as indicated by the achievement and maintenance of a platelet count of  $\geq 30$  X  $10^9$ /L and at least doubling the baseline platelet count

# Chronic Inflammatory Demyelinating Polyneuropathy 1-14,16-20,22-24,40,42,70

• Renewals will be authorized for patients that have demonstrated a clinical response to therapy based on an objective clinical measuring tool (e.g., INCAT, Medical Research Council (MRC) muscle strength, 6-MWT, Rankin, Modified Rankin, etc.)

# Guillain-Barre Syndrome (Acute inflammatory polyneuropathy) 56

May not be renewed.

#### Multifocal Motor Neuropathy 1-14,17,19,20,22,23

• Renewals will be authorized for patients that have demonstrated a clinical response to therapy based on an objective clinical measuring tool (e.g., INCAT, Medical Research Council (MRC) muscle strength, 6-MWT, Rankin, Modified Rankin, etc.)

#### HIV infected children: Bacterial control or prevention 25,26.35,87



- Disease response as evidenced by one or more of the following:
  - Decrease in the frequency of infection
  - Decrease in the severity of infection; AND
- Patient continues to be at an increased risk of infection necessitating continued therapy as evidenced by an IgG level < 400 mg/dL</li>

#### Myasthenia Gravis 51,76,83

May not be renewed.

### Dermatomyositis/Polymyositis 17,19,20,22,63,64,68,80

 Patient had an improvement from baseline on physical exam and/or muscular strength and function

Note: Renewal authorizations are provided for 6 months

# Complications of transplanted solid organ (kidney, liver, lung, heart, pancreas) and bone marrow transplant $^{57\text{-}60,68}$

- Disease response as evidenced by one or more of the following:
  - Decrease in the frequency of infection
  - o Decrease in the severity of infection; AND
- Patient is at a decreased risk of infection as a result of treatment necessitating continued therapy

#### Stiff Person Syndrome 19,22,62

Documented improvement from baseline on physical exam

#### Allogeneic Bone Marrow or Stem Cell Transplant 74

• Patient's IgG trough is less than 400 mg/dL

Note: Renewal authorizations are provided for 3 months

### Kawasaki's Disease 5,81

May not be renewed.

# Fetal Alloimmune Thrombocytopenia (FAIT) 31,36,46,83,88

Authorization is valid through the delivery date only and cannot be renewed

#### Neonatal Alloimmune Thrombocytopenia 33-35,82

May not be renewed.

#### Auto-Immune Mucocutaneous Blistering Diseases 32,38,39,65-67,89

Documented improvement from baseline on physical exam



Note: Renewal authorizations are provided for 6 months

# Acquired Immune Deficiency secondary to Acute Lymphoblastic Leukemia (ALL), Chronic Lymphocytic Leukemia (CLL), or Multiple Myeloma 35,68,77,90

- Disease response as evidenced by one or more of the following:
  - Decrease in the frequency of infection
  - o Decrease in the severity of infection; AND
- Patient is at a decreased risk of infection as a result of treatment necessitating continued therapy

#### Toxic Shock Syndrome 44,91,92

May not be renewed.

# Management of Immune Checkpoint Inhibitor related Toxicity 71,78

May not be renewed.

#### Management of CAR T-Cell-Related Toxicity 71,78,84

- Patient is still receiving treatment with anti-CD19 CAR T-cell therapy (e.g., axicabtagene ciloleucel, brexucabtagene autoleucel, lisocabtagene maraleucel, tisagenlecleucel, etc.); AND
- Patient has serum IgG levels <600 mg/dl

# Supportive Care after Rethymic transplant ‡ 95

- Renewals for use as initial immunoglobulin replacement therapy will be authorized until all of the following criteria are met:
  - o Patient is no longer on immunosuppression (at least 10% of CD3+ T cells are naïve in phenotype); AND
  - o Patient is at least 9 months post-treatment; **AND**
  - Patient's phytohemagglutinin (PHA) response within normal limits; **OR**
- Renewals for use as re-initiation of treatment after stopping immunoglobulin replacement therapy for patients with an IgG trough level lower than normal range will be continued for 1 year before being retested using the above guidelines

#### **Dosing Recommendations:**

- Patient's dose should be reduced to the lowest necessary to maintain benefit for their condition. Patients who are stable, or who have reached the maximum therapeutic response, should have a trial of dose reduction (e.g., 25-50% reduction in dose every 3 months).
- Patients who have tolerated dose reduction and continue to show sustained improvement (i.e. remission) should have a trial of treatment discontinuation; with the following exceptions:
  - PID would be excluded from a trial of discontinuation



- o HIV-infected children should show satisfactory control of the underlying disease [e.g., undetectable viral load, CD4 counts elevated above 200 or >15% (ages 9 months − 5 years) on antiretroviral therapy, etc.]
- Solid organ transplant, CLL, and MM patients should not be at an increased risk of infection

# V. Dosage/Administration <sup>1-14,22,23,30,39,51,56,61,62,74,76-78,81,82,87-92,97</sup>

Dosing should be calculated using adjusted body weight if one or more of the following criteria are met:

- Patient's body mass index (BMI) is 30 kg/m<sup>2</sup> or more; OR
- Patient's actual body weight is 20% higher than his or her ideal body weight (IBW)

Use the following dosing formulas to calculate the adjusted body weight (round dose to nearest 5 gram increment in adult patients):

Dosing formulas
$BMI = 703 \text{ x (weight in pounds/height in inches}^2)$
IBW (kg) for males = $50 + [2.3 \text{ (height in inches} - 60)]$
IBW (kg) for females = $45.5 + [2.3 \text{ x (height in inches} - 60)]$
Adjusted body weight = IBW + 0.5 (actual body weight – IBW)

This information is not meant to replace clinical decision making when initiating or modifying medication therapy and should only be used as a guide. Patient-specific variables should be taken into account.

Indication	Dose
PID and Supportive Care after Rethymic transplant	200 to 800 mg/kg every 21 to 28 days
IgG Subclass Deficiency	300 to 400 mg/kg every 14 days
CIDP	2 g/kg divided over 2-5 days initially, then 1 g/kg administered in 1-2 infusions every 21 days
ITP	2 g/kg divided over 5 days or 1 g/kg once daily for 2 consecutive days in a 28-day cycle
FAIT	1 g/kg/week until delivery
Kawasaki's Disease (Pediatric Patients)	1 g/kg to 2 g/kg x 1 course
Multifocal Motor Neuropathy	Up to 2 g/kg divided over 5 days in a 28-day cycle
Acquired immune deficiency: CLL, MM and ALL	400 mg/kg every 3 to 4 weeks
Pediatric HIV	400 mg/kg every 2 to 4 weeks



Indication	Dose
Guillain-Barre	2 g/kg divided over 5 days x 1 course
Myasthenia Gravis	1-2 g/kg divided as either 0.5 g/kg daily x 2 days or 0.4 g/kg daily x 5 days x 1 course
Auto-immune blistering diseases	Up to 2 g/kg divided over 5 days in a 28-day cycle
Dermatomyositis/Polymyositis	2 g/kg divided over 2 to 5 days in a 28-day cycle
Bone Marrow or Stem Cell Transplant	500 mg/kg once weekly x 90 days, then 500 mg/kg every 3 to 4 weeks
Complications of transplanted solid organ (kidney, liver, lung, heart, pancreas) and bone marrow transplant	2 g/kg divided over 5 days in a 28-day cycle
Stiff Person	2 g/kg divided over 5 days in a 28-day cycle
Toxic shock syndrome	2 g/kg divided over 5 days x 1 course
Neonatal Alloimmune Thrombocytopenia	1 g/kg x 1 dose, may be repeated once if needed
Management of Immune Checkpoint Inhibitor Related Toxicity	2 g/kg divided over 5 days x 1 course
Management of CAR T-Cell- Related Toxicity	400-500 mg/kg every 28 days

<sup>\*</sup>Dosing for IVIG is highly variable depending on numerous patient specific factors, indication(s), and the specific product selected. For specific dosing regimens refer to current prescribing literature.

# VI. Billing Code/Availability Information

# HCPCS Code & NDC:

Drug	Manufacturer	HCPCS Code	1 Billable Unit Equivalent	IgG (grams) per SDV	NDC
Asceniv*	ADMA Biologics	J1554	500 mg	5	69800-0250-XX
D''	ADMA	T1 MMC	<b>7</b> 00	5	69800-6502-XX
Bivigam*	Biologics	J1556	500 mg	10	69800-6503-XX
Flebogamma 10% DIF*	Instituto	J1572	500 mg	5, 10, 20	61953-0005-XX
Flebogamma 5% DIF*	Grifols, S.A.	01072	500 mg	0.5, 2.5, 5, 10, 20	61953-0004-XX
Gamunex-C	Grifols Therapeutics	J1561	500 mg	1, 2.5, 5, 10, 20, 40	13533-0800-XX



Gammagard Liquid*	Baxalta	J1569	500 mg	1, 2.5, 5, 10, 20, 30	00944-2700-XX
Gammagard S/D*	D 1/	T1 # 0.0	<b>F</b> 00	5	00944-2656-XX
Gammagard S/D"	Baxalta	J1566	500 mg	10	00944-2658-XX
Gammaked*	Grifols Therapeutics	J1561	500 mg	1, 2.5, 5, 10, 20	76125-0900-XX
Gammaplex 5%*	Bio Products	T1 F F F	<b>7</b> 00	5, 10, 20	64208-8234-XX
Gammaplex 10%*	Laboratory	J1557	500 mg	5, 10, 20	64208-8235-XX
Octagam 10%*	Octapharma	I1#00	<b>~</b> 00	2, 5, 10, 20, 30	68982-0850-XX
Octagam 5%*	USA Inc	J1568	500 mg	1, 2.5, 5, 10, 25	68982-0840-XX
	CSL Behring AG	J1459	J1459 500 mg	5	44206-0436-XX
D · · · · · · · · · · · · · · · · · · ·				10	44206-0437-XX
Privigen*			91499	500 mg	20
				40	44206-0439-XX
Panzyga*	Octapharma USA Inc	J1599	500mg	1, 2.5, 5, 10, 20, 30	68982-0820-XX
Injection, immune globulin, intravenous, non-lyophilized (e.g., liquid), not otherwise specified	N/A	J1599	500 mg	N/A	N/A

<sup>\*90283 –</sup> immune globulin (IgIV), human, for intravenous use

#### VII. References

- 1. Bivigam™ [package insert]. Boca Raton, FL; ADMA Biologics, Inc.; July 2019. Accessed September 2022.
- 2. Flebogamma® 10% DIF [package insert]. Barcelona, Spain; Instituto Grifols, S.A.; September 2019. Accessed September 2022.
- 3. Flebogamma® 5% DIF [package insert]. Barcelona, Spain; Instituto Grifols, S.A.; September 2019. Accessed September 2022.
- 4. Gammagard Liquid [package insert]. Lexington, MA; Baxalta US Inc.; March 2021. Accessed September 2022.
- 5. Gammagard S/D Less IgA [package insert]. Lexington, MA; Baxalta US Inc.; March 2021. Accessed September 2022.
- 6. Gamunex®-C [package insert]. Research Triangle, NC; Grifols Therapeutics, Inc.; January 2020. Accessed September 2022.



<sup>\*\* (</sup>HOPPS-Hospital Outpatient Prospective Payment System Use Only)

- 7. Gammaked™ [package insert]. Research Triangle, NC; Grifols Therapeutics, Inc; January 2020. Accessed September 2022.
- 8. Gammaplex® 5% [package insert]. Durham, NC; Bio Products Laboratory Ltd.; September 2019. Accessed September 2022.
- 9. Gammaplex® 10% [package insert]. Durham, NC; Bio Products Laboratory Ltd.; October 2019. Accessed September 2022.
- 10. Octagam® 5% [package insert]. Paramus, NJ; Octapharma USA Inc; April 2022. Accessed September 2022.
- 11. Octagam® 10% [package insert]. Paramus, NJ; Octapharma USA Inc; April 2022. Accessed September 2022.
- 12. Privigen® [package insert]. Berne, Switzerland; CSL Behring AG March 2022. Accessed September 2022.
- 13. Panzyga® [package insert]. Paramus, NJ; Octapharma USA Inc; February 2021. Accessed September 2022.
- 14. Asceniv™ [package insert]. Boca Raton, FL; ADMA Biologics; April 2019. Accessed September 2022.
- 15. Skeie GO, Apostolski S, Evoli A, et al. Guidelines for the treatment of autoimmune neuromuscular transmission disorders. Eur J Neurol. 2010;17(7):893-902.
- 16. Van den Bergh PY, Hadden RD, Bouche P, et al. European Federation of Neurological Societies/Peripheral Nerve Society guideline on management of chronic inflammatory demyelinating polyradiculoneuropathy: report of a joint task force of the European Federation of Neurological Societies [trunc]. Eur J Neurol 2010 Mar;17(3):356-63.
- 17. Patwa HS, Chaudhry V, Katzberg H, et al. Evidence-based guideline: intravenous immunoglobulin in the treatment of neuromuscular disorders: report of the Therapeutics and Technology Assessment Subcommittee of the American Academy of Neurology. Neurology. 2012 Mar 27;78(13):1009-15.
- 18. French CIDP Study Group. Recommendations on diagnostic strategies for chronic inflammatory demyelinating polyradiculoneuropathy. J Neurol Neurosurg Psychiatry 2008; 79: 115–118.
- 19. Donofrio PD, Berger A, Brannagan TH, et al. Consensus statement: The use of intravenous immunoglobulin in the treatment of neuromuscular conditions report of the AANEM ad hoc committee. Muscle Nerve. 2009;40:890-900.
- 20. Feasby T, Banwell B, Benstead T, et al. Guidelines on the use of intravenous immune globulin for neurologic conditions. Transfus Med Rev. 2007;21(2 suppl 1):S57-107.
- 21. Gajdos P, Tranchant C, Clair B, et al; Myasthenia Gravis Clinical Study Group. Treatment of myasthenia gravis exacerbation with intravenous immunoglobulin: a randomized double-blind clinical trial. Arch Neurol. 2005;62(11):1689-1693.
- 22. Elovaara I, et al. EFNS guidelines for the use of intravenous immunoglobulin in treatment of neurological diseases: EFNS task force on the use of intravenous immunoglobulin in treatment of neurological diseases. European Journal of Neurology 2008;15(9):893-908.
- 23. Joint Task Force of the EFNS and the PNS. European Federation of Neurological Societies/Peripheral Nerve Society guideline on management of multifocal motor neuropathy. Report of a joint task force of the European Federation of Neurological Societies and the



- Peripheral Nerve Society--first revision. J Peripher Nerv Syst. 2010 Dec;15(4):295-301. doi: 10.1111/j.1529-8027.2010.00290.x.
- 24. Hahn AF, Bolton CF, Pillay N, et al. Plasma exchange therapy in chronic inflammatory demyelinating polyneuropathy. A double-blind, sham controlled, cross-over study. Brain 1996;119:1055–66.
- 25. The National Institute of Child Health and Human Developments Intravenous Immunoglobulin Study Group. Intravenous immune globulin for the prevention of bacterial infections in children with symptomatic human immunodeficiency virus infection. N Engl J Med. 1991 Jul 11;325(2):73-80.
- 26. Silberry GK, Abzug MJ, Nachman, S, et al. Guidelines for the Prevention and Treatment of Opportunistic Infections in HIV-Exposed and HIV-Infected Children: Recommendations from the National Institutes of Health, Centers for Disease Control and Prevention, the HIV Medicine Association of the Infectious Diseases Society of America, the Pediatric Infectious Diseases Society, and the American Academy of Pediatrics. J Pediatric Infect Dis Soc. 2013 Nov; 32 Suppl 2: i-KK4.
- 27. Wolfe GI, Barohn RJ, Foster BM, et al; Myasthenia Gravis-IVIG Study Group. Randomized, controlled trial of intravenous immunoglobulin in myasthenia gravis. Muscle Nerve. 2002;26(4):549-552.
- 28. Hughes RA, Wijdicks EF, Barohn R, et al. Quality Standards Subcommittee of the American Academy of Neurology. Practice parameter: immunotherapy for Guillain-Barré syndrome: report of the Quality Standards Subcommittee of the American Academy of Neurology. Neurology. 2003 (reaffirmed in 2016);61(6):736-740.
- 29. Hughes RA, Swan AV, Raphael JC, et al. Immunotherapy for Guillain-Barré syndrome: a systematic review. Brain. 2007;130(pt 9):2245-2257.
- 30. Bussel, JB et al. Antenatal management of alloimmune thrombocytopenia with Intravenous Immunoglobulin: A randomized trial of low dose steroid to intravenous immunoglobulin. Am J Obstet Gynecol 1996; 174 1414-23.
- 31. Ratko TA, Burnett DA, The Univ Hospital Consortium Expert Panel for the Off-label Use of Polyvalent Intravenously Administered Immunoglobulin Preparations, et al. Recommendations for the off-label use of intravenously administered immunoglobulin preparations. JAMA 1995; 273:1865-70.
- 32. Ahmed AR, Spigelman Z, Cavacine LA et al. Treatment of pemphigus vulgaris with rituximab and intravenous immune globulin. N Eng J Med 2006; 1772-9.
- 33. American Academy of Pediatrics Subcommittee on Hyperbilirubinemia. Management of hyperbilirubinemia in the newborn infant 35 or more weeks of gestation. Pediatrics 2004; 114:297-316.
- 34. Gottstein R, Cooke R. Systematic Review of intravenous immunoglobulin in haemolytic disease of the newborn. Arch Dis Child Fetal Neonatal Ed 2003; 88:F6-10
- 35. Anderson D, Ali K, Blanchette V, et al. Guidelines on the use of intravenous immune globulin for hematologic conditions. Transfus Med Rev. 2007;21(2 Suppl 1):S9-56.
- 36. Orange J, Hossny E, Weiler C, et al. Use of intravenous immunoglobulin in human disease: A review of evidence by members of the Primary Immunodeficiency Committee of the American Academy of Allergy, Asthma and Immunology. J Allergy Clin Immunol 2006;117(4 Suppl): S525-53.



- 37. Stasi R, Evangelista ML, Stipa E, et al. Idiopathic thrombocytopenic purpura: current concepts in pathophysiology and management. Thrombosis and Haemostasis 2008;99(1):4-13.
- 38. Amagai M, Ikeda S, Shimizu H, et al. A randomized, double-blind trial of intravenous immunoglobulin for pemphigus. J Am Acad Dermatol 2009; 60:595-602.
- 39. Ahmed AR. Intravenous immunoglobulin therapy in the treatment of patients with pemphigus vulgaris unresponsive to conventional immunosuppressive treatment. J Am Acad Dermatol 2001; 45:679-90.
- 40. Hughes R, Bensa S, Willison H, Vet al. Inflammatory Neuropathy Cause and Treatment (INCAT) Group. Randomized controlled trial of intravenous immunoglobulin versus oral prednisolone in chronic inflammatory demyelinating polyradiculoneuropathy. Ann Neurol. 2001 Aug;50(2):195-201.
- 41. Zinman L, Ng E, Bril V. IV immunoglobulin in patients with myasthenia gravis: a randomized controlled trial. Neurology. 2007 Mar 13;68(11):837-41.
- 42. Koski CL, Baumgarten M, Magder LS, et al. Derivation and validation of diagnostic criteria for chronic inflammatory demyelinating polyneuropathy. Journal of the Neurological Sciences 2009; 277:1-8.
- 43. Sullivan KM, Storek J, Kopecky KJ, et al. A controlled trial of long-term administration of intravenous immunoglobulin to prevent late infection and chronic graft-vs.-host disease after marrow transplantation: clinical outcome and effect on subsequent immune recovery. Biol Blood Marrow Transplant 1996;2:44-53.
- 44. Alejandria MM, Lansang MA, Dans LF, Mantaring JB. Intravenous immunoglobulin for treating sepsis and septic shock. Cochrane Database Syst Rev 2002;CD001090.
- 45. American College of Obstetricians and Gynecologists (ACOG), Committee on Practice Bulletins -- Obstetrics. Thrombocytopenia in pregnancy. ACOG Practice Pattern No. 6. Washington, DC: ACOG; September 1999.
- 46. Centers for Disease Control and Prevention. Guidelines for preventing opportunistic infections among hematopoietic stem cell transplant recipients: recommendations of CDC, the Infectious Disease Society of America, and the American Society of Blood and Marrow Transplantation. MMWR 2000;49(No. RR-10):1-128.
- 47. Emerson GG, Herndon CN, Sreih AG. Thrombotic complications after intravenous immunoglobulin therapy in two patients. Pharmacotherapy. 2002;22:1638-1641.
- 48. Department of Health (London). Clinical Guidelines for Immunoglobulin Use: Update to Second Edition. August, 2011.
- 49. Provan, Drew, et al. "Clinical guidelines for immunoglobulin use." Department of Health Publication, London (2008).
- 50. Sussman J, Farrugia ME, Maddison P, et al. Myasthenia gravis: Association of British Neurologists' management guidelines. Pract Neurol 2015; 15: 199-206.
- 51. Sanders DB, Wolfe GI, Benatar M, et al. International consensus guidance for management of myasthenia gravis-Executive Summary. Neurology. 2016 Jul 26; 87(4): 419-25.
- 52. Orange JS, Ballow M, Stiehm, et al. Use and interpretation of diagnostic vaccination in primary immunodeficiency: A working group report of the Basic and Clinical Immunology Interest Section of the American Academy of Allergy, Asthma & Immunology. J Allergy Clin Immunol Vol 130 (3).



- 53. Neunert C, Lim W, Crowther M, et al. The American Society of Hematology 2011 Evidence-based practice guidelines for immune thrombocytopenia. Blood April 2011; Vol 117 (16).
- 54. Jeffrey Modell Foundation Medical Advisory Board, 2013. 10 Warning Signs of Primary Immunodeficiency. Jeffrey Modell Foundation, New York, NY.
- 55. Bonilla FA, Khan DA, Ballas ZK, et al. Practice Parameter for the diagnosis and management of primary immunodeficiency. J Allergy Clin Immunol 2015 Nov;136(5):1186-205.e1-78.
- 56. Kuitwaard K, de Gelder J, Tio-Gillen AP, et al. Pharmacokinetics of intravenous immunoglobulin and outcome in Guillain-Barré syndrome. Ann Neurol. 2009;66(5):597.
- 57. Shehata N, Palda VA, Meyer RM, et al. The use of immunoglobulin therapy for patients undergoing solid organ transplantation: an evidence-based practice guideline. Transfus Med Rev 2010; 24 Suppl 1:S7-S27.
- 58. Jordan SC, Tyan D, Stablein D, et al. Evaluation of intravenous immunoglobulin as an agent to lower allosensitization and improve transplantation in highly sensitized adult patients with end-stage renal disease: report of the NIH IG02 trial. J Am Soc Nephrol 2004; 15(12):3256-3262.
- 59. Yuan XP, Wang CX, Gao W, et al. Kidney transplant in highly sensitized patients after desensitization with plasmapheresis and low-dose intravenous immunoglobulin. Exp Clin Transplant 2010; 8(2):130-135.
- 60. Jordan SC, Quartel AW, Czer LSC, et al. Posttransplant therapy using high-dose human immunoglobulin (intravenous gamma globulin) to control acute humoral rejection in renal and cardiac allograft recipients and potential mechanism of action. Transplantation 1998; 66(6):800-805.
- 61. Sullivan KM, Kopecky KJ, Jocom J, et al. Immunomodulatory and antimicrobial efficacy of intravenous immunoglobulin in bone marrow transplantation. N Engl J Med 1990; 323:705-712.
- 62. Bhatti AB, Gazali ZA. Recent Advances and Review on Treatment of Stiff Person Syndrome in Adults and Pediatric Patients. Cureus. 2015 Dec 22;7(12):e427
- 63. Tanimoto K, Nakano K, Kano S, et al. Classification criteria for polymyositis and dermatomyositis. J Rheumatol. 1995 Apr;22(4):668-74.
- 64. Kyriakides T, Angelini C, Schaefer J, et al. EFNS guidelines on the diagnostic approach to pauci- or asymptomatic hyperCKemia. Eur J Neurol. 2010 Jun 1;17(6):767-73.
- 65. Feliciani C, Joly P, Jonkman MF, et al. Management of bullous pemphigoid: the European Dermatology Forum consensus in collaboration with the European Academy of Dermatology and Venereology. Br J Dermatol. 2015 Apr;172(4):867-77.
- 66. Hertl M, Jedlickova H, Karpati S, et al. Pemphigus. S2 Guideline for diagnosis and treatment-guided by the European Dermatology Forum (EDF) in cooperation with the European Academy of Dermatology and Venereology (EADV). J Eur Acad Dermatol Venereol. 2015 Mar;29(3):405-14.
- 67. Harman KE, Albert S, Black MM; British Association of Dermatologists. Guidelines for the management of pemphigus vulgaris. Br J Dermatol. 2003 Nov;149(5):926-37.
- 68. Perez EE, Orange JS, Bonilla F, et al. Update on the use of immunoglobulin in human disease: A review of evidence. J Allergy Clin Immunol. 2017 Mar;139(3S):S1-S46.
- 69. Dantal J. Intravenous Immunoglobulins: In-Depth Review of Excipients and Acute Kidney Injury Risk. Am J Nephrol 2013;38:275-284.



- 70. Rajabally YA et al. Validity of diagnostic criteria for chronic inflammatory demyelinating polyneuropathy: A multicentre European study. J Neurol Neurosurg Psychiatry 2009 Dec; 80:1364.
- 71. Referenced with permission from the NCCN Drugs & Biologics Compendium (NCCN Compendium®) Management of Immunotherapy-Related Toxicities, Version 1.2022. National Comprehensive Cancer Network, 2022. The NCCN Compendium® is a derivative work of the NCCN Guidelines®. NATIONAL COMPREHENSIVE CANCER NETWORK®, NCCN®, and NCCN GUIDELINES® are trademarks owned by the National Comprehensive Cancer Network, Inc." To view the most recent and complete version of the Compendium, go online to NCCN.org. Accessed September 2022.
- 72. Postow, MA. Managing Immune Checkpoint-Blocking Antibody Side Effects. American Society of Clinical Oncology Education Book. 2015; 76-83.
- 73. Williams TJ, Benavides DR, Patrice KA. Association of Autoimmune Encephalitis with combined immune checkpoint inhibitor treatment for metastatic cancer. *JAMA Neurol*.933-928:(8)73;2016doi:10.1001/jamaneurol.2016.1399
- 74. Tomblyn M, Chiller T, Einsele H, et al. Guidelines for preventing infectious complications among hematopoietic cell transplantation recipients: a global perspective. Biol Blood Marrow Transplant. 2009;15(10):1143-1238. doi: 10.1016/j.bbmt.2009.06.019. [PubMed 19747629]
- 75. Willison HJ, Jacobs BS, van Doom PA. Guillain-Barré Syndrome. Lancet. 2016 Aug;388(10045):717-27. Epub 2016 Mar 2
- 76. Sanders DB, Wolfe GI, Benetar M, et al. International consensus guidance for management of myasthenia gravis. Neurology 2016;87:1–7
- 77. Van Winkle P, Burchette R, Kim R, et al. Prevalence and Safety of Intravenous Immunoglobulin Administration During Maintenance Chemotherapy in Children with Acute Lymphoblastic Leukemia in First Complete Remission: A Health Maintenance Organization Perspective. Perm J. 2018; 22: 17-141.
- 78. Referenced with permission from the NCCN Drugs and Biologics Compendium (NCCN Compendium®) Immune globulin. National Comprehensive Cancer Network, 2022. The NCCN Compendium® is a derivative work of the NCCN Guidelines®. NATIONAL COMPREHENSIVE CANCER NETWORK®, NCCN®, and NCCN GUIDELINES® are trademarks owned by the National Comprehensive Cancer Network, Inc. To view the most recent and complete version of the Compendium, go online to NCCN.org. Accessed September 2022.
- 79. Neunert C, Terrell DR, Arnold DM, et al. American Society of Hematology 2019 guidelines for immune thrombocytopenia. Blood Adv. 2019; 3(23): 3829-3866.
- 80. Lundberg IE, Tjärnlund A, Bottai M, et al. 2017 European League Against Rheumatism/American College of Rheumatology classification criteria for adult and juvenile idiopathic inflammatory myopathies and their major. Ann Rheum Dis. 2017;76(12):1955-1964.
- 81. McCrindle BW, Rowley AH, Newburger JW, et al. Diagnosis, treatment, and long-term management of Kawasaki disease: A scientific statement for health professionals from the American Heart Association. Circulation 2017;135:e927-e999.
- 82. Winkelhorst D, Murphy MF, Greinacher A, et al. Antenatal management in fetal and neonatal alloimmune thrombocytopenia: a systematic review. Blood. 2017;129(11):1538-1547.



- 83. Narayanaswami P, Sanders D, Wolfe G, Benatar M, et al. International consensus guidance for management of myasthenia gravis, 2020 update. Neurology® 2021;96:114-122. doi:10.1212/WNL.000000000011124
- 84. Hill J, Giralt S, Torgerson T, et al. AR-T– and a side order of IgG, to go? Immunoglobulin Replacement in Patients Receiving CAR-T Cell Therapy. Blood Rev. 2019 Nov; 38: 100596. Epub doi: 10.1016/j.blre.2019.100596
- 85. Aggarwal R, Schoeman C, Schessl J, et al. Prospective, double-blind, randomized, placebo-controlled phase III study evaluating efficacy and safety of octagam 10% in patients with dermatomyositis ("ProDERM Study"). Clinical Trial Medicine (Baltimore) 2021 Jan 8;100(1):e23677. doi: 10.1097/MD.0000000000023677.
- 86. Chapel H, Dicato M, Gamm H, et al. Immunoglobulin replacement in patients with chronic lymphocytic leukaemia: a comparison of two dose regimes. Br J Haematol 1994 Sep;88(1):209-12. doi: 10.1111/j.1365-2141.1994.tb05002.x.
- 87. Panel on Opportunistic Infections in HIV-Exposed and HIV-Infected Children. Updates to Guidelines for the Prevention and Treatment of Opportunistic Infections in HIV-Exposed and HIV-Infected Children. Department of Health and Human Services. Available at https://clinicalinfo.hiv.gov/en/guidelines/pediatric-opportunistic-infection. Updated September 2022.
- 88. ACOG Practice Bulletin No. 207: Thrombocytopenia in Pregnancy. Obstet Gynecol. 2019 Mar;133(3):e181-e193. doi: 10.1097/AOG.000000000003100.
- 89. Harman KE, Brown D, Exton LS, et al. British Association of Dermatologists' guidelines for the management of pemphigus vulgaris 2017. Br J Dermatol. 2017 Nov;177(5):1170-1201. doi: 10.1111/bjd.15930.
- 90. Ueda M, Berger M, Gale RP, Lazarus HM. Immunoglobulin therapy in hematologic neoplasms and after hematopoietic cell transplantation. Blood Rev. 2018 Mar;32(2):106-115. doi: 10.1016/j.blre.2017.09.003.
- 91. Alejandria MM, Lansang MA, Dans LF, Mantaring JB 3<sup>rd</sup>. Intravenous immunoglobulin for treating sepsis, severe sepsis and septic shock. Cochrane Database Syst Rev. 2013 Sep 16;2013(9):CD001090. Doi: 10.1002/14651858.CD001090.pub2.
- 92. Cawley MJ, Briggs M, Haith LR, et al: Intravenous immunoglobulin as adjunctive treatment for streptococcal toxic shock syndrome associated with necrotizing fasciitis: case report and review. Pharmacotherapy 1999; 19(9):1094-1098.
- 93. Hill JA, Seo SK. How I prevent infections in patients receiving CD19-targeted chimeric antigen receptor T cells for B-cell malignancies. Blood. 2020 Aug 20;136(8):925-935. Doi: 10.1182/blood.2019004000.
- 94. Derman BA, Schlei Z, Parsad S, et al. Changes in Intravenous Immunoglobulin Usage for Hypogammaglobulinemia After Implementation of a Stewardship Program. JCO Oncol Pract. 2021 Mar;17(3):e445-e453. doi: 10.1200/OP.20.00312.
- 95. Rethymic [package insert]. Cambridge, MA; Enzyvant Therapeutics, Inc.; December 2021. Accessed October 2022.
- 96. Abdou NI, Greenwell CA, Mehta R, et al. Efficacy of intravenous gammaglobulin for immunoglobulin G subclass and/or antibody deficiency in adults. Int Arch Allergy Immunol. 2009;149(3):267-74. doi: 10.1159/000199723.



- 97. Abrahamian F, Agrawal S, Gupta S. Immunological and clinical profile of adult patients with selective immunoglobulin subclass deficiency: response to intravenous immunoglobulin therapy. Clin Exp Immunol. 2010 Mar;159(3):344-50. doi: 10.1111/j.1365-2249.2009.04062.x.
- 98. Olinder-Nielsen AM, Granert C, Forsberg P, et al. Immunoglobulin prophylaxis in 350 adults with IgG subclass deficiency and recurrent respiratory tract infections: a long-term follow-up. Scand J Infect Dis. 2007;39(1):44-50. doi: 10.1080/00365540600951192.
- 99. National Coverage Determination (NCD) for Intravenous Immune Globulin for the Treatment of Autoimmune Mucocutaneous Blistering Diseases (250.3). Centers for Medicare and Medicaid Services, Inc. Updated on 01/04/2016 with effective date 10/1/2015. Accessed September 2022.
- 100. National Government Services, Inc. Local Coverage Article: Billing and Coding: Intravenous Immune Globulin (IVIG) (A52446). Centers for Medicare & Medicaid Services, Inc. Updated on 03/25/2022 with effective date 04/01/2022. Accessed September 2022.
- 101. Noridian Healthcare Solutions, LLC. Local Coverage Article: Billing and Coding: Intravenous Immune Globulin (IVIg)-NCD 250.3 (A54641, A54643). Centers for Medicare & Medicaid Services, Inc. Updated on 05/07/2020 with effective date 11/7/2015. Accessed September 2022.
- 102. Noridian Healthcare Solutions, LLC. Local Coverage Article: Billing and Coding: Coverage of Intravenous Immune Globulin for Treatment of Primary Immune Deficiency Diseases in the Home Medicare Benefit Policy Manual, Chapter 15, 50.6 (A54660, A54662). Centers for Medicare & Medicaid Services, Inc. Updated 05/07/2020 with effective date 08/13/2019. Accessed September 2022.
- 103. Noridian Healthcare Solutions, LLC. Local Coverage Article: Billing and Coding: Immune Globulin Intravenous (IVIg) (A57187). Centers for Medicare & Medicaid Services, Inc. Updated 09/10/2021 with effective date 10/01/2021. Accessed September 2022.
- 104. Noridian Healthcare Solutions, LLC. Local Coverage Article: Billing and Coding: Immune Globulin Intravenous (IVIg) (A57194). Centers for Medicare & Medicaid Services, Inc. Updated 09/10/2021 with effective date 10/01/2021. Accessed September 2022.
- 105. Wisconsin Physicians Service Insurance Corporation. Local Coverage Article: Billing and Coding: Immune Globulins (A57554). Centers for Medicare & Medicaid Services, Inc. Updated on 11/16/2021 with effective date 11/25/2021. Accessed September 2022.
- 106. CGS, Administrators, LLC. Local Coverage Article: Billing and Coding: Immune Thrombocytopenia (ITP) Therapy (A57160). Centers for Medicare & Medicaid Services, Inc. Updated on 02/23/2022 with effective date 03/03/2022. Accessed September 2022.
- 107. First Coast Service Options, Inc. Local Coverage Article: Billing and Coding: Intravenous Immune Globulin (A57778). Centers for Medicare & Medicaid Services, Inc. Updated on 09/25/2020 with effective date 10/01/2020. Accessed September 2022.
- 108. Novitas Solutions, Inc. Local Coverage Article: Billing and Coding: Intravenous Immune Globulin (IVIG) (A56786). Centers for Medicare & Medicaid Services, Inc. Updated on 09/25/2020 with effective date 10/01/2020. Accessed September 2022.
- 109. Palmetto GBA, LLC. Local Coverage Article: Intravenous Immunoglobulin (IVIG) (A56718). Centers for Medicare & Medicaid Services, Inc. Updated on 08/26/2022 with effective date 10/01/2022. Accessed September 2022.



110. CGS, Administrators, LLC. Local Coverage Article: Billing and Coding: Intravenous Immune Globulin (A56779). Centers for Medicare & Medicaid Services, Inc. Updated on 03/18/2022 with effective date 03/24/2022. Accessed September 2022.

# **Appendix 1 – Covered Diagnosis Codes**

ICD-10	ICD-10 Description
A48.3	Toxic shock syndrome
B20	Human immunodeficiency virus (HIV) disease
B25.0	Cytomegaloviral pneumonitis
B25.1	Cytomegaloviral hepatitis
B25.2	Cytomegaloviral pancreatitis
B25.8	Other cytomegaloviral diseases
B25.9	Cytomegaloviral disease, unspecified
C91.10	Chronic lymphocytic leukemia of B-cell type not having achieved remission
C91.11	Chronic lymphocytic leukemia of B-cell type in remission
C91.12	Chronic lymphocytic leukemia of B-cell type in relapse
C90.00	Multiple Myeloma not having achieved remission
C90.01	Multiple Myeloma in remission
C90.02	Multiple Myeloma in relapse
C90.10	Plasma cell leukemia not having achieved remission
C90.11	Plasma cell leukemia in remission
C90.12	Plasma cell leukemia in relapse
C90.00	Acute lymphoblastic leukemia not having achieved remission
C90.01	Acute lymphoblastic leukemia, in remission
C90.02	Acute lymphoblastic leukemia, in relapse
D69.3	Immune thrombocytopenic purpura
D69.41	Evans syndrome
D69.42	Congenital and hereditary thrombocytopenic purpura
D69.49	Other primary thrombocytopenia
D69.59	Other secondary thrombocytopenia
D80.0	Hereditary hypogammaglobulinemia
D80.1	Nonfamilial hypogammaglobulinemia
D80.3	Selective deficiency of immunoglobulin G [IgG] subclasses
D80.5	Immunodeficiency with increased immunoglobulin M [IgM]
D80.7	Transient hypogammaglobulinemia of infancy
D81.0	Severe combined immunodeficiency [SCID] with reticular dysgenesis

ICD-10	ICD-10 Description
D81.1	Severe combined immunodeficiency [SCID] with low T- and B-cell numbers
D81.2	Severe combined immunodeficiency [SCID] with low or normal B-cell numbers
D81.6	Major histocompatibility complex class I deficiency
D81.7	Major histocompatibility complex class II deficiency
D81.89	Other combined immunodeficiencies
D81.9	Combined immunodeficiency, unspecified
D82.0	Wiskott-Aldrich syndrome
D82.1	DiGeorge's syndrome
D82.8	Immunodeficiency associated with other specified major defects
D83.0	Common variable immunodeficiency with predominant abnormalities of B-cell numbers and function
D83.2	Common variable immunodeficiency with autoantibodies to B- or T-cells
D83.8	Other common variable immunodeficiencies
D83.9	Common variable immunodeficiency, unspecified
D89.810	Acute graft-versus-host disease
D89.812	Acute on chronic graft-versus-host disease
D89.834	Cytokine release syndrome, grade 4
D89.839	Cytokine release syndrome, grade unspecified
G03.8	Meningitis due to other specified causes
G03.9	Meningitis, unspecified
G04.81	Other encephalitis and encephalomyelitis
G04.89	Other myelitis
G04.90	Encephalitis and encephalomyelitis, unspecified
G04.91	Myelitis, unspecified
G25.82	Stiff-man syndrome
G56.80	Other specified mononeuropathies of unspecified upper limb
G56.81	Other specified mononeuropathies of right upper limb
G56.82	Other specified mononeuropathies of left upper limb
G56.83	Other specified mononeuropathies of bilateral upper limbs
G56.90	Unspecified mononeuropathy of unspecified upper limb
G56.91	Unspecified mononeuropathy of right upper limb
G56.92	Unspecified mononeuropathy of left upper limb
G56.93	Unspecified mononeuropathy of bilateral upper limbs
G57.80	Other specified mononeuropathies of unspecified lower limb
G57.81	Other specified mononeuropathies of right lower limb
G57.82	Other specified mononeuropathies of left lower limb



ICD-10	ICD-10 Description	
G57.83	Other specified mononeuropathies of bilateral lower limbs	
G57.90	Unspecified mononeuropathy of unspecified lower limb	
G57.91	Unspecified mononeuropathy of right lower limb	
G57.92	Unspecified mononeuropathy of left lower limb	
G57.93	Unspecified mononeuropathy of bilateral lower limbs	
G61.0	Guillain-Barre syndrome	
G61.1	Serum neuropathy	
G61.81*	Chronic inflammatory demyelinating polyneuritis	
G61.82	Multifocal motor neuropathy	
G61.89	Other inflammatory polyneuropathies	
G61.9	Inflammatory polyneuropathy, unspecified	
G62.0	Drug-induced polyneuropathy	
G62.89	Other specified polyneuropathies	
G70.00	Myasthenia gravis without (acute) exacerbation	
G70.01	Myasthenia gravis with (acute) exacerbation	
G90.09	Other idiopathic peripheral autonomic neuropathy	
130.8	Other forms of acute pericarditis	
130.9	Acute pericarditis, unspecified	
I40.8	Other acute myocarditis	
I40.9	Acute myocarditis, unspecified	
J70.2	Acute drug-induced interstitial lung disorders	
J70.4	Drug-induced interstitial lung disorders, unspecified	
L10.0	Pemphigus vulgaris	
L10.2	Pemphigus foliaceous	
L12.0	Bullous pemphigoid	
L12.1	Cicatricial pemphigoid	
L12.30	Acquired epidermolysis bullosa, unspecified	
L12.31	Epidermolysis bullosa due to drug	
L12.35	Other acquired epidermolysis bullosa	
L12.5	Other acquired epidermolysis bullosa	
L13.8	Other specified bullous disorders	
L13.9	Bullous disorder, unspecified	
L51.1	Stevens-Johnson syndrome	
L51.2	Toxic epidermal necrolysis [Lyell]	
M06.4	Inflammatory polyarthropathy	



ICD-10	ICD-10 Description	
M30.3	Mucocutaneous lymph node syndrome [Kawasaki]	
M33.00	Juvenile dermatomyositis, organ involvement unspecified	
M33.01	Juvenile dermatomyositis with respiratory involvement	
M33.02	Juvenile dermatomyositis with myopathy	
M33.03	Juvenile dermatomyositis without myopathy	
M33.09	Juvenile dermatomyositis with other organ involvement	
M33.10	Other dermatomyositis, organ involvement unspecified	
M33.11	Other dermatomyositis with respiratory involvement	
M33.12	Other dermatomyositis with myopathy	
M33.13	Other dermatomyositis without myopathy	
M33.19	Other dermatomyositis with other organ involvement	
M33.20	Polymyositis, organ involvement unspecified	
M33.21	Polymyositis with respiratory involvement	
M33.22	Polymyositis with myopathy	
M33.29	Polymyositis with other organ involvement	
M33.90	Dermatopolymyositis, unspecified, organ involvement unspecified	
M33.91	Dermatopolymyositis, unspecified with respiratory involvement	
M33.92	Dermatopolymyositis, unspecified with myopathy	
M33.93	Dermatopolymyositis, unspecified without myopathy	
M33.99	Dermatopolymyositis, unspecified with other organ involvement	
M36.0	Dermato(poly)myositis in neoplastic disease	
M60.80	Other myositis, unspecified site	
M60.811	Other myositis, right shoulder	
M60.812	Other myositis, left shoulder	
M60.819	Other myositis, unspecified shoulder	
M60.821	Other myositis, right upper arm	
M60.822	Other myositis, left upper arm	
M60.829	Other myositis, unspecified upper arm	
M60.831	Other myositis, right forearm	
M60.832	Other myositis, left forearm	
M60.839	Other myositis, unspecified forearm	
M60.841	Other myositis, right hand	
M60.842	Other myositis, left hand	
M60.849	Other myositis, unspecified hand	
M60.851	Other myositis, right thigh	



ICD-10	ICD-10 Description
M60.852	Other myositis, left thigh
M60.859	Other myositis, unspecified thigh
M60.861	Other myositis, right lower leg
M60.862	Other myositis, left lower leg
M60.869	Other myositis, unspecified lower leg
M60.871	Other myositis, right ankle and foot
M60.872	Other myositis, left ankle and foot
M60.879	Other myositis, unspecified ankle and foot
M60.88	Other myositis, other site
M60.89	Other myositis, multiple sites
M60.9	Myositis, unspecified
M79.10	Myalgia, unspecified site
M79.11	Myalgia of mastication muscle
M79.12	Myalgia of auxiliary muscles, head and neck
M79.18	Myalgia, other site
O26.40	Herpes gestationis, unspecified trimester
O26.41	Herpes gestationis, first trimester
O26.42	Herpes gestationis, second trimester
O26.43	Herpes gestationis, third trimester
P61.0	Transient neonatal thrombocytopenia
T80.82XA	Complication of immune effector cellular therapy, initial encounter
T80.82XS	Complication of immune effector cellular therapy, sequela
T80.89XA	Other complications following infusion, transfusion and therapeutic injection, initial encounter
T80.89XS	Other complications following infusion, transfusion and therapeutic injection, sequela
T86.00	Unspecified complication of bone marrow transplant
T86.01	Bone marrow transplant rejection
T86.02	Bone marrow transplant failure
T86.03	Bone marrow transplant infection
T86.09	Other complications of bone marrow transplant
T86.10	Unspecified complication of kidney transplant
T86.11	Kidney transplant rejection
T86.12	Kidney transplant failure
T86.13	Kidney transplant infection
T86.19	Other complication of kidney transplant
T86.20	Unspecified complication of heart transplant



ICD-10	ICD-10 Description	
T86.21	Heart transplant rejection	
T86.22	Heart transplant failure	
T86.23	Heart transplant infection	
T86.290	Cardiac allograft vasculopathy	
T86.298	Other complications of heart transplant	
T86.30	Unspecified complication of heart-lung transplant	
T86.31	Heart-lung transplant rejection	
T86.32	Heart-lung transplant failure	
T86.33	Heart-lung transplant infection	
T86.39	Other complications of heart-lung transplant	
T86.40	Unspecified complication of liver transplant	
T86.41	Liver transplant rejection	
T86.42	Liver transplant failure	
T86.43	Liver transplant infection	
T86.49	Other complications of liver transplant	
T86.810	Lung transplant rejection	
T86.811	Lung transplant failure	
T86.812	Lung transplant infection	
T86.818	Other complications of lung transplant	
T86.819	Unspecified complication of lung transplant	
T86.890	Other transplanted tissue rejection	
T86.891	Other transplanted tissue failure	
T86.892	Other transplanted tissue infection	
T86.898	Other complications of other transplanted tissue	
T86.899	Unspecified complication of other transplanted tissue	
Z48.21	Encounter for aftercare following heart transplant	
Z48.22	Encounter for aftercare following kidney transplant	
Z48.23	Encounter for aftercare following liver transplant	
Z48.24	Encounter for aftercare following lung transplant	
Z48.280	Encounter for aftercare following heart-lung transplant	
Z48.290	Encounter for aftercare following bone marrow transplant	
Z94.0	Kidney transplant status	
Z94.1	Heart transplant status	
Z94.2	Lung transplant status	
Z94.3	Heart and lungs transplant status	



ICD-10	ICD-10 Description
Z94.4	Liver transplant status
Z94.81	Bone marrow transplant status
Z94.83	Pancreas transplant status
Z94.84	Stem cells transplant status

<sup>\*</sup>G61.81 is not payable when associated with diabetes mellitus, dysproteinemias, renal failure, or malnutrition

# Appendix 2 – Centers for Medicare and Medicaid Services (CMS)

Medicare coverage for outpatient (Part B) drugs is outlined in the Medicare Benefit Policy Manual (Pub. 100-2), Chapter 15, §50 Drugs and Biologicals. In addition, National Coverage Determination (NCD), Local Coverage Determinations (LCDs), and Local Coverage Articles (LCAs) may exist and compliance with these policies is required where applicable. They can be found at: https://www.cms.gov/medicare-coverage-database/search.aspx. Additional indications may be covered at the discretion of the health plan.

## Medicare Part B Covered Diagnosis Codes (applicable to existing NCD/LCD/LCA):

Jurisdiction(s): N	NCD/LCD/Article Document (s): A57778	
https://www.cms.gov/medicare-coverage-database/new-search/search-		
$\underline{results.aspx?keyword=a57778\&areaId=all\&docType=NCA\%2CCAL\%2CNCD\%2CMEDCAC\%2CTA\%2CMCD}$		
D%2C6%2C3%2C5%2C1%2CF%2CP		

Jurisdiction(s): F	NCD/LCD/Article Document (s): A57194
https://www.cms.gov/medicare-coverage-database/new-search/search-	

results.aspx?keyword=a57194&areaId=all&docType=NCA%2CCAL%2CNCD%2CMEDCAC%2CTA%2CMC D%2C6%2C3%2C5%2C1%2CF%2CP

Jurisdiction(s): H, L	NCD/LCD/Article Document (s): A56786	
https://www.cms.gov/medicare-coverage-database/new-search/search-		
results.aspx?keyword=a56786&areaId=all&docType=NCA%2CCAL%2CNCD%2CMEDCAC%2CTA%2CMC		
<u>D%2C6%2C3%2C5%2C1%2CF%2CP</u>		

Jurisdiction(s): E	NCD/LCD/Article Document (s): A57187
https://www.cms.gov/medicare-coverage-database/new-search/search-	
results.aspx?keyword=a57187&areaId=all&docType=NCA%2CCAL%2CNCD%2CMEDCAC%2CTA%2CMC	
<u>D%2C6%2C3%2C5%2C1%2CF%2CP</u>	

Jurisdiction(s): 5, 8	NCD/LCD/Article Document (s): A57554	
https://www.cms.gov/medicare-coverage-database/new-search/search-		
results.aspx?keyword=a57554&areaId=all&docType=NCA%2CCAL%2CNCD%2CMEDCAC%2CTA%2CMC		
<u>D%2C6%2C3%2C5%2C1%2CF%2CP</u>		



Jurisdiction(s): J, M NCD/LCD/Article Document (s): A56718

https://www.cms.gov/medicare-coverage-database/new-search/search-

results.aspx?keyword=a56718&areaId=all&docType=NCA%2CCAL%2CNCD%2CMEDCAC%2CTA%2CMC D%2C6%2C3%2C5%2C1%2CF%2CP

Jurisdiction(s): ALL NCD/LCD/Article Document (s): 250.3

https://www.cms.gov/medicare-coverage-database/view/ncd.aspx?ncdid=158&ncdver=1&bc=0

Jurisdiction(s): 15 NCD/LCD/Article Document (s): A56779

https://www.cms.gov/medicare-coverage-database/new-search/search-

results.aspx?keyword=a56779&areaId=all&docType=NCA%2CCAL%2CNCD%2CMEDCAC%2CTA%2CMC D%2C6%2C3%2C5%2C1%2CF%2CP

Jurisdiction(s): E, F NCD/LCD/Article Document (s): A54641, A54643

https://www.cms.gov/medicare-coverage-database/new-search/search-

results.aspx?keyword=a54641&areaId=all&docType=NCA%2CCAL%2CNCD%2CMEDCAC%2CTA%2CMC D%2C6%2C3%2C5%2C1%2CF%2CP

https://www.cms.gov/medicare-coverage-database/new-search/search-

results.aspx?keyword=a54643&areaId=all&docType=NCA%2CCAL%2CNCD%2CMEDCAC%2CTA%2CMC D%2C6%2C3%2C5%2C1%2CF%2CP

Jurisdiction(s): E, F NCD/LCD/Article Document (s): A54660, A54662

https://www.cms.gov/medicare-coverage-database/new-search/search-

results.aspx?keyword=a54660&areaId=all&docType=NCA%2CCAL%2CNCD%2CMEDCAC%2CTA%2CMC D%2C6%2C3%2C5%2C1%2CF%2CP

https://www.cms.gov/medicare-coverage-database/new-search/search-

results.aspx?keyword=a54662&areaId=all&docType=NCA%2CCAL%2CNCD%2CMEDCAC%2CTA%2CMC D%2C6%2C3%2C5%2C1%2CF%2CP

Jurisdiction(s): 6, K NCD/LCD/Article Document (s): A52446

https://www.cms.gov/medicare-coverage-database/new-search/search-

results.aspx?keyword=a52446&areaId=all&docType=NCA%2CCAL%2CNCD%2CMEDCAC%2CTA%2CMCD%2C6%2C3%2C5%2C1%2CF%2CP

Jurisdiction(s): 15 NCD/LCD/Article Document (s): A57160

https://www.cms.gov/medicare-coverage-database/new-search/search-

results.aspx?keyword=a57160&areaId=all&docType=NCA%2CCAL%2CNCD%2CMEDCAC%2CTA%2CMC D%2C6%2C3%2C5%2C1%2CF%2CP



Medicare Part B Administ		trative Contractor (MAC) Jurisdictions
Jurisdiction	Applicable State/US Territory	Contractor
E (1)	CA, HI, NV, AS, GU, CNMI	Noridian Healthcare Solutions, LLC
F (2 & 3)	AK, WA, OR, ID, ND, SD, MT, WY, UT, AZ	Noridian Healthcare Solutions, LLC
5	KS, NE, IA, MO	Wisconsin Physicians Service Insurance Corporation (WPS)
6	MN, WI, IL	National Government Services, Inc. (NGS)
H (4 & 7)	LA, AR, MS, TX, OK, CO, NM	Novitas Solutions, Inc.
8	MI, IN	Wisconsin Physicians Service Insurance Corporation (WPS)
N (9)	FL, PR, VI	First Coast Service Options, Inc.
J (10)	TN, GA, AL	Palmetto GBA, LLC
M (11)	NC, SC, WV, VA (excluding below)	Palmetto GBA, LLC
L (12)	DE, MD, PA, NJ, DC (includes Arlington & Fairfax counties and the city of Alexandria in VA)	Novitas Solutions, Inc.
K (13 & 14)	NY, CT, MA, RI, VT, ME, NH	National Government Services, Inc. (NGS)
15	KY, OH	CGS Administrators, LLC