

# UTILIZATION REVIEW MEDICAL POLICY

**POLICY:** Immune Globulin Intravenous Utilization Review Medical Policy

- Asceniv<sup>™</sup> (immune globulin intravenous liquid-sira ADMA Biologics)
- Bivigam<sup>®</sup> (immune globulin intravenous AMDA Biologics, Inc.)
- Carimune® NF Nanofiltered (immune globulin intravenous CSL Behring LLC)
- Flebogamma<sup>®</sup> DIF (immune globulin intravenous Grifols USA LLC)
- Gammagard Liquid, Gammagard S/D < 1 mcg/mL in 5% solution (immune globulin intravenous Baxalta US Inc.)
- Gammaked<sup>™</sup> (immune globulin intravenous caprylate/chromatography purified Kedrion Biopharma)
- Gammaplex® (immune globulin intravenous BPL Inc.)
- Gamunex®-C (immune globulin intravenous caprylate/chromatography purified Grifols USA LLC)
- Octagam<sup>®</sup> (immune globulin intravenous Octapharma USA)
- Panzyga® (immune globulin intravenous-ifas Octapharma USA Inc.)
- Privigen<sup>®</sup> Liquid (immune globulin intravenous CSL Behring LLC)

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#### **OVERVIEW**

Immune globulin intravenous (IVIG) products are concentrated human immunoglobulins, primarily immunoglobulin G (IgG).

All of the US licensed products (except Octagam 10%) are FDA-approved for replacement therapy in patients with primary immune deficiencies due to defects in humoral immunity. The following indications are FDA approved:

- **B-cell chronic lymphocytic leukemia (CLL)**, for prevention of bacterial infections in patients with hypogammaglobulinemia and/or recurrent bacterial infections. <sup>6,18,21</sup>
- Chronic inflammatory demyelinating polyneuropathy (CIDP), to improve neuromuscular disability and impairment and for maintenance therapy to prevent relapse. 7,9,12
- **Idiopathic (immune) thrombocytopenic purpura (ITP)**, acute and chronic, when a rapid rise in platelet count is needed to prevent and/or control bleeding or to allow a patient with ITP to undergo surgery. <sup>2,4,6-9,11,12,15,23-25</sup>
- **Kawasaki disease** in pediatric patients for the prevention of coronary artery aneurysm. <sup>6,26</sup> The American Heart Association and the American Academy of Pediatrics recommend initial therapy within 10 days of onset of fever with 2 g of IVIG per kg as a single IV dose given over 10 to 12 hours. <sup>26,27</sup> The dose can be repeated if needed.
- **Multifocal motor neuropathy (MMN)** in adults as maintenance therapy to improve muscle strength and disability.<sup>5</sup>
- **Primary humoral immune deficiency (PID**, for replacement therapy, including but not limited to the humoral immune defect in the following conditions: common variable immunodeficiency (CVID), X-linked agammaglobulinemia (XLA) [congenital agammaglobulinemia], Wiskott-Aldrich Syndrome, and severe combined immunodeficiencies (SCID). 1-10,12,15,16,25 Gammagard Liquid 10%, Gammaked, and Gamunex-C may be administered via intravenous (IV) or subcutaneous (SC) infusion for primary immunodeficiency. 57,9 IVIG is also indicated for measles

prophylaxis in individuals with PID who have been exposed to measles or who are at high risk of measles exposure. 3,4,7-10,12,13,17,24,45

IVIG is prepared from pooled plasma collected from a large number of human donors. <sup>1-12,15,16,25</sup> The donors in a typical pool of plasma have a wide range of antibodies against infectious agents. These products have IgG subclasses similar to that found in normal humans. Asceniv contains not only antibodies which satisfy the requirement to treat patients with primary immunodeficiencies (PID), it also has elevated levels of respiratory syncytial virus (RSV) antibodies. <sup>19</sup>

IVIG also is used for many off-label indications. Much of the evidence for clinical effectiveness of IVIG is anecdotal (i.e., case reports, open series, or cohort studies). Some conditions have been studied in controlled trials. Usually IVIG is indicated only if standard approaches have failed, become intolerable, or are contraindicated.

- Antibody-mediated Rejection (AMBR) in Transplantation. Current strategies for treatment of antibody-mediated rejection include plasmapheresis, intravenous immunoglobulin, and T-cell or B-cell-depleting agents. Although there are no controlled trials regarding the most appropriate treatments, the benefits of immune globulin have been well described and has been used as the standard-of-care (along with plasmapheresis) in multiple studies. Reference (2009 Kidney Disease: Improving Global Outcomes) recommends a combination of corticosteroids, plasmapheresis, IVIG, and anti-CD-20 antibody and lymphocyte-depleting antibody for antibody-mediated rejection. As in desensitization therapy, much of the information of IVIG use is in patients with kidney transplants, but the same principles apply to transplantation of other organs and tissues. Immune globulin has been used in lung transplant patients to treat ABMR<sup>20,79,80</sup> and a scientific statement from the American Heart Association states that primary therapy for ABMR in patients with heart transplants may include IVIG, plasmapheresis, high-dose corticosteroids, and anti-lymphocyte antibodies.
- Autoimmune Mucocutaneous Blistering Diseases (pemphigus vulgaris, pemphigus foliaceus, bullous pemphigoid, mucous membrane pemphigoid [cicatricial pemphigoid], and epidermolysis bullosa acquisita). Conventional therapy (a systemic corticosteroid and an immunosuppressive agent) is started at the same time or before IVIG. Many case reports and uncontrolled case series suggest benefit of IVIG in patients with recalcitrant disease or in those with contraindications to conventional therapy.<sup>28-30</sup>
- Cytomegalovirus (CMV) pneumonia in patients with cancer or transplant-related infection. For CMV pneumonia, therapy consists of ganciclovir IV injection (or foscarnet IV injection if CMV is ganciclovir-resistant) and IVIG in combination. The National Comprehensive Cancer Network (NCCN) guidelines on prevention and treatment of cancer-related infections (version 2.2020 June 5, 2020) note IVIG may be added to ganciclovir or foscarnet for treatment of CMV pneumonia.<sup>31</sup>
- **Dermatomyositis or polymyositis**. IVIG may be used in patients with dermatomyositis with severe active illness for whom other interventions have been unsuccessful or intolerable.<sup>32,33</sup> IVIG may be considered amongst the treatment options for patients with polymyositis not responding to first line immunosuppressive treatment.<sup>32</sup> In uncontrolled series, IVIG has been effective in polymyositis.
- Desensitization Therapy Prior to and Immediately after Transplantation. Patients with preexisting anti-human leukocyte antigen (HLA) antibodies (sensitized patients) are more likely to have a positive cross match with possible donors and have a lower likelihood of receiving a transplant with longer wait times. Most of the information on use of IVIG for desensitization is in patients with kidney transplantation but many of the same principles apply to transplantation of other organs and tissues. 34,35 Current protocols include using low-dose IVIG with plasma exchange

- or high-dose IVIG with or without B-cell depletions with Rituxan® (rituximab injection for IV infusion). 18
- Guillain Barre Syndrome (GBS). The American Academy of Neurology recommends IVIG in patients who require aid to walk within 2 or 4 weeks from the onset of neuropathic symptoms.<sup>37</sup> The effect of IVIG in GBS has only been investigated in randomized controlled trials in patients who are unable to walk at nadir (i.e., severely affected patients), not in mildly affected patients who are able to walk unaided at nadir.<sup>38</sup> IVIG is not indicated or proven to be effective in mildly affected GBS patients.<sup>32,38</sup>
- Hematologic neoplasm-associated hypogammaglobulinemia or hypogammaglobulinemia after B-cell targeted therapies (secondary immunodeficiency [SID]). Clinical guidelines for immunoglobulin use by the National Health Service- England note secondary antibody deficiency can be hypogammaglobinemia associated with therapeutic monoclonals targeted at B-cells and plasma cells, non-Hodgkin's lymphoma, CLL, multiple myeloma, or other relevant B-cell malignancies.<sup>27</sup>
- Hematopoietic cell transplantation (HCT) to prevent bacterial infections. HCT is defined as transplantation of any blood- or marrow-derived hematopoietic stem cells, regardless of transplant type (i.e., allogeneic or autologous) or cell source (i.e., bone marrow, peripheral blood, or umbilical cord blood). With regard to IVIG, guidelines recommend the following for prevention or preemptive treatment of specific infections in HCT recipients.<sup>39</sup> In adult or adolescent HCT recipients (allogeneic or autologous), IVIG is indicated to prevent bacterial infections in those with severe hypogammaglobulinemia (i.e., serum IgG < 400 mg/dL) during the first 100 days after HCT. In pediatric patients, IVIG is indicated in those with an allogeneic HCT if hypogammaglobulinemia is severe during the first 100 days after HCT. For prevention of bacterial infections beyond 100 days post-HCT (allogeneic or autologous), IVIG is recommended in recipients with severe hypogammaglobulinemia (i.e., serum IgG < 400 mg/dL). Guidelines from the American Society for Blood and Marrow Transplantation recommend the following doses in HCT recipients to prevent infectious complication.<sup>39</sup> During the first 100 days after HCT, the dose in adults and adolescents is 0.5 g/kg per week. The IVIG dose should be individualized to maintain trough (predose) serum IgG greater than 400 to 500 mg/dL. The dose in allogeneic pediatric HCT patients is 0.4 g/kg per month, adjusted to keep IgG > 400 mg/dL. Higher and more frequent dosing may be necessary in patients for prevention of early disease after HCT because the half-life of IVIG is reduced to 1 to 10 days in this population. Dosing for > 100 days post-HCT is 0.5 g/kg every 3 to 4 weeks. The dose is not adjusted using serum IgG level in patients with multiple myeloma or malignant macroglobulinemia.
- Human Immunodeficiency Virus (HIV)-associated thrombocytopenia. Secondary ITP can occur in patients with HIV infection.<sup>23,24</sup> Effective viral suppression using antiretroviral therapy improves HIV-associated cytopenias, including thrombocytopenia. Treatment of secondary ITP (HIV-associated) with short-term corticosteroid therapy increases the platelet count in a similar manner as in non-HIV infected persons and does not appears to be associated with adverse effects. The American Society of Hematology guidelines for immune thrombocytopenia recommend initial treatment with corticosteroids, IVIG, or Rh0(D) immune globulin for patients with secondary ITP due to HIV.<sup>23,24</sup>
- Human Immunodeficiency Virus (HIV)-infected infants and children to prevent recurrent bacterial infections. IVIG is no longer recommended for primary prevention of serious bacterial infections in HIV-infected children unless hypogammaglobulinemia is present or functional antibody deficiency is demonstrated by recurrent bacterial infections. In children with greater than two serious bacterial infections in a 1-year period and who cannot tolerate cART, secondary prophylaxis is indicated. The first choice of therapy for secondary prophylaxis is trimethoprim-sulfamethoxazole and IVIG every 2 to 4 weeks is an alternative. Clinicians providing care for adolescents are advised to use the US Department of Health and Human Services Adult and

Adolescent HIV-guideline for the care of post-pubertal adolescents (sexual maturity rating [SMR] IV and V) and to use the pediatric guideline for guidance on the care of adolescents at SMR III or lower 40

- Immunotherapy-related toxicities associated with checkpoint inhibitor therapy. NCCN guidelines for the management of immunotherapy-related toxicities (version 1.2020 December 16, 2020) recommend IVIG for the management of severe pneumonitis after 48 hours of methylprednisolone therapy; as treatment for severe myasthenia gravis; encephalitis; cardiovascular adverse events; inflammatory arthritis; musculoskeletal adverse events; moderate or severe Guillian-Barre Syndrome; severe transverse myelitis; bullous dermatitis; Stevens-Johnson syndrome/toxic epidermal necrolysis. The American Society of Clinical Oncology (ASCO) also has practice guidelines on the management of immune-related adverse events in patients treated with checkpoint inhibitor therapy. These practice guidelines address the above mentioned indications along with other diagnoses (e.g., severe cutaneous adverse reactions, myositis, autoimmune hemolytic anemia, immune thrombocytopenia).
- Lambert-Eaton Myasthenic Syndrome (LEMS). LEMS is a rare presynaptic autoimmune disorder of neuromuscular transmission that is characterized by proximal muscle weakness, depressed tendon reflexes, and autonomic dysfunction. Limited but moderate- to high-quality evidence from randomized controlled trials have shown that 3,4-diaminopyridine or IVIG was associated with improved muscle strength score and compounded muscle action potential amplitudes. IVIG may be used as an alternative in patients who do not respond or do not tolerate other therapies. Representations of the property of the proximal muscle action potential amplitudes.
- Multiple myeloma. Patients with multiple myeloma are often functionally hypogammaglobulinemic with total immunoglobulin production being elevated, but the repertoire of antibody production restricted.31 The NCCN guidelines on multiple myeloma (version 4.2020 May 8, 2020) recommend that IVIG should be considered in the setting of recurrent, life-threatening infections.<sup>42</sup>
- Multiple sclerosis, acute severe exacerbation or relapses. Medication options for relapse management include high dose corticosteroids, intramuscular adrenocorticotrophic hormone, plasmapheresis, and IVIG. IVIG is sometimes used to treat relapses that do not respond to corticosteroids. During pregnancy, relapses severe enough to require treatment can be safety managed with a short-term course of corticosteroids after the first trimester. Methylprednisolone is the preferable agent because it is metabolized before crossing the placenta. 43
- Multiple sclerosis, post-partum to prevent relapses. None of the disease modifying therapy for multiple sclerosis have been approved for use in women who are nursing. IVIG is the treatment of choice for post-partum mothers with multiple sclerosis who are nursing.<sup>44</sup>
- Myasthenia Gravis. Recommendations from an international consensus guidance statement for management of adult or juvenile myasthenia gravis include the use of IVIG in some patients. Symptomatic and immunosuppressive treatment of myasthenia gravis includes pyridostigmine as initial therapy in most patients. Corticosteroids or immunosuppressive therapies are used in all patients with myasthenia gravis who have not met treatment goals after an adequate trial of pyridostigmine. A nonsteroidal immunosuppressive agent (e.g., azathioprine, cyclosporine, mycophenolate mofetil, methotrexate, tacrolimus) should be used alone when corticosteroids are contraindicated or refused. In patients with refractory myasthenia gravis, chronic IVIG and chronic plasma exchange (PLEX), cyclophosphamide, or Rituxan may be used. PLEX and IVIG are recommended as short-term treatments in patients with myasthenia gravis with life-threatening effects such as respiratory insufficiency or dysphagia; to prepare for surgery in patients with significant bulbar dysfunction; when rapid response is needed; when other treatments are not adequate; and before starting corticosteroids if necessary to prevent or minimize exacerbations. IVIG can be considered as maintenance therapy in patients with refractory myasthenia gravis or in patients with relative contraindications to immunosuppressive agents. Refractory myasthenia

gravis is defined as the post intervention status is unchanged or worse after corticosteroids and at least two other immunosuppressive agents used in adequate doses for an adequate duration, with persistent symptoms or side effects that limit functioning as defined by the patient or physician. The international consensus guidance statement for management of adult or juvenile myasthenia gravis<sup>65</sup> recommends an initial dose of IVIG 2 g/kg given in divided doses over 2 to 5 days. For maintenance therapy, the recommended dose is 0.4 to 1 g/kg given every 4 weeks; an attempt to decrease frequency can be made over time. If additional treatment is required, the dose should be adjusted based on the response.

- Passive immunization for measles (post-exposure prophylaxis). When administered within 6 days of exposure, immune globulin (IG) can prevent or modify measles in patients who are nonimmune.<sup>13</sup> IG therapy is not indicated in persons who have received one dose of measlescontaining vaccine at ≥ 12 months, unless they are severely immunocompromised. The Advisory Committee on Immunization Practices (ACIP) recommends the use of IG therapy for post-exposure prophylaxis of measles in the following patients who are at risk for severe disease and complication from measles: infants < 12 months of age; pregnant women without evidence of measles immunity; and severely immunocompromised persons.<sup>13</sup> For infants aged < 12 months intramuscular IG is used; infants aged 6 through 11 months can receive MMR vaccine instead of IG if given within 72 hours of exposure. IVIG is used for pregnant women and severely immunocompromised patients. The ACIP recommends 400 mg/kg as an IV infusion.<sup>13</sup>
- Passive immunization for Varicella (chickenpox) [post-exposure prophylaxis]. HIV-infected children without a history of previous chickenpox or children who have not received two doses of varicella vaccine should receiving VariZIG® or, if not available, IVIG within 10 days (ideally within 4 days) after close contact with a person who has chickenpox or shingles. 41,46 VariZIG is indicated for post-exposure prophylaxis in certain patients without immunity to varicella and is given as soon as possible after exposure, preferable within 4 days, and as late as 10 days after exposure. 47 Whether to administer VariZIG depends on three factors: 1) whether the patient lacks evidence of immunity to varicella; 2) whether the exposure is likely to result in infection; and 3) whether the patient is at greater risk for varicella complications than the general population. 48 For pregnant women who cannot receive VariZIG, clinicians can choose either IVIG or closely monitor women for signs or symptoms of varicella and institute acyclovir therapy if illness occurs. 46 In situations where administration of VariZIG does not appear possible within 10 days of exposure, IVIG is considered an alternative and should be given within 10 days of exposure48 (and ideally within 96 hours of exposure). 40 The dose is 400 mg/kg given once. 40,41
- Pure red blood cell aplasia secondary to chronic (persistent) parvovirus B19 infection and immunologic subtype. In immunosuppressed patients lacking neutralizing antibodies, IVIG has been useful for the treatment of persistent B19 infection. IVIG has been used to treat severe anemia secondary to chronic B19 infection in the context of solid-organ transplantation, HIV infection, or primary antibody deficiency. A Canadian expert panel of hematologists recommend prednisone followed by cyclophosphamide or cyclosporine as first-line therapy for immunologic type PRCA. The panel considers IVIG a reasonable second-line option for this serious condition.
- Stiff-Person Syndrome (Moersch-Woltman Syndrome). Per the European Federation of Neurological Societies, IVIG should be reserved for patients who have no symptomatic relief after the use of diazepam and/or baclofen and have severe disability in carrying out daily activities.<sup>32</sup>
- **Thrombocytopenia, feto-neonatal alloimmune**. Antenatal therapy with IVIG administered to the mother is effective in increasing fetal platelet counts in neonatal alloimmune thrombocytopenia. <sup>50,51</sup> First-line therapy for newborns with fetal/neonatal alloimmune thrombocytopenia is antigennegative compatible platelets; IVIG is adjunctive.

### **POLICY STATEMENT**

Prior authorization is recommended for medical benefit coverage of IVIG products. Approval is recommended for those who meet the **Criteria** and **Dosing** for the listed indications. Extended approvals are allowed if the patient continues to meet the Criteria and Dosing. Requests for doses outside of the established dosing documented in this policy will be considered on a case-by-case basis by a clinician (i.e., Medical Director or Pharmacist). All approvals are provided for the duration noted below. In cases where the approval is authorized in months, 1 month is equal to 30 days. Because of the specialized skills required for evaluation and diagnosis of patients treated with IVIG products as well as the monitoring required for adverse events and long-term efficacy, some approvals require IVIG products to be prescribed by or in consultation with a physician who specializes in the condition being treated.

If the prescriber is switching between IVIG products and a case has already been approved by a clinician, a new approval may be entered without another clinical review. The new approval should only be extended for the remaining doses and duration which were granted on the original review. The indication (or diagnosis code) and dosing need to be the same as the original review. If the indication or dosing is different, a new clinical review would need to be completed.

## RECOMMENDED AUTHORIZATION CRITERIA

Coverage of immune globulin intravenous products is recommended in those who meet the following criteria:

## **FDA-Approved Indications**

- **1. Primary Immunodeficiencies (PID).** Approve for the duration noted if the patient meets ONE of the following criteria (A <u>or</u> B):
  - A) Initial Therapy. Approve for 1 year if the patient meets BOTH of the following criteria (i and ii):
    - i. The patient meets ONE of the following (a, b, or c):
      - <u>Note</u>: An exception can be made for the impaired antibody response if, according to the prescriber, the delay caused by pre-vaccination and post-vaccination antibody measurement would be deleterious to the patient's health.
      - a) The patient has a diagnosis of congenital agammaglobulinemia, X-linked agammaglobulinemia, other agammaglobulinemia due to the absence of B-cells, Wiskott-Aldrich syndrome, ataxia telangiectasia, DiGeorge syndrome, severe combined immunodeficiency (SCID), Hyper-Immunoglobulin M (IgM) syndromes, an IgG level lower than 250 mg/dL, or a primary immune deficiency which has been confirmed by genetic or molecular testing; OR
      - b) The patient has a diagnosis of common variable immunodeficiency (CVID), unspecified hypogammaglobulinemia, or other immunodeficiencies with significant hypogammaglobulinemia and meets the following criteria (1 and either 2 or 3):
        - (1) The patient's pretreatment IgG level is below the normal range (age-adjusted and according to the normal reference range for the reporting laboratory); AND
        - (2) The patient has an impaired antibody response (i.e., failure to product antibodies to specific antigens); OR
        - (3) The patient has recurrent infections; OR
      - c) The patient has an IgG subclass deficiency, selective antibody deficiency (SAD), or another confirmed primary immunodeficiency and meets the following criteria (1 and 2):

- (1) The patient has an impaired antibody response (i.e., failure to product antibodies to specific antigens); AND
- (2) The patient has recurrent infections; AND
- **ii.** The medication is prescribed by or in consultation with one of the following physician specialists: an allergist/immunologist, immunologist, otolaryngologist (ear nose and throat [ENT] physician), pulmonologist, or infectious diseases physician who treats patients with primary immune deficiencies.
- **B)** Patient is Currently Receiving Immune Globulin. Approve for 1 year if the patient has been diagnosed with a primary immunodeficiency and is continuing to receive benefit from the product, according to the prescriber.

<u>Note</u>: Examples of continued benefit with the product includes increased IgG levels or prevention and/or controlling of infections.

**Dosing.** Approve the following dosing regimens (A, B, C, or D):

- A) An initial loading dose of 1 g/kg given intravenously may be given one time; OR
- **B)** 0.2 g/kg to 0.8 g/kg given intravenously once every 3 to 4 weeks; OR
- C) The dose and interval between doses has been adjusted based on clinical response as determined by the prescriber; OR
- **D)** Patients with primary immune deficiency and exposure to measles (previous exposure or risk of future measles exposure), the minimum dose has been determined by the prescriber.
- **2. B-Cell Chronic Lymphocytic Leukemia for Prevention of Bacterial Infections.** Approve for the duration noted if the patient meets ONE of the following (A or B):
  - A) <u>Initial Therapy</u>. Approve for 4 months if the patient meets the following criteria (i or ii <u>and</u> iii):
    - i. The patient has an immunoglobulin G (IgG) level < 500 mg/dL (5.0 g/L); OR
    - ii. The patient has a history of recurrent bacterial infections; AND
    - **iii.** The medication is prescribed by or in consultation with an oncologist, hematologist, or infectious diseases physician.
  - **B)** Patient is Currently Receiving Immune Globulin. Approve for 1 year if the patient has a positive response to therapy according to the prescriber.

<u>Note</u>: Examples of a positive response to therapy include maintaining an increased IgG trough level or a decrease in the number of infections.

- A. 0.4 g/kg given intravenously every 3 to 4 weeks; OR
- **B.** 0.3 g/kg to 0.5 g/kg given intravenously once monthly; OR
- C. The dose and interval have been adjusted to maintain a trough (pre-dose) IgG level of about 500 mg/dL and up to 700 mg/dL.
- **3.** Chronic Inflammatory Demyelinating Polyneuropathy (CIDP) or Polynadiculoneuropathy. Approve for the duration noted if the patient meets ONE of the following (A or B):
  - A) Initial Therapy. Approve for 3 months if the patient meets the following (i and ii):
    - i. Electrodiagnostic studies support the diagnosis of CIDP; AND
    - ii. The medication is prescribed by or in consultation with a neurologist.
  - B) Patient is Currently Receiving Immune Globulin. Approve for 1 year of therapy if the patient has a clinically significant improvement in neurologic symptoms, as determined by the prescriber.

    Note: Examples of improvement in neurologic symptoms include improvement in disability; nerve conduction study results improved or stabilized; physical examination show improvement in neurological symptoms, strength, and sensation. The patient may not have a full response after the initial 3 months, but there should be some response.

**Dosing.** Approve the following dosing regimens (A, B, or C):

- A) An initial loading dose of 2 g/kg given intravenously in divided doses over 2 to 4 consecutive days; OR
- **B)** A maintenance dose of 1 g/kg given intravenously over one day or divided into two doses of 0.5 g per kg given on 2 consecutive days. Either regimen is given every 3 weeks. OR
- C) The dose and interval are adjusted according to clinical response with a maximum dose per treatment course of 2 g/kg.
- **4. Immune Thrombocytopenia (ITP).** Approve for the duration noted if the patient meets ONE of the following (A, B, C, D, or E):

<u>Note</u>: The diagnosis of Immune Thrombocytopenia (ITP) encompasses previous nomenclature, such as Idiopathic Thrombocytopenia, Idiopathic Thrombocytopenic Purpura, Immune Thrombocytopenic Purpura.

- **A)** <u>Initial Therapy Adult ≥ 18 Years of Age</u>: Approve for 1 year if the patient meets the following criteria (i <u>and</u> ii):
  - i. The patients meets one of the following (a, b, or c):
    - a) The patient has tried a systemic corticosteroid (e.g., prednisone); OR
    - b) There is an urgent need to increase the platelet count quickly; OR
    - c) A systemic corticosteroid is contraindicated according to the prescriber; AND
  - ii. The medication is prescribed by or in consultation with a hematologist.
- **B)** <u>Initial Therapy Patient is < 18 Years of Age</u>. Approve for 1 year if prescribed by or in consultation with a hematologist.
- C) <u>Initial Therapy To Increase Platelet Count Before Surgical or Dental Procedures</u>. Approve for 1 month if prescribed by or in consultation with a hematologist.
- **D)** <u>Initial Therapy Pregnant Patient</u>. Approve for 6 months if prescribed by or in consultation with a hematologist.
- E) <u>Patient is Currently Receiving Immune Globulin</u>. Approve for 1 year if the patient has responded to therapy according to the prescriber.
  - <u>Note</u>: Examples of responding to therapy include increased platelet counts, absence of significant bleeding, or preventing hemorrhage/ensuring an adequate platelet count in order for delivery in pregnant patients.

**Dosing.** Approve the following dosing regimens (A or B):

- A) Up to 1 g/kg on 2 consecutive days OR up to 0.4 g/kg on 5 consecutive days (up to a total of 2 g per kg per treatment course); OR
- **B)** The dose and interval between doses has been adjusted according to the platelet count and/or to prevent significant bleeding as determined by the prescriber.
- **5. Kawasaki Disease.** Approve for 3 months if prescribed by or in consultation with a pediatric cardiologist or a pediatric infectious diseases physician.

**Dosing.** Approve up to 2 g/kg given intravenously as a single dose or over multiple consecutive days. The dose may be repeated if needed.

- **6. Multifocal Motor Neuropathy (Treatment).** Approve for the duration noted if the patient meets ONE of the following (A or B):
  - A) Initial Therapy. Approve for 6 months if prescribed by or in consultation with a neurologist.

**B)** Patient is Currently Receiving Immune Globulin. Approve for 1 year if the patient has improvement in neurologic symptoms as determined by the prescriber

<u>Note</u>: Examples of improvement in neurologic symptoms include improvement in disability; grip strength improvement (measured with dynamometer); physical examination show improvement in neurological symptoms and strength.

**Dosing.** Approve the following dosing regimens (A or B):

- A) Therapy is initiated with 2 g/kg given intravenously in divided doses over 2 to 5 consecutive days; OR
- **B)** One of the following maintenance dosing regimen is used (i, ii or iii):
  - i. 0.5 g/kg to 2.4 g/kg given intravenously every month; OR
  - ii. 1 g/kg given intravenously every 2 to 4 weeks; OR
  - iii. 2 g/kg given intravenously every 1 to 2 months.

## **Other Uses with Supportive Evidence**

7. **Antibody-Mediated Rejection (ABMR) in Transplantation**. Approve for 1 year if prescribed by or in consultation with a physician affiliated with a transplant center.

**Dosing.** Approve the following dosing regimens (A <u>or</u> B):

- **A)** Up to 2 g/kg as an intravenous infusion (as a single dose or divided in smaller doses [e.g., 400 mg per kg daily for 5 days]); OR
- **B)** The dosage is based on a transplant center's protocol.
- 8. Autoimmune Mucocutaneous Blistering Diseases (Pemphigus Vulgaris, Pemphigus Foliaceus, Bullous Pemphigoid, Mucous Membrane Pemphigoid [Cicatricial Pemphigoid], and Epidermolysis Bullosa Acquisita). Approve for the duration noted if the patient meets ONE of the following (A or B):
  - A) <u>Initial Therapy</u>. Approve for 6 months if the patient meets BOTH of the following criteria (i and ii):
    - i. The patient meets ONE of the following criteria (a, b, or c):
      - a) The patient has tried a systemic corticosteroid OR a corticosteroid is contraindicated according to the prescriber AND the patient has tried an immunosuppressive agent OR an immunosuppressive agent is contraindicated according to the prescriber; OR <a href="Note">Note</a>: Examples of immunosuppressive agents include azathioprine, cyclophosphamide, dapsone, methotrexate, cyclosporine, mycophenolate mofetil, and tacrolimus.
      - **b)** The patient has rapid, debilitating, progressive disease that cannot be controlled with a systemic corticosteroid and an immunosuppressive agent; OR
      - c) The disease is so serious that there is inadequate time for therapy with a systemic corticosteroid and an immunosuppressive agent to have a rapid enough effect; AND
    - ii. The medication is prescribed by or in consultation with a dermatologist.
  - **B)** Patient is Currently Receiving Immune Globulin. Approve for 1 year if the patient has responded to therapy according to the prescriber.

<u>Note</u>: Examples of response to therapy can include healing of previous lesions or fewer new lesions.

**Dosing.** Approve the following dosing regimens (A, B, or C):

A) 2 g/kg per cycle given intravenously every 3 to 4 weeks initially. This dose is divided over 2, 3, or 5 consecutive days; OR

- **B)** In patient with aggressive ocular disease, such as ocular cicatricial pemphigoid, 2 g/kg given intravenously may be given every 2 weeks in divided doses over 2, 3, or 5 consecutive days; OR
- C) The frequency is gradually being slowly decreased as the lesions resolve and heal.
- 9. Cytomegalovirus (CMV) Pneumonia in Patients with Cancer or Transplant-Related Infection. Approve for 2 months if prescribed by or in consultation with an oncologist, hematologist, or an infectious diseases physician.

**Dosing.** Approve 400 mg/kg given intravenously every other day for 3 to 5 doses.

- **10. Dermatomyositis or Polymyositis.** Approve for the duration noted if the patient meets ONE of the following (A or B):
  - A) <u>Initial Therapy</u>. Approve for 6 months if the patient meets ALL of the following criteria (i, ii, <u>and</u> iii):
    - i. The patient has tried a systemic corticosteroid OR a corticosteroid is contraindicated according to the prescriber; AND
    - ii. The patient has tried an immunosuppressive agent OR an immunosuppressive agent is contraindicated according to the prescriber; AND
      - Note: Examples of immunosuppressive agents include azathioprine, methotrexate, cyclosporine, cyclophosphamide, and mycophenolate mofetil.
    - iii. The IVIG is prescribed by or in consultation with a neurologist or a rheumatologist.
  - **B)** Patient is Currently Receiving Immune Globulin. Approve for 1 year if the patient has responded to therapy according to the prescriber.
    - <u>Note</u>: Examples of a response to therapy includes improved muscle strength, improved neuromuscular symptoms, and improved functional ability.

**Dosing.** Approve the following dosing regimens (A <u>or</u> B):

- A) 2 g/kg administered intravenously in divided doses over 2 to 5 consecutive days once monthly; OR
- B) 2 g/kg administered intravenously in divided doses over 2 to 5 consecutive days every 2 to 3 weeks.
- **11. Desensitization Therapy Prior to and Immediately after Transplantation.** Approve for 1 year if prescribed by or in consultation with a physician affiliated with a transplant center.

- **A)** Up to 2 g/kg per month administered intravenously (as a single dose or divided in smaller doses [e.g., 400 mg per kg daily for 5 days]); OR
- **B)** The dosage is based on a transplant center's protocol.
- **12. Guillain Barre Syndrome.** Approve for the duration noted if the patient meets ONE of the following (A or B):
  - **A)** <u>Initial Therapy</u>. Approve for 1 month (this is to provide one course of therapy [divided doses given over 2 to 5 days]) if the patient meets BOTH of the following criteria (i <u>and</u> ii):
    - i. The patient meets one of the following criteria (a or b):
      - **a)** The medication is initiated within 2 weeks and no longer than 4 weeks of onset of neuropathic symptoms; OR
        - <u>Note</u>: Examples of neuropathic symptoms include weakness, inability to stand or walk without assistance, and respiratory or bulbar weakness.
      - b) The patient has had a relapse (treatment related fluctuation), but had an initial response to IVIG; AND

- **ii.** The medication is prescribed by or in consultation with a neurologist or a specialist with experience in diagnosing and treating patients with Guillain Barre Syndrome.
- **B)** Patient is Currently Receiving Immune Globulin. Approve for 1 month (this is to provide a second course [divided doses given over 2 to 5 days]) about 3 weeks after the first course.

**Dosing.** Approve 2 g/kg administered intravenously in divided doses over 2 to 5 days.

13. Hematologic Neoplasm-Associated Hypogammaglobulinemia or Hypogammaglobulinemia after B-cell Targeted Therapies (Secondary Immunodeficiency [SID]). Approve for the duration noted if the patient meets ONE of the following (A or B):

<u>Note</u>: Some examples of B-cell targeted therapy are chimeric antigen receptor T cell therapy (e.g., Kymriah (tisagenlecleucel), a rituximab product, Besponsa (inotuzumab ozogamicin).

Note: Refer to B-Cell Chronic Lymphocytic Leukemia (CLL) for Prevention of Bacterial Infections and Multiple Myeloma for diagnosis-specific criteria.

- **A)** <u>Initial Therapy</u>. Approve for 6 months if the patient meets ALL of the following criteria (i, ii <u>and</u> iii):
  - i. The patient has an immunoglobulin G (IgG) level of < 500 mg/dL (5.0 g/L) [excluding paraprotein]; AND
  - **ii.** The patient has recurrent or severe bacterial infections or there is a high risk of infection according to the prescriber; AND
  - iii. The medication is being prescribed by or in consultation with an oncologist, hematologist, infectious disease physician, or immunologist.
- **B)** Patient is Currently Receiving Immune Globulin. Approve for 6 months if the patient is having a positive response to therapy according to the prescriber.

<u>Note</u>: Examples of a positive response to therapy include maintaining an increased IgG trough level or a decrease in the number of infections.

- A) 0.4 g/kg to 0.6 g/kg given intravenously once a month; OR
- **B)** 0.2 g/kg to 0.8 g/kg given intravenously once every 3 to 4 weeks; OR
- C) The dose and interval between doses has been adjusted based on clinical response as determined by the prescriber.
- **14.** Hematopoietic Cell Transplantation (HCT) to Prevent Bacterial Infection. Approve for the duration noted if the patient meets ONE of the following (A or B):
  - **A)** <u>Initial Therapy</u>. Approve for 3 months if the patient meets ALL of the following criteria (i, ii, iii, and iv):
    - i. The patient has had a HCT within the previous year; AND
    - ii. The patient has an immunoglobulin G (IgG) level < 500 mg/dL (5.0 g/L) OR the patient has multiple myeloma or malignant macroglobulinemia; AND
    - iii. According to the prescriber, the patient has a significant risk of having frequent and/or severe bacterial infections; AND
    - **iv.** The medication is prescribed by or in consultation with a hematologist, oncologist, or infectious diseases physician.
  - **B)** Patient is Currently Receiving Immune Globulin. Approve for 6 months if the patient is having a positive response to therapy according to the prescriber.

Note: Examples of a positive response to therapy include maintaining an increased IgG trough level, controlling the number of infections, or a decrease in the number of infections.

**Dosing.** Approve the following dosing regimens (A, B, or C):

- A) During the first 100 days after HCT, the patient meets ONE of the following (i or ii):
  - i. Adults and adolescents: 0.5 g/kg per week given intravenously and the dose is adjusted to maintain trough (pre-dose) serum IgG greater than 400 to 500 mg per dL; OR
  - **ii.** Pediatric patient with allogeneic HCT: 0.4 g/kg per month given intravenously and the dose is adjusted to keep IgG greater than 400 mg/dL; OR
- **B)** Greater than 100 days post-HCT, the dose is 0.5 g/kg given intravenously every 3 to 4 weeks, and the dose is adjusted to keep IgG greater than 400 mg/dL; OR
- C) The dosage is based on a transplant center's protocol.
- **15. Human Immunodeficiency Virus (HIV)-Associated Thrombocytopenia.** Approve for 1 month if the patient meets the following criteria (A and B):
  - A) The patient meets one of the following criteria (i or ii):
    - i. The patient is receiving combination antiretroviral therapy for their HIV infection; OR
    - ii. The patient has clinically significant bleeding complications according to the prescriber; AND
  - **B)** The medication is prescribed by or in consultation with an infectious diseases specialist or a physician who specializes in the treatment of HIV infection.

**Dosing.** Approve the following dosing regimens (A or B):

- A) Up to 2 g/kg given intravenously in divided doses over 2 to 5 days; OR
- **B)** Up to 1 g/kg one time given intravenously for platelet counts less than  $20 \times 10^9$ /L or 20,000/ $\mu$ L to  $30 \times 10^9$ /L or 30,000/ $\mu$ L per mm<sup>3</sup> and this dose is repeated once weekly if needed.
- **16.** Human Immunodeficiency Virus (HIV)-Infected Infants and Children to Prevent Recurrent Bacterial Infections. Approve for the duration noted if the patient meets ONE of the following (A or B):
  - A) Initial Therapy. Approve for 6 months if the patient meets the following criteria (i, ii, iii, and iv):
    - i. The patient is < 18 years of age; AND
    - ii. The patient is receiving combination antiretroviral therapy; AND
    - iii. The patient has ONE of the following (a, b, or c):
      - a) Hypogammaglobulinemia (i.e., IgG < 400 mg/dL [4.0 g/L]); OR
      - b) Functional antibody deficiency is demonstrated by poor specific antibody titers (that is, the patient does not develop specific antibody responses against protein and polysaccharide antigens); OR
      - c) Functional antibody deficiency is demonstrated by the patient having recurrent (two or more per year), serious bacterial infections (e.g., bacteremia, meningitis, pneumonia) despite administration of combination antiretroviral therapy and appropriate antimicrobial prophylaxis; AND
    - iv. The medication is prescribed by or in consultation with an infectious diseases specialist or an immunologist.
  - **B)** <u>Patient is Currently Receiving Immune Globulin</u>. Approve for 1 year if the frequency and/or severity of infections have decreased according to the prescriber.

- A) The dose is 0.4 g/kg given intravenously infusion every 2 to 4 weeks; OR
- **B)** The dose and interval are adjusted according to clinical effectiveness.

<u>Note</u>: Examples of adjusting according to clinical effectiveness may include the need to increase the dose or frequency based on frequency or severity of infections, hospitalizations, days of school or work missed, failure to thrive.

**17. Immunotherapy-Related Toxicities Associated with Checkpoint Inhibitor Therapy.** Approve for the duration noted if the patient meets ONE of the following (A or B):

<u>Note</u>: Examples of checkpoint inhibitors are Keytruda (pembrolizumab), Opdivo (nivolumab), Yervoy (ipilimumab), Tecentriq (atezolizumab), Bavencio (avelumab), Imfinzi (durvalumab).

- A) Initial Therapy. Approve for 1 month if the patient meets the following criteria (i, ii, or iii):
  - i. The patient has tried a systemic corticosteroid and has not adequately responded to therapy; OR
    - <u>Note</u>: Examples of systemic corticosteroids include prednisone, methylprednisolone.
  - ii. The medication is being started with a systemic corticosteroid; OR
  - iii. A corticosteroid is contraindicated per the prescriber.
- **B)** Patient is Currently Receiving Immune Globulin. Approve for 6 months if the patient is having a positive response to therapy, as determined by the prescriber, and the prescriber has determined extended therapy is required.

**Dosing.** Approve the following dosing regimens (A, B, or C):

- A) Up to 0.4 g/kg given intravenously daily for 5 days; OR
- **B)** Up to 2 g/kg given intravenously over 2 to 5 days; OR
- C) The dose and interval between doses has been adjusted based on clinical response as determined by the prescriber.
- **18.** Lambert-Eaton Myasthenic Syndrome (LEMS). Approve for the duration noted if the patient meets ONE of the following (A or B):
  - **A)** <u>Initial Therapy</u>. Approve for 1 month (to allow for one course of therapy [divided doses given over 2 to 5 days]) if the patient meets the following criteria (i, ii, <u>and</u> iii):
    - i. The patient is having refractory weakness after symptomatic treatment of LEMS with an amifampridine product (e.g., Firdapse, Ruzurgi), guanidine, or pyridostigmine; AND
    - ii. The patient meets ONE of the following (a or b):
      - a) The patient has paraneoplastic LEMS; OR
      - b) The patient has <u>non</u>-paraneoplastic LEMS AND has tried a systemic corticosteroid (e.g., prednisone) or another immunosuppressive agent (e.g., azathioprine), or has a contraindication to corticosteroids and/or immunosuppressive agents, according to the prescriber; AND
    - iii. The medication is prescribed by or in consultation with a neurologist.
  - **B)** Patient is Currently Receiving Immune Globulin. Approve for 1 year if the patient has a response or continued effectiveness, according to the prescriber.
    - <u>Note</u>: Examples of a response to therapy include improved muscle strength or other clinical response.

- A) Up to 2 g per kg given intravenously in divided doses over 2 to 5 consecutive days; OR
- **B)** Maintenance therapy every 4 weeks with up to 2 g/kg with the dose being adjusted based on clinical symptoms.

- **19. Multiple Myeloma.** Approve for the duration noted if the patient meets ONE of the following (A <u>or</u> B):
  - A) Initial Therapy. Approve for 6 months if the patient meets the following criteria (i and ii):
    - i. The patient has severe recurrent bacterial infections according to the prescriber; AND
    - **ii.** The medication is prescribed by or in consultation with a hematologist, oncologist, or infectious diseases specialist.
  - **B)** Patient is Currently Receiving Immune Globulin. Approve for 1 year.

**Dosing.** Approve 0.4 g/kg to 0.5 g/kg given intravenously every 3 to 4 weeks.

- **20.** Multiple Sclerosis (MS), Acute Severe Exacerbation or Relapses. Approve for 1 month (this is to provide one course of therapy [either a single dose or in divided doses given over 1 to 5 days]) if the patient meets BOTH of the following criteria (A and B):
  - A) The patient meets one of the following criteria (i or ii):
    - i. The patient has either not responded to OR has had a significant adverse reaction with systemic corticosteroids (e.g., methylprednisolone sodium succinate injection) OR plasma exchange; OR
      - <u>Note</u>: A trial of Acthar<sup>®</sup> H.P. gel [repository corticotropin injection; adrenocorticotropic hormone, ACTH] would also count toward meeting this requirement.
    - ii. A systemic corticosteroid is contraindicated, according to the prescriber; AND
  - **B)** The medication is prescribed by or in consultation with a neurologist or a physician who specializes in the treatment of MS.

- A) A single 1 g/kg given intravenously; OR
- **B)** 0.4 g/kg per day IV infusion for 5 consecutive days.
- 21. Multiple Sclerosis (MS), Post-Partum to Prevent Relapses. Approve for the duration noted if the patient meets ONE of the following (A or B):
  - A) <u>Initial Therapy</u>. Approve for 6 months if the patient meets the following criteria (i and ii):
    - **i.** The patient is <u>not</u> currently receiving disease modifying therapy (DMT) for MS to prevent relapses; AND
      - Note: Disease modifying therapy can include: Avonex<sup>®</sup> (interferon beta-1a injection, IM), Plegridy<sup>®</sup> (peginterferon beta-1a SC injection), Rebif<sup>®</sup> (interferon beta-1a injection, SC], Betaseron<sup>®</sup>/Extavia<sup>®</sup> (interferon beta-1b injection), Copaxone<sup>®</sup>/Glatopa<sup>™</sup> (glatiramer acetate injection, SC), Gilenya<sup>®</sup> (fingolimod capsules), Lemtrada<sup>™</sup> (alemtuzumab injection for IV use), Aubagio<sup>®</sup> (teriflunomide tablets), Mavenclad<sup>®</sup> (cladribine tablets), Mayzent<sup>®</sup> (siponimoid tablets), Tecfidera<sup>®</sup> (dimethyl fumarate capsules), Vumerity<sup>®</sup> (diroxime fumarate capsules), Zeposia<sup>®</sup> (ozanimod capsules), Tysabri<sup>®</sup> (natalizumab injection), Novantrone<sup>®</sup> (mitoxantrone injection).
    - **ii.** The medication is prescribed by or in consultation with a neurologist or a physician who specializes in the treatment of MS.
  - **B)** Patient is Currently Receiving Immune Globulin. Approve for a second 6 months of therapy if the patient is not taking a disease modifying therapy (DMT) for MS.
    - <u>Note</u>: Disease modifying therapy can include: Avonex (interferon beta-1a injection, IM), Plegridy (peginterferon beta-1a SC injection), Rebif (interferon beta-1a injection, SC), Betaseron/Extavia (interferon beta-1b injection), Copaxone/Glatopa (glatiramer acetate injection, SC), Gilenya (fingolimod capsules), Lemtrada (alemtuzumab injection for IV use), Aubagio (teriflunomide tablets), Mayenclad (cladribine tablets), Mayzent (siponimoid tablets), Tecfidera (dimethyl

fumarate capsules), Vumerity (diroximel fumarate capsules), Zeposia (ozanimod capsules), Tysabri (natalizumab injection), Novantrone (mitoxantrone injection).

**Dosing.** Approve the following dosing regimens (A, B, or C):

- A) 0.15 g/kg given intravenously on Day 1 post-partum; OR
- **B)** 0.9 g/kg given intravenously in 3 divided doses over 3 days (post-partum Day 1: 0.45 g per kg, Day 2: 0.3 g per kg, Day 3: 0.15 g per kg); OR
- C) Initial doses given post-partum as in A) or B), and then 0.15 g/kg given intravenously every 4 weeks for up to 5 additional doses (6 months of therapy).
- **22. Myasthenia Gravis.** Approve for the duration noted if the patient meets ONE of the following (A, B, or C):
  - **A)** <u>Initial Therapy for Short-Term (Acute) Use</u>. Approve for 5 days (to allow for one course of therapy to be given in divided doses over 2 to 5 consecutive days) if the patient meets the following (i <u>and</u> ii):
    - i. The patient meets ONE of the following conditions (a, b, c,  $\underline{\text{or}}$  d):
      - a) The patient has an exacerbation of myasthenia gravis; OR
      - b) The patient requires stabilization of myasthenia gravis before surgery; OR
      - c) The patient has been started on an immunosuppressive drug and is waiting for full effect; OR
        - <u>Note</u>: Examples of immunosuppressive drugs include azathioprine, cyclosporine, cyclophosphamide, mycophenolate mofetil, methotrexate, or tacrolimus.
      - **d)** The patient is starting therapy with a corticosteroid and IVIG is being given to prevent or minimize exacerbations; AND
    - ii. The medication is prescribed by or in consultation with a neurologist.
  - B) <u>Initial Therapy for Maintenance</u>. Approve for 1 year if the patient meets ALL of the following (i, ii, iii, and iv):
    - i. The patient has refractory myasthenia gravis; AND
    - ii. The patient has tried pyridostigmine; AND
    - iii. The patient has tried immunosuppressive therapy with at least one of the following agents: azathioprine, cyclosporine, cyclophosphamide, mycophenolate mofetil, methotrexate, tacrolimus AND has had an inadequate response; AND
    - iv. The medication is prescribed by or in consultation with a neurologist.
  - C) <u>Patient is Currently Receiving Immune Globulin for Maintenance Therapy</u>. Approve for 1 year if the patient is responding according to the prescriber.

**Dosing.** Approve the following dosing regimens (A, B, or C):

- A) Short-term use: 2 g/kg given intravenously in divided doses over 2 to 5 consecutive days; OR
- B) Maintenance therapy: up to 0.4 to 1 g/kg given intravenously every 4 weeks; OR
- C) The dose and interval between doses has been adjusted based on clinical response as determined by the prescriber.
- **23.** Passive Immunization for Measles (Post-Exposure Prophylaxis). Approve for 1 day (to allow for a single dose) if the patient meets ONE of the following (A or B):

Note: For patients with primary immune deficiency, see criteria for PID.

- A) The patient is pregnant and meets the following criteria (i and ii):
  - i. The patient has been exposed to measles and the medication will be given within 6 days of exposure; AND

- ii. The patient does not have evidence of immunity to measles (i.e., the patient does not have a history of the disease or age-appropriate vaccination); OR
- B) The patient meets ALL of the following criteria (i, ii and iii):
  - i. The patient is severely immunocompromised; AND
    - <u>Note</u>: Examples of severe immunocompromised status include patients with bone marrow transplant, graft-versus-host disease (GVHD), acute lymphoblastic leukemia (ALL), acquired immunodeficiency syndrome (AIDS), or human immunodeficiency virus (HIV)-infected patients.
  - ii. The patient has been exposed to measles; AND
  - iii. The medication will be given within 6 days of exposure.

**Dosing.** Approve the following dosing regimen: 0.4 g per kg IV infusion administered one time as soon as possible after exposure.

- **24. Passive Immunization for Varicella (Chickenpox) [Post-Exposure Prophylaxis].** Approve for 1 day (to allow for a single dose) if the patient meets ONE of the following (A or B):
  - A) The patient is HIV-infected and meets the following criteria (i, ii, and iii):
    - i. VariZIG® (varicella zoster immune globulin [human] for IM injection) is not available; AND
    - **ii.** The patient does not have evidence of immunity to varicella (i.e., patient does not have a history of the disease or age-appropriate vaccination); AND
    - iii. The medication is prescribed by or in consultation with an infectious diseases specialist or an immunologist; OR
  - **B)** The patient is <u>not</u> HIV-infected and meets the following criteria (i, ii, iii, <u>and</u> iv):
    - i. VariZIG (varicella zoster immune globulin [human] for IM injection) is not available; AND
    - **ii.** The patient does not have evidence of immunity to varicella (i.e., patient does not have a history of the disease or age-appropriate vaccination); AND
    - iii. The patient meets one of the following criteria (a or b):
      - a) The patient is immune compromised; OR
      - **b)** The patient is pregnant; AND
    - iv. The medication is prescribed by or in consultation with an infectious diseases specialist or immunologist.

**Dosing.** Approve 0.4 g/kg given intravenously one time.

- 25. Pure Red Blood Cell Aplasia (PRCA) Secondary to Chronic [Persistent] Parvovirus B19 Infection. Approve for the duration noted if the patient meets ONE of the following (A or B):
  - A) <u>Initial Therapy</u>. Approve for 2 months if the patient meets ALL of the following criteria (i, ii, <u>and iii)</u>:
    - i. The patient has chronic immunodeficiency condition; AND Note: Examples of a chronic immunodeficiency condition include patients with HIV infection, solid organ transplants (e.g., renal, liver), chemotherapy for hematologic malignancy.
    - **ii.** The patient has clinically significant anemia as determined by the prescriber OR the patient is transfusion dependent; AND
    - iii. The medication is prescribed by or in consultation with an infectious diseases specialist, immunologist, hematologist, or transplant specialist.
  - **B)** Patient is Currently Receiving Immune Globulin. Approve for 3 months in patients who responded with an increase in hemoglobin to previous IVIG therapy but relapse when off IVIG or in patients who respond and require maintenance therapy to prevent relapse.

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  - A) 2 g/kg given intravenously over a period of 2 to 5 consecutive days (one course) for up to two courses; OR
  - **B)** 0.4 g/kg to 0.5 g/kg given intravenously daily for 5 days; OR
  - C) 0.4 g/kg given intravenously once every 4 weeks.
- **26.** Pure Red Blood Cell Aplasia (PRCA), Immunologic Subtype. Approve for the duration noted if the patient meets ONE of the following (A or B):
  - A) <u>Initial Therapy</u>. Approve for 1 month if the patient meets ALL of the following criteria (i, ii, <u>and</u> iii):
    - i. The patient has tried a systemic corticosteroid (e.g., prednisone); AND
    - ii. The patient has tried either cyclophosphamide OR cyclosporine; AND
    - iii. The medication is prescribed by or in consultation with an infectious diseases specialist, immunologist, hematologist, or transplant specialist.
  - **B)** Patient is Currently Receiving Immune Globulin. Approve for 1 month if the patient has responded with an increase in hemoglobin and reticulocytossis according to the prescriber.

**Dosing.** Approve 0.5 g/kg given intravenously for 4 weeks.

- **27. Stiff-Person Syndrome (Moersch-Woltman Syndrome).** Approve for the duration noted if the patient meets ONE of the following (A or B):
  - A) Initial Therapy. Approve for 3 months if the patient meets the following criteria (i and ii):
    - i. The patient meets ONE of the following criteria (a or b):
      - a) The patient has tried a benzodiazepine (e.g., diazepam) OR baclofen; OR
      - **b)** The patient has contraindications to both a benzodiazepine AND baclofen according to the prescriber; AND
    - ii. The medication is prescribed by or in consultation with a neurologist.
  - **B)** Patient is Currently Receiving Immune Globulin. Approve for 1 year if the patient has responded to therapy according to the prescriber.

<u>Note</u>: Examples of response to therapy includes reduced stiffness or frequency of spasms, ability to walk unassisted.

**Dosing.** Approve the following dosing regimens (A or B):

- A) 2 g/kg given intravenously over a period of 2 to 5 consecutive days every month; OR
- **B)** For maintenance therapy, the dose is adjusted to provide the minimum effective dosage of IVIG. Maximum dose is 2 g/kg given intravenously.
- **28.** Thrombocytopenia, Feto-neonatal Alloimmune. Approve for 6 months if the pregnant mother or newborn patient is prescribed the medication by or in consultation with a hematologist or an obstetrician.

**Dosing.** Approve the following dosing regimens (A, B, C, or D):

- A) For the mother: 1 g/kg given intravenously every week; OR
- **B)** For the mother: 2 g/kg given intravenously every week; OR
- C) For the mother: 1 g/kg given intravenously twice weekly; OR
- **D)** For the newborn: 1 g/kg to 2 g/kg given intravenously dosed per the prescriber.

## CONDITIONS NOT RECOMMENDED FOR APPROVAL

Coverage of immune globulin intravenous is not recommended in the following situations:

- 1. Adrenoleukodystrophy. Evidence does not support IVIG use. 18
- 2. Alzheimer's Disease (AD). In one multicenter, double-blind, Phase III, placebo-controlled trial, 390 patients with mild to moderate AD were randomized to therapy with IVIG 400 mg/kg or 200 mg/kg or to placebo given every 2 weeks for 18 months. There was no statistically significant difference in the rate of cognitive decline when compared to placebo (mean 7.4 in the 400 mg/kg group; 8.9 in the 200 mg/kg group; 8.4 in the placebo group). There was not a statistically significant change in functional ability when compared to placebo (mean of -11.4 in the 400 mg/kg group; -12.4 in the 200 mg/kg group; -11.4 in the placebo group). Large placebo-controlled trials with a longer observation period are needed to establish efficacy, determine the optimal dosing regimen, and to confirm the safety of IVIG in the general AD population. <sup>52,53</sup>
- 3. Amyotrophic Lateral Sclerosis. There is insufficient evidence to recommend IVIG. 18
- 4. Anemia, Aplastic. Evidence does not support IVIG use.<sup>22</sup>
- **5. Asthma.** Global Initiative for Asthma (GINA) guidelines for asthma management and prevention do not include recommendations for use of IVIG.<sup>54</sup>
- **6. Atopic Dermatitis.** Limited data exist to determine the utility of rituximab, omalizumab, intravenous immunoglobulin, and oral calcineurin inhibitors in the management of atopic dermatitis. <sup>55</sup>
- 7. Autism. Evidence does not support IVIG use. 18 Well controlled, double-blind trials are needed.
- **8.** Chronic Fatigue Syndrome. Evidence does not support IVIG use. <sup>56</sup> One randomized, placebocontrolled trial did not find benefits in quality of life measures nor the Profile of Mood States for IVIG. <sup>56</sup> Although scores were improved in IVIG and placebo treatment groups, no significant between group difference was demonstrated.
- 9. Complex Regional Pain Syndrome (Reflex Sympathetic Dystrophy). There is insufficient evidence to recommend IVIG. In one single center study a single dose of 0.5 g of IVIG per kg produced a decrease in pain intensity by 50% or more compared to placebo in 3 of 12 patients.<sup>57</sup> In a randomized, placebo-controlled, multicenter trial, low-dose immunoglobulin treatment for 6 weeks was not effective in relieving pain in patients with moderate-to-severe complex regional pain syndrome.<sup>58</sup> Well-controlled large-scale trials are needed.
- 10. Crohn's Disease. There is insufficient evidence to recommend IVIG. In one single center case collection report, 19 patients with acute Crohn's disease (Crohn's Disease Activity Index [CDAI] 284.1 ± 149.8) who were resistant to steroids received IVIG daily for 7 to 10 days.<sup>59</sup> Four weeks after completing therapy, 14 patients were in clinical remission (CDAI < 150). Spontaneous remissions cannot be excluded. Prospective, randomized, placebo-controlled trials are needed to determine if IVIG has a role in the treatment of Crohn's disease.
- 11. Cystic Fibrosis. There is insufficient evidence to recommend IVIG. In one single-center retrospective case review of 16 children with cystic fibrosis, IVIG was reportedly effective.<sup>60</sup> Well-designed, controlled trials are needed.<sup>18</sup>

- **12. Diabetes Mellitus, Immunotherapy.** Evidence does not support IVIG use. <sup>18,62,63</sup> In one 2-year randomized controlled trial, IVIG was given every 2 months to children and adults with type 1 diabetes. <sup>62</sup> No beneficial effect was shown with IVIG compared with control and the authors concluded that IVIG therapy is unlikely to be a viable option for immunotherapy.
- 13. Fibromyalgia Syndrome. There is insufficient evidence to recommend IVIG. In one open-label single center study, 15 patients with fibromyalgia syndrome and distal demyelinating polyneuropathy received IVIG 400 mg/kg given daily for 5 days.<sup>64</sup> Pain, tenderness, and strength reportedly improved. These patients were not diagnosed with CIPD. Double-blind, placebo-controlled trials are needed to determine if IVIG is effective in fibromyalgia syndrome.
- **14. Heart Failure, Chronic.** There is insufficient evidence to recommend IVIG. In one randomized, placebo-controlled trial, IVIG given monthly for 26 weeks improved left ventricular ejection fraction (LVEF) in patients with chronic heart failure and LVEF < 40%. IVIG, given for 2 consecutive days with no maintenance IVIG, did not improve LVEF more than placebo. Larger trials are needed in well-defined populations (cause and severity) to determine if IVIG has a role in the treatment of heart failure.
- **15.** Human Immunodeficiency Virus (HIV) Infection, Adults, for Prophylaxis of Infections. IVIG is not listed in the recommendations for post exposure prophylaxis for occupational exposures to HIV; antiretroviral therapy should be used in certain circumstances after exposure to HIV infection.<sup>67</sup>
- **16. In Vitro Fertilization (IVF).** There is insufficient evidence to recommend IVIG administration as part of IVF outcomes.<sup>68</sup>
- 17. Polyneuropathy, Organomegaly, Endocrinopathy, Monoclonal Gammopathy, and Skin Changes (POEMS) Syndrome. Evidence does not support IVIG use.<sup>18</sup>
- **18. Post-Polio Syndrome.** There is insufficient evidence to recommend IVIG. Post-polio syndrome is characterized by new muscle weakness, atrophy, fatigue, and pain developing several years after the acute polio. A 2015 Cochrane Review concluded there was moderate- and low-quality evidence that IVIG has no beneficial effect on activity limitations in the short term and long term, respectively. <sup>69</sup> The evidence for effectiveness of IVIG on muscle strength is inconsistent.
- **19. Recurrent Spontaneous Pregnancy Loss (RSPL) [Including Antiphospholipid Antibody-Positive Patients].** Evidence does not support IVIG use. <sup>70-73</sup> In one double-blind pilot study, IVIG did not improve obstetric or neonatal outcomes beyond those achieved with a heparin and low-dose aspirin regimen. <sup>70</sup> In another double-blind trial (n =82 of whom 47 had an index pregnancy) live birth rates did not differ significantly between IVIG-treated and placebo-treated women (70% vs. 63%; P = 0.76; odds ratio [OR]: 1.37 [95% CI: 0.41, 4.61]). <sup>71</sup> The American Society for Reproductive Medicine practice committee states that several trials and meta-analyses concluded that IVIG is ineffective for primary recurrent pregnancy loss and this treatment is not recommended. <sup>73</sup>
- **20.** Selective Immune Globulin A (IgA) Deficiency as the Sole Immunologic Abnormality. Evidence does not support use of IVIG.<sup>14,18</sup> Selective IgA deficiency is defined as a serum IgA level less than 0.07 g/L, but normal serum IgG and IgM levels in a patient greater than 4 years of age in whom other causes of hypogammaglobulinemia have been excluded.<sup>14</sup> Selective IgA deficiency may co-exist in some patients with poor specific IgG antibody production, with or without IgG2 subclass

deficiency. <sup>14,18</sup> Some of these patients with a concomitant specific antibody defect might benefit from therapy with IVIG.

**21.** Coverage is not recommended for circumstances not listed in the Recommended Authorization Criteria. Criteria will be updated as new published data are available.

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### **HISTORY**

Type of Revision	Summary of Changes	Review Date
Annual Revision	Criteria created for the following diagnoses: Antibody-Mediated Rejection (ABMR) in Solid Organ Transplant (e.g., Kidney, Heart, Lung, Liver), Hematologic Neoplasm-	07/11/2018

		1
	<ul> <li>Associated Hypogammaglobulinemia (Secondary Immunodeficiency [SID]), and Immunotherapy-Related Toxicities Associated with Checkpoint Inhibitor Therapy.</li> <li>B-Cell Chronic Lymphocytic Leukemia (CLL) for Prevention of Bacterial Infections-updated criteria to IgG level below 500 mg/dL OR a history of recurrent bacterial infections. Previously both were required.</li> <li>Cytomegalovirus (CMV) Interstitial Pneumonia in Patients with Hematopoietic Cell Transplantation (HCT) updated to Cytomegalovirus (CMV) Interstitial Pneumonia in Patients with Cancer or Transplant-Related Infection.</li> <li>Removed the following conditions not recommended for approval: Cytomegalovirus (CMV) Infection, Preemptive Therapy for CMV Infection or Treatment of CMV Disease, in Allogeneic Hematopoietic Cell (HCT) Recipients and Cytomegalovirus (CMV) Infections, Prophylaxis or Treatment in Solid Organ Transplantation. Updated the condition not recommended for approval Cytomegalovirus (CMV) Disease Prophylaxis in Hematopoietic Cell Transplantation (HCT) Recipients to include Solid Organ Transplantation.</li> <li>Removed specific age limit in the following diagnosis: Passive Immunization for Varicella (Chickenpox) [Post-Exposure Prophylaxis]</li> <li>Updated age to &lt; 18 years old (previously &lt; 13 years of age) in the following diagnosis: Human Immunodeficiency Virus (HIV) Infected Infants and Children to</li> </ul>	
0.11	Prevent Recurrent Bacterial Infections.	07/04/0010
Selected Revision	The Policy Statement was revised from, the requirement that the patient meet the criteria for coverage of the requested medication applies to the initial authorization only, to the requirement that the patient meet the criteria for coverage of the requested medication applies to patients not currently taking the requested medication. Also added: For patients already on the requested medication, follow the directions under the extended approval section.	07/24/2018
Selected	Added Panzyga to the policy	10/29/2018
Revision Selected		01/16/2019
Revision	<ul> <li>The duration of therapy was updated in the criteria section throughout the policy to align with the PA policy. Updated formatting of the policy by removing extended approval section and placing within the criteria (under patients already started on therapy) to align with the PA policy. Removed duration of therapy and labs/diagnostics section. The policy statement was updated.</li> <li>Immunodeficiency, Primary Humoral (Treatment): For the unspecified hypogammaglobulinemia diagnosis in the criterion that requires that the patient has markedly impaired antibody response to protein testing with polysaccharide antigen (pneumococcus), the option of "OR according to the prescribing physician the delay caused by pre-vaccination and post-vaccination antibody measurement would be deleterious to the patient's health" was added.</li> </ul>	
Annual Revision	<ul> <li>Asceniv was added to the policy with the same criteria as all other immune globulin products.</li> <li>Immunodeficiency, Primary Humoral (Treatment) was updated to Primary Immunodeficiencies (PID). Criteria for PID was updated to the following: approval if (along with prescribing by a physician specialist) the patient has a diagnosis of congenital agammaglobulinemia, X-linked agammaglobulinemia, other agammaglobulinemia due to the absence of B-cells, Wiskott-Aldrich syndrome, ataxia telangiectasia, DiGeorge syndrome, severe combined immunodeficiency (SCID), Hyper-Immunoglobulin M (IgM) syndrome, an IgG level lower than 250 mg/dL, or a primary immune deficiency which has been confirmed by genetic or molecular testing. For a diagnosis of common variable immunodeficiency (CVID), unspecified hypogammaglobulinemia, or other immunodeficiencies with significant hypogammaglobulinemia, approval if (along with prescribing physician specialist) the patients pretreatment IgG level is below the normal range AND either an impaired antibody response or recurrent infections. For a diagnosis of IgG subclass deficiency or selective antibody deficiency, approval if (along with prescribing physician specialist) the patient has an impaired antibody response and has recurrent infections. Criteria for patients currently receiving intravenous immune globulin for this diagnosis were updated to approve if the patient has been diagnosed with a primary immunodeficiency and is continuing to receive benefit from the product.</li> </ul>	07/31/2019

- Dosing criteria was added if the patient receives a dose of less than 0.53 g of IVIG per kg for measles prophylaxis in patients with PID.
- Chronic Inflammatory Demyelinating Polyneuropathy or Polyradiculoneuropathy (CIDP): the criterion, electrodiagnostic studies to support the diagnosis of CIDP, was added.
- CIDP dosing- the wording was updated to "the dose and interval are adjusted according to clinical response."
- Hematologic Neoplasm-Associated Hypogammaglobulinemia or Hyopgammaglobulinemia after B-cell Targeted Therapies (Secondary Immunodeficiency [SID]) was changed to as listed; previously, listed as "Hematologic Neoplasm-Associated Hypogammaglobulinemia (Secondary Immunodeficiency [SID]). An immunologist physician was added to the list of physician specialists.
- Desensitization Therapy Prior to and Immediately after Solid Organ Transplantation: added the wording "up to" in the dosing section.
- Immunotherapy-Related Toxicities Associated with Checkpoint Inhibitor Therapy: added the criteria or IVIG is being started with a systemic corticosteroid for Initial Therapy.
- Lambert-Eaton Myasthenic Syndrome (LEMS): The approval condition was changed to as listed; previously, listed as "Lambert-Eaton Myasthenic Syndrome, Treatment". Criteria regarding the patient having refractory weakness after symptomatic treatment of LEMS with an amifampridine product (e.g., Firdapse, Ruzurgi), guanidine, or pyridostigmine was added. Criteria regarding non-paraneoplastic LEMS was updated to having tried a systemic corticosteroid (e.g., prednisone) or another immunosuppressive agent (e.g., azathioprine), or has a contraindication to corticosteroids and/or immunosuppressive agents, according to the prescriber.
- Multiple Myeloma: the following criteria was removed "the patient has stable (plateau phase) disease (> 3 months from diagnosis).
- Multiple Sclerosis (MS), Acute Severe Exacerbation was updated to include the
  wording "or relapses." Acthar HP gel was removed as one of the required alternatives.
  Criteria was updated as to only a corticosteroid would require to be contraindicated,
  according to the prescriber.
- Multiple Sclerosis (MS), Post-Partum to Prevent Relapses: Mavenclad and Mayzent were added as disease modifying therapy.
- Thrombocytopenia, Fetal Alloimmune, was updated to include not only the pregnant patient, but the newborn as well. Criteria that the patient is pregnant and receiving antenatal therapy was removed. Also added dosing for the newborn.
- Wording in each applicable criteria that referenced "determined by the prescribing physician" was changed to "determined by the prescriber."
- Conditions Not Recommended for Approval: The following were removed from the list: Cytomegalovirus Disease Prophylaxis in Hematopoietic Cell Transplantation Recipients or in Solid Organ Transplantation; Epilepsy, Pediatric Intractable; Graft Versus Host Disease, Acute (Within First 100 days After Hematopoietic Cell Transplantation); Graft Versus Host Disease, Chronic, Prevention in Hematopoietic Cell Transplantation (HCT) Recipient; Hematopoietic Cell Transplantation in Allogeneic Recipients from Human Leukocyte Antigen Identical Sibling Donors; Immune Globulin M Paraprotenicemic Demyelinating Neuropathy (or Other Paraproteinemic Demyelinating Neuropathies); Infantile Spasms (West Syndrome); Marburg Variant Multiple Sclerosis; Multiple Sclerosis, Primary Progressive; Multiple Sclerosis, Secondary Progressive; Multiple Sclerosis, Relapsing Remitting for the Prevention of Relapses; Nephropathy, Membranous; Systemic Lupus Erythematosus; Systemic Sclerosis (Scleroderma); and Thrombocytopenia, Heparin-Induced. Polyneuropathy was added to the Condition of Organomegaly, Endocrinopathy, Monoclonal Gammopathy, and Skin Changes (POEMS Syndrome).

Annual Revision

Primary Immunodeficiencies (PID): In Initial Therapy, the wording of "or another confirmed primary immunodeficiency" was added. For Continuation Therapy, the examples of benefits from the product were moved to a Note and the wording "according to the prescriber" was added. In **Dosing**, the examples of clinical response were removed. In Dosing related to patients with primary immunodeficiency and exposure to measles, the wording of "previous exposure or risk of future measles

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exposure" was added. The specific measles dosing regimens were removed and the wording that the minimum dose has been determined by the prescriber was added.

**B-Cell Chronic Lymphocytic Leukemia for Prevention of Bacterial Infections:** Added "having a positive response to therapy according to the prescriber" and placed current examples of a positive response as a note.

Chronic Inflammatory Demyelinating Polyneuropathy (CIDP) or Polyradiculoneuropathy: For Continuation Therapy, moved examples of a clinically significant improvement to a note. Removed a neurologist or in consultation with a neurologist for continuation criteria.

(Immune) Thrombocytopenic Purpura (ITP) or Idiopathic Thrombocytopenia [IT] Acute and Chronic was updated to Immune Thrombocytopenia (ITP). The following note was added: The diagnosis of Immune Thrombocytopenia (ITP) encompasses previous nomenclature, such as Idiopathic Thrombocytopenia, Idiopathic Thrombocytopenic Purpura, Immune Thrombocytopenic Purpura. In Initial Therapy for adults  $\geq 18$  years of age (previously > 17 years of age), criteria were updated to require the patient try a systemic corticosteroid, or there is an urgent need to increase platelet count quickly, or to allow if a systemic corticosteroid is contraindicated according to the prescriber. Previous criteria that separated out adults and children with acute bleeding and those with persistent or chronic disease were removed. Previous criteria of specifying platelet counts for adults with acute bleeding, persistent or chronic disease, and to increase platelet counts prior to surgery were removed. The requirement for adults that a corticosteroid be started with immune globulin if there is an urgent need to increase the platelet count quickly was removed. In Initial Therapy for children and adolescents (< 18 years of age) [previously ≤ 17 years of age], to increase platelet counts before surgical procedures, and pregnant patients, the criteria were updated to only include a requirement for the prescriber's specialty. Previous criteria that addressed children and adolescents with inaccessibility issues, activity level, and noncompliance were removed. The specific wording regarding pregnant patients, including "before normal vaginal delivery, cesarean section, or spinal or epidural anesthesia" and "pregnant patient in any trimester" was removed and replaced with the general term of "pregnant patients". The duration of approval was updated from 2 weeks and 3 months, per the respective classifications, to 6 months for any pregnant patient. For Continuation Therapy, a requirement was added that the patient has responded to therapy according to the prescriber; and the examples of responding to therapy were moved to a Note. In **Dosing**, specific dosing regimens were removed. The wording of "up to" 1 g per kg on 2 consecutive days, "up to" 0.4 g per kg on 5 consecutive days (up to a total of 2 g per kg per treatment course), and the dose and interval between doses has been adjusted according to the platelet count and/or to prevent significant bleeding "as determined by the prescriber" was added.

**Kawasaki Disease**: The criteria were updated from approval of a single dose to an approval duration of 3 months. The criterion that the patient had signs and symptoms required for a second dose of immune globulin was removed since the intent of the criteria assumed the patient was given a first dose of the product in the hospital. In **Dosing**, the wording of "up to" and "as a single dose or over multiple consecutive days" and "the dose may be repeated if needed" was added. Also, the references to length of infusion and to signs of fever or inflammation were removed.

**Multifocal Motor Neuropathy (MMN).** For Continuation Therapy, moved examples of a clinically significant improvement to a note. Removed a neurologist or in consultation with a neurologist for continuation criteria.

Antibody-Mediated Rejection (ABMR) in Solid Organ Transplantation (e.g., Kidney, Heart, Lung, Liver) was updated to Antibody-Mediated Rejection (ABMR) in Transplantation. In **Dosing**, the reference to case-by-case review was removed. Also, an addition of criterion was added as up to 2 g per kg as an intravenous infusion (as a single dose or divided in smaller doses) OR based on a transplant center's protocol.

**Autoimmune Mucocutaneous Blistering Diseases.** In the initial therapy criteria, examples of immunosuppressive agents were updated to notes. In the continuation criteria, examples of response to therapy were updated to notes.

Cytomegalovirus (CMV) Interstitial Pneumonia in Patients with Cancer or Transplant-Related Infection was updated to Cytomegalovirus (CMV) Pneumonia in Patients with Cancer or Transplant-Related Infection.

Dermatomyositis or Polymyositis. In the initial therapy criteria, examples of immunosuppressive agents were updated to notes. In the continuation criteria, examples of response to therapy were updated to notes. Desensitization Therapy Prior to and Immediately after Solid Organ (Kidney, Heart, Lung, Liver, Intestinal) Transplantation was updated to Desensitization Therapy Prior to and Immediately after Transplantation. In Continuation Therapy, the criterion regarding the timing of administration was removed. Criteria was updated to approve for 1 year if the product is prescribed by or in consultation with a physician affiliated with a transplant center. Guillain Barre Syndrome (GBS). Neuropathic symptoms were moved from criterion to a note. Hematologic Neoplasm-Associated Hypogammaglobulinemia Hypogammaglobulinemia after B-cell Targeted Therapies (Secondary Immunodeficieny [SID]). Added IgG level in units of g/L. Continuation criteria: updated wording to having a positive response to therapy according to the prescriber and moved examples of a positive response to a note. In **Dosing**, the reference to case-bycase review was removed. Dosing was updated as 0.4 to 0.5 g per kg to 0.4 to 0.6 g per kg. Also, the criterion was added as 0.2 to 0.8 g per kg once every 3 to 4 weeks and dosing adjusted based on clinical response as determined by the prescriber. Hematopoietic Cell Transplantation (HCT) to Prevent Bacterial Infection. Added IgG level in units of g/L. Continuation criteria: updated wording to having a positive response to therapy according to the prescriber and moved examples of a positive response to a note. In **Dosing**, the following criterion was added: The immune globulin dosage is based on a transplant center's protocol. Human Immunodeficiency Virus (HIV)-Associated Thrombocytopenia. Dosing section- added "up to" to both dosing criteria. Human Immunodeficiency Virus (HIV)-Infected Infants and Children to Prevent Recurrent Bacterial Infections. Added IgG level in units of g/L. Dosing criteriaremoved "between infusions" and added a note of examples of adjusting the dose according to clinical effectiveness. Immunotherapy-Related Toxicities Associated with Checkpoint Inhibitor Therapy. Initial therapy criteria- moved examples of systemic corticosteroid therapy to a note. Dosing criteria: Added "up to" and "as an IV infusion" wording. Added criterion regarding the dose and interval between doses has been adjusted based on clinical response as determined by the prescriber. Lambert-Eaton Myasthenic Syndrome (LEMS). Continuation criteria- moved examples of a response to therapy to a note. In **Dosing**, the wording "up to" was added. Dosing criteria- added the wording "up to" on criteria A). Myasthenia Gravis. Moved examples of immunosuppressive drugs to notes. Dosing criteria- added criterion regarding the dose and interval between doses has been adjusted based on clinical response as determined by the prescriber. Also added the wording "up

**Passive Immunization for Measles (Post-Exposure Prophylaxis).** Moved examples of severe immunocompromised status into a note.

Pure Red Blood Cell Aplasia (PRCA) Secondary to Chronic [Persistent] Parvovirus B19. Moved examples of chronic immunodeficiency conditions to a note.

**Stiff-Person Syndrome (Moersch-Woltman Syndrome).** Continuation therapy – moved examples of response to therapy to a note.

**Thrombocytopenia, Feto-neonatal Alloimmune.** In **Dosing**, the reference to case-by-case review was removed. The option for neonatal being dosed by the prescriber was added.

Selected Revision For continuation criteria, removed the wording "intravenous."

09/2/2020