Founded in 1990, the International Myeloma Foundation (IMF) is the first and largest organization focusing specifically on multiple myeloma. The IMF’s reach extends to more than 525,000 members in 140 countries worldwide. The IMF is dedicated to improving the quality of life of myeloma patients while working toward prevention and a cure through our four founding principles: Research, Education, Support, and Advocacy.

**RESEARCH** The signature project of the IMF’s Research division is the Black Swan Research Initiative®, a groundbreaking and collaborative effort to develop the first definitive cure for myeloma. Each year, the IMF also awards Brian D. Novis Grants, which promote research for better myeloma treatments, management, and practices in the field. In addition, more than 200 leading myeloma researchers comprise the IMF’s International Myeloma Working Group (IMWG), a research body that has developed myeloma guidelines that are followed around the world. Finally, the IMF’s Nurse Leadership Board (NLB), comprised of nurses from leading myeloma treatment centers, develops recommendations for the nursing care of myeloma patients.

**EDUCATION** The IMF Patient & Family Seminars and Regional Community Workshops are held around the world to provide up-to-date information presented by leading myeloma specialists and researchers directly to patients and their families. The IMF’s library of more than 100 publications, for patients and caregivers as well as for healthcare professionals, is updated annually and available free of charge. Publications are available in more than 20 languages.

**SUPPORT** The IMF’s InfoLine is staffed by information specialists who answer myeloma-related questions and provide support via phone and email to thousands of families each year. In addition, the IMF sustains a network of more than 150 myeloma support groups and offers training for the hundreds of dedicated patients, caregivers, and nurses who volunteer to lead these groups in their communities.

**ADVOCACY** The IMF’s Advocacy team has educated and empowered thousands of individuals who make a positive impact each year on issues critical to the myeloma community. Working in the US at both federal and state levels, we lead coalitions to advocate for parity in insurance coverage. We also represent the myeloma community’s interests before the US Congress and agencies such as the National Institutes of Health, the Food and Drug Administration, the Centers for Medicare and Medicaid Services, and the Veterans Administration. Outside the US, the IMF’s Global Myeloma Action Network (GMAN) works to help patients gain access to treatment.

Learn more about the ways the IMF is helping to improve the quality of life of myeloma patients while working toward prevention and a cure. Contact us at 818.487.7455 or 800.452.CURE, or visit myeloma.org.
What you will learn from this booklet
The IMF’s Understanding series of booklets is designed to acquaint you with treatments and supportive care measures for multiple myeloma (which we refer to simply as “myeloma”). Words in **bold-blue type** are explained in the “Terms and definitions” section at the end of this booklet, as well as in a more complete compendium of myeloma-related vocabulary, the IMF’s Glossary of Myeloma Terms and Definitions, located at glossary.myeloma.org.

Myeloma is a cancer that is not known to most patients at the time of diagnosis. To be empowered to play an active role in your own medical care and to make good decisions with your doctor, it is vital for you to learn as much as possible about myeloma and its treatments. The information in this booklet will help you in discussions with your healthcare team. The more information you have about resources that are available to you, the better and more fruitful those discussions will be.

This booklet will introduce you to Xpovio™ (generic drug name selinexor), how it works, how it has been tested, the indication for which it has been approved by the US Food and Drug Administration (FDA), how and when it is taken, and its possible side effects and how best to manage them.

What is Xpovio and how does it work?
Xpovio, a new medication to treat myeloma, is a “nuclear export inhibitor,” the first compound in this new drug class. Nuclear export inhibitors prevent cancer cells from expelling special genes in the cell nucleus called tumor suppressor proteins that help protect the cell from cancer.

What were the results with Xpovio in clinical trials?
Xpovio was given accelerated approval, and was subsequently approved by the FDA, based on data from the second part of the phase IIb STORM clinical trial. (The FDA’s Accelerated Approval Program was developed to allow for expedited approval of drugs that treat serious conditions and that fill an unmet medical need.) Part 2 of the STORM phase IIb study included 122 patients with relapsed, refractory myeloma (RRMM) who had previously received three or more anti-myeloma treatment regimens including an alkylating agent (such as melphalan or cyclophosphamide) glucocorticoids (steroids such as dexamethasone), bortezomib (Velcade®), carfilzomb (Kyprolis®), lenalidomide (Revlimid®), pomalidomide (Pomalyst®), and an anti-CD38 monoclonal antibody (such as daratumumab [Darzalex®]).

In addition, they were required to have myeloma that was documented to be refractory to glucocorticoids, a proteasome inhibitor (bortezomib or carfilzomb), an immunomodulatory drug (lenalidomide or pomalidomide), an anti-CD38 monoclonal antibody, and their last line of therapy.

In Part 2 of STORM, patients were treated with 80 mg of Xpovio in combination with 20 mg of dexamethasone on Days 1 and 3 of every week. Treatment continued until disease progression, unacceptable toxicity, or death. Eighty-three patients had myeloma that had failed to respond to bortezomib, carfilzomb, lenalidomide, pomalidomide, and daratumumab. Such patients were said to be “penta-refractory” because their myeloma had become resistant to these five essential drugs in the myeloma treatment arsenal. The overall response rate (ORR) among these 83 patients...
was 25.3%, which included one stringent complete response, 4 very good partial responses, and 16 partial responses. The median time to first response was 4 weeks, and the median duration of response was 3.8 months. Adverse events (side effects) that occurred during the phase IIb STORM clinical trial will be discussed later in this booklet.

Continued approval for Xpovio may be contingent upon the results of another clinical trial that confirms Xpovio’s benefit, the ongoing phase III BOSTON study evaluating selinexor in combination with bortezomib and low-dose dexamethasone.

Who is a candidate for Xpovio?
Xpovio has been approved in combination with dexamethasone for the treatment of adult patients with relapsed or refractory multiple myeloma who have received at least four prior therapies and whose disease is refractory to at least two proteasome inhibitors, at least two immunomodulatory drugs, and an anti-CD38 monoclonal antibody.

How is Xpovio taken?
Xpovio is an oral medication taken by mouth in the form of round, blue, 20-mg tablets with K20 embossed on one side and nothing on the other side.

What are the dose and schedule of Xpovio?
The recommended starting dose of Xpovio is 80 mg (four 20-mg tablets) taken orally on Days 1 and 3 of each week until disease progression or unacceptable toxicity. The recommended starting dose of dexamethasone is 20 mg taken orally with each dose of Xpovio on Days 1 and 3 of each week. For more information on dexamethasone, read the IMF’s publication Understanding Dexamethasone and Other Steroids.

Each Xpovio dosage should be taken at approximately the same time of day, and each tablet should be swallowed whole with water. Do not break, chew, crush, or divide the tablets.

If you miss or delay a dose of Xpovio, take your next dosage at the next regularly scheduled time. If you vomit after taking your dosage of Xpovio, do not repeat the dosage. Take your next dosage on the next regularly scheduled day.

Your doctor will monitor your complete blood count (CBC), standard blood chemistry panel, and body weight before you start Xpovio and as needed during treatment, especially during the first two months you are taking Xpovio.

You will receive treatment to prevent nausea and vomiting prior to and during treatment with Xpovio.

It is very important for you to maintain good intake of food and fluids throughout your treatment with Xpovio. You may receive intravenous (IV) hydration if necessary.

What are the possible side effects of Xpovio, and how are they managed?
Side effects that occurred in 20% or more of the 202 patients in the phase IIb STORM clinical trial are thrombocytopenia (a low level of blood cells called “platelets” or “thrombocytes” that help blood to clot after an injury), fatigue, nausea, anemia (a low level of red blood cells), decreased appetite, diarrhea, vomiting, hyponatremia (a low level of sodium in the blood), neutropenia (a low level of specific white blood cells called neutrophils, which fight bacterial infections), leukopenia (a low level of white blood cells in general, which constitute the immune system), constipation, dyspnea (shortness of breath), and upper respiratory tract infection (a bacterial or viral infection of the nose, throat, sinuses, or larynx).

Good communication with your doctor and nurses is extremely important while you are taking Xpovio. Side effects can be managed well with dose reductions, dose interruptions, or other supportive care if you are proactive about letting them know what you are experiencing. It is always better to deal with a problem right away than to let it get worse.

The treatment discontinuation rate in clinical trials due to side effects was 27%; 53% of patients had a reduction in the Xpovio dose; 65.3% had their dose of Xpovio interrupted.

If you have one or more adverse reactions to Xpovio (discussed below), your doctor will adjust your dose according to the guidelines in Table 1.

<table>
<thead>
<tr>
<th>Table 1. Xpovio Dosage Reduction Steps for Side Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Recommended starting dosage</strong></td>
</tr>
<tr>
<td>80 mg – Days 1 &amp; 3 of each week (160 mg total/week)</td>
</tr>
<tr>
<td><strong>First reduction</strong></td>
</tr>
<tr>
<td>100 mg once weekly</td>
</tr>
<tr>
<td><strong>Second reduction</strong></td>
</tr>
<tr>
<td>80 mg once weekly</td>
</tr>
<tr>
<td><strong>Third reduction</strong></td>
</tr>
<tr>
<td>60 mg once weekly</td>
</tr>
<tr>
<td><strong>Discontinue</strong></td>
</tr>
</tbody>
</table>

You will receive treatment to prevent nausea and vomiting prior to and during treatment with Xpovio.

It is very important for you to maintain good intake of food and fluids throughout your treatment with Xpovio. You may receive intravenous (IV) hydration if necessary.

What are the possible side effects of Xpovio, and how are they managed?
Side effects that occurred in 20% or more of the 202 patients in the phase IIb STORM clinical trial are thrombocytopenia (a low level of blood cells called “platelets” or “thrombocytes” that help blood to clot after an injury), fatigue, nausea, anemia (a low level of red blood cells), decreased appetite, diarrhea, vomiting, hyponatremia (a low level of sodium in the blood), neutropenia (a low level of specific white blood cells called neutrophils, which fight bacterial infections), leukopenia (a low level of white blood cells in general, which constitute the immune system), constipation, dyspnea (shortness of breath), and upper respiratory tract infection (a bacterial or viral infection of the nose, throat, sinuses, or larynx).

Good communication with your doctor and nurses is extremely important while you are taking Xpovio. Side effects can be managed well with dose reductions, dose interruptions, or other supportive care if you are proactive about letting them know what you are experiencing. It is always better to deal with a problem right away than to let it get worse.

The treatment discontinuation rate in clinical trials due to side effects was 27%; 53% of patients had a reduction in the Xpovio dose; 65.3% had their dose of Xpovio interrupted.

If you have one or more adverse reactions to Xpovio (discussed below), your doctor will adjust your dose according to the guidelines in Table 1.

<table>
<thead>
<tr>
<th>Table 1. Xpovio Dosage Reduction Steps for Side Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Recommended starting dosage</strong></td>
</tr>
<tr>
<td>80 mg – Days 1 &amp; 3 of each week (160 mg total/week)</td>
</tr>
<tr>
<td><strong>First reduction</strong></td>
</tr>
<tr>
<td>100 mg once weekly</td>
</tr>
<tr>
<td><strong>Second reduction</strong></td>
</tr>
<tr>
<td>80 mg once weekly</td>
</tr>
<tr>
<td><strong>Third reduction</strong></td>
</tr>
<tr>
<td>60 mg once weekly</td>
</tr>
<tr>
<td><strong>Discontinue</strong></td>
</tr>
</tbody>
</table>

You will receive treatment to prevent nausea and vomiting prior to and during treatment with Xpovio.

It is very important for you to maintain good intake of food and fluids throughout your treatment with Xpovio. You may receive intravenous (IV) hydration if necessary.

What are the possible side effects of Xpovio, and how are they managed?
Side effects that occurred in 20% or more of the 202 patients in the phase IIb STORM clinical trial are thrombocytopenia (a low level of blood cells called “platelets” or “thrombocytes” that help blood to clot after an injury), fatigue, nausea, anemia (a low level of red blood cells), decreased appetite, diarrhea, vomiting, hyponatremia (a low level of sodium in the blood), neutropenia (a low level of specific white blood cells called neutrophils, which fight bacterial infections), leukopenia (a low level of white blood cells in general, which constitute the immune system), constipation, dyspnea (shortness of breath), and upper respiratory tract infection (a bacterial or viral infection of the nose, throat, sinuses, or larynx).

Good communication with your doctor and nurses is extremely important while you are taking Xpovio. Side effects can be managed well with dose reductions, dose interruptions, or other supportive care if you are proactive about letting them know what you are experiencing. It is always better to deal with a problem right away than to let it get worse.

The treatment discontinuation rate in clinical trials due to side effects was 27%; 53% of patients had a reduction in the Xpovio dose; 65.3% had their dose of Xpovio interrupted.

If you have one or more adverse reactions to Xpovio (discussed below), your doctor will adjust your dose according to the guidelines in Table 1.
Thrombocytopenia (decreased platelet level)
Xpovio can cause a lowered level of platelets in the blood. Platelets (thrombocytes) help blood to clot; fewer platelets can lead to bleeding. 74% of the patients in phase IIb of the STORM clinical trial had lowered platelet levels; severe (grade 3 or 4) thrombocytopenia occurred in 61% of patients treated with Xpovio. Bleeding occurred in 23% of patients with thrombocytopenia.

Prevention and treatment of thrombocytopenia
Your doctor will monitor your platelet counts at baseline and during treatment, especially during the first two months. Management of low platelet counts may include interruption, reduction, or permanent discontinuation of your dose of Xpovio; platelet transfusions; or medication to stimulate the production of platelets.

Nausea/Vomiting
Seventy-two percent of the 202 patients in the phase IIb portion of the STORM clinical trial experienced nausea; 9% of the cases were severe. The median time to the onset of the first episode of nausea was 3 days after starting Xpovio. Vomiting was reported in 41% of patients, and severe vomiting occurred in 4% of patients. The median time to onset of first vomiting was 5 days after starting Xpovio.

Prevention and treatment of nausea and vomiting
Your doctor will prescribe a required anti-nausea medication along with your prescription for Xpovio. Even if you’re not experiencing nausea, it is very important to start taking your anti-nausea medication as a preventative prior to treatment with Xpovio. Continue taking the anti-nausea medication during treatment with Xpovio, even if you are not experiencing nausea.

Your doctor may also manage your nausea by delaying, reducing, or stopping your treatment with Xpovio, and may also administer intravenous fluids to replace electrolytes and prevent dehydration.

Fatigue
Fatigue is commonly associated with cancer and with cancer therapy. Fatigue that is related to cancer and its treatments is different from and more severe than normal fatigue, tends to last longer, and includes the feeling of overall weakness (the medical term for this is asthenia). (Please refer to the IMF publication Understanding Fatigue for further information on this debilitating side effect.) Seventy-three percent of the 202 patients in the phase IIb STORM clinical trial experienced fatigue; 22% was severe (Grade 3). A small number of patients had fatigue that was severe enough to require discontinuation of Xpovio.

Prevention and treatment of fatigue
Let your doctor and/or nurse know how you feel. Your doctor may prescribe a medication to minimize your fatigue. The effects of fatigue may also be minimized by maintaining

- A moderate level of activity
- A healthy diet and proper fluid intake
- A consistent sleeping schedule
- Regularly scheduled visits with your doctor to monitor your red blood cell count (low red blood cells, or anemia, can cause fatigue) and to discuss issues that may contribute to your fatigue
- A careful review of the side effects of any other medications you are taking to ensure that they are not contributing to your fatigue.

Anemia (low red blood cell count)
Red blood cells contain hemoglobin, a protein that contains iron and transports oxygen from the lungs to the body’s organs and tissues. A low level of red blood cells results in low levels of oxygen in the body, which may cause shortness of breath and feelings of exhaustion. Fifty-nine percent of the patients in the phase IIb STORM clinical trial experienced anemia; 40% was severe or disabling.

Prevention and treatment of anemia
Your doctor will determine which treatment regimen for anemia is best suited to and safest for you.

The following are options for treatment of anemia:

- Interruption, reduction, or discontinuation of your dose of Xpovio
- Blood transfusions
- Erythropoietic (red blood cell-making) medication.

Decreased appetite
Fifty-three percent of the patients in the phase IIb portion of the STORM clinical trial experienced decreased appetite, 5% of which was severe.

Prevention and treatment of decreased appetite
Your doctor will give you a prescription for anti-nausea medication to help prevent loss of appetite and will also manage this side effect by interrupting and/or modifying the dosing and scheduling of Xpovio. You
may be asked to weigh yourself daily and report the results to your doctor in order to monitor your condition closely.

A publication by the National Cancer Institute, *Eating Hints: Before, during, and after Cancer Treatment*, can be downloaded at cancer.gov/publications/patient-education/eating-hints and may help you maintain adequate nutrition. It includes the following suggestions:

- Eat plenty of protein and calories when you can.
- Eat at the time of the day when you have some appetite. For many people, this is in the morning.
- Eat what appeals to you, even if it’s the same thing again and again. Drink liquid meal replacements for extra nutrition.
- Don’t worry if you can’t eat at all some days. Tell your doctor if you cannot eat for more than 2 days.
- Drink plenty of liquids. It’s even more important to drink on days when you cannot eat. You should drink 8–12 cups of liquid a day. Keep a drink nearby and just keep sipping. In addition to water, you can try clear liquids.

**Diarrhea**

Diarrhea, defined as 3 or more loose stools per day, was reported as an adverse reaction in 44% of patients, and severe diarrhea, defined as 7 or more loose stools per day requiring treatment with intravenous fluids or hospitalization, occurred in 6% of patients treated with Xpovio. The median time to onset of diarrhea was 15 days.

**Prevention and treatment of diarrhea**

Your doctor will modify your dose of Xpovio and/or use standard anti-diarrheal medications such as Imodium® (loperamide HCl) to help control diarrhea. Dizziness, light-headedness, or fainting may occur due to dehydration caused by excessive or persistent diarrhea. If you become dehydrated, your doctor will order intravenous fluids for you.

**Hyponatremia (low level of sodium in the blood)**

Sodium (Na, the chemical symbol for sodium, is taken from the Latin word “natrium”) is an electrolyte, one of the minerals in the blood and other body fluids that carries an electrical charge and is essential for life. Sodium helps to regulate the amount of water that is in and around the cells, the acidity of the blood (pH), nerve and muscle function (including the heart), and other important processes. Vomiting and diarrhea can lead to reduced concentrations of sodium in the blood. Thirty-nine percent of the patients treated with Xpovio experienced hyponatremia; 22% of patients experienced severe or life-threatening hyponatremia.

**Prevention and treatment of hyponatremia**

Your doctor will monitor your levels of sodium before and during the first two months of your treatment with Xpovio. The doctor will review your diet with you and may treat you with intravenous saline or with salt tablets, or may suggest that you eat salty snacks. Your dose of Xpovio may be interrupted, reduced, or permanently discontinued depending upon the severity of the hyponatremia.

**Neutropenia (low level of neutrophils)**

Neutrophils, the most abundant type of white blood cell, are the body’s “first responders” in fighting bacterial infections. Having too few neutrophils can lead to infection. Fever is the most common sign of neutropenia. If you have a fever, you need immediate medical attention. Neutropenia was reported as an adverse reaction in 34% of patients, and severe neutropenia occurred in 21% of patients treated with Xpovio, with median time to onset of neutropenia at 25 days. Fever caused by neutropenia (febrile neutropenia) was reported in 3% of patients.

**Prevention and treatment of neutropenia**

Your doctor will assess your baseline neutrophil count before you start treatment with Xpovio, and will monitor your count during treatment. Your blood count levels will be monitored closely during the first two months of treatment. You will also be monitored closely for signs and symptoms of infection. Call your doctor immediately if you have a fever, and make sure you have an emergency or after-hours number to reach a doctor who is covering the practice. You may be given antimicrobial therapy if you are showing signs of infection. Your doctor may also give you a white blood cell growth factor (G-CSF, or granulocyte-colony stimulating factor) to increase production of your white blood cells. Your dose of Xpovio may be interrupted, and/or reduced, or permanently discontinued based on the severity of your neutropenia.

**Constipation**

The medical definition of constipation is 3 or fewer bowel movements in one week. The stool may be hard, dry, and difficult to pass. You may also have stomach cramps and bloating. Not eating and drinking enough and being less active can contribute to the problem. Constipation occurred in 50 (25%) of the 202 patients in the phase IIb STORM clinical trial; only 3 of those patients (1.5%) had severe constipation.
Prevention and treatment of constipation
- Drink sufficient fluids, 8–12 glasses daily.
- Try to eat high-fiber foods.
- Try to be active every day, even if you exercise in a chair. Moving your body increases peristalsis, the rhythmic contractions that move food through the intestines.
- Report your constipation to your nurse and/or doctor, who will recommend a stool softener or laxative if required.

Infections
Fifty-two percent of the patients receiving Xpovio in the phase IIb STORM clinical trial experienced an infection. Upper respiratory tract infection occurred in 21% of the patients, pneumonia in 13%, and sepsis, the body’s potentially life-threatening response to an infection, occurred in 6% of patients. Severe infections were reported in 25% of patients, and deaths resulting from an infection occurred in 4% of patients. Most infections were not associated with a low neutrophil count. Tell your doctor immediately if you have any signs and symptoms of infection, including:
- Fever
- Flu-like symptoms (body aches, sweating, chills)
- Sore throat
- Cough (which may produce phlegm)
- Shortness of breath
- Chest pain when you breathe or cough

Prevention and treatment of infections
You must report your symptoms to your doctor, who will determine how the symptoms should be managed and if you need to receive an antibiotic or other medications. If your doctor or another doctor covering the practice is not available, you should go to an urgent care or emergency facility.

Warnings and precautions

Neurological toxicity
Neurological toxicities including dizziness, fainting, depressed level of consciousness, and mental status changes (including delirium and confusion) occurred in 16% of patients treated in clinical trials with Xpovio 80 mg and dexamethasone 20 mg administered twice weekly (the standard doses); 14% was severe or required hospitalization. You must report any of the above symptoms to your doctor and/or nurse. Your doctor will your check your hydration level, your red blood cell levels, and any other drugs you’re taking that might have similar toxicities. Your dose of Xpovio may be interrupted, lowered, or discontinued.

Embryo-fetal toxicity
Based on data from animal studies, Xpovio might cause harm to a developing child during prenatal development if administered to a pregnant woman or her male partner. If you are pregnant, you should not take Xpovio. Females of childbearing potential and males with a female partner of childbearing potential should use effective contraception during treatment with Xpovio and for one week after the last dose.

Lactation
There is no information about the presence of Xpovio in human milk, or its effects on the breastfed child or milk production. Because of the potential for serious adverse reactions in a breastfed child, women should not breastfeed during treatment with Xpovio and for 1 week after the last dose.

Infertility
Based on findings in animals, Xpovio may harm fertility in males and females of reproductive potential.

Patient access and support services for Xpovio
Karyopharm Therapeutics, the company that developed Xpovio, has established a patient support and resource center called KaryForward. You can enroll in KaryForward to receive help with access to Xpovio, to learn about financial resources that may be available to help you, and to speak with a nurse case manager at a specialty pharmacy to ask questions about Xpovio or to discuss side effects. Contact KaryForward at karyforward.com or 1.877.KARY4WD (1.877.527.9493).

In closing
While a diagnosis of cancer is something you cannot control, gaining knowledge that will improve your interaction with your doctors and nurses is something you can control, and it will have a significant impact on how well you do throughout the disease course.

This booklet is not meant to replace the advice of your doctors and nurses who are best able to answer questions about your specific healthcare management plan. The IMF intends only to provide you with information that will guide you in discussions with your healthcare team. To help ensure effective treatment with good quality of life, you must play an active role in your own medical care.
We encourage you to visit myeloma.org for more information about myeloma and to contact the IMF InfoLine with your myeloma-related questions and concerns. The IMF InfoLine consistently provides callers with the most up-to-date and accurate information about myeloma in a caring and compassionate manner. IMF InfoLine specialists can be reached at InfoLine@myeloma.org or 818.487.7455 or 800.452.CURE.

**Terms and definitions**

**Alkylating agent:** A chemotherapeutic agent such as melphalan or cyclophosphamide. Alkylating refers to the way in which these agents cross-link the DNA of myeloma cells and block cell division.

**Anemia:** A decrease in hemoglobin, a protein which is contained in red blood cells and carries oxygen to the body’s tissues and organs. Anemia is usually defined as hemoglobin below 10 g/dL, and/or as a decrease of ≥ 2 g/dL from the normal level for an individual. Over 13–14 g/dL is considered normal.

**Asthenia:** A condition in which the body lacks or has lost strength either as a whole or in any of its parts.

**Baseline:** The initial known data that is gathered and used for comparison with later data.

**Cancer:** A term for diseases in which malignant cells divide without control. Cancer cells can invade nearby tissues and spread through the bloodstream and lymphatic system to other parts of the body.

**Dehydration:** Excessive loss of water from the body. Symptoms and signs include thirst, dry mouth, weakness or lightheadedness (particularly if worse on standing up), dark urine, and a decrease in urination. Heat exposure, prolonged vigorous exercise, kidney disease, vomiting or diarrhea, as well as certain medications may lead to dehydration.

**Dyspnea:** The medical term for shortness of breath. Often described as an intense tightening in the chest, air hunger, difficulty breathing, or breathlessness. Dyspnea can be caused by a host of medical problems, including anemia, pneumonia, or a pulmonary embolism.

**Electrolytes:** Minerals in your blood and other body fluids that carry an electrical charge and are essential for life. Electrolytes include sodium, potassium, calcium, magnesium, chloride, phosphate, and bicarbonate. They affect the amount of water in the body, the acidity of the blood (pH), nerve and muscle function (including the heart), and other important processes.

**Febrile neutropenia:** The development of fever, often with signs of infection, in a patient with neutropenia, an abnormally low number of white blood cells called neutrophils. In a neutropenic fever, it is common not to identify the exact cause. Febrile neutropenia is usually treated with antibiotics, even if an infectious source can’t be identified.

**Generic drug name:** A generic drug name refers to the chemical makeup of a drug rather than its brand name. A generic name is given to a drug before it is approved and given a brand name. After a drug goes off patent, other manufacturers may make generic versions of the drug. For example: ibuprofen is the generic name for drugs brand-named Advil® and Motrin®.

**Hyponatremia:** A low level of sodium in the blood. Symptoms include nausea, headache, confusion, and fatigue. Hyponatremia can be caused by fluid loss through vomiting or diarrhea, and also by fluid overload from heart, liver, or kidney disease.

**Immunomodulatory drug:** An agent that affects, enhances, or suppresses the immune system. Sometimes called an IMiD® compound.

**Intravenous (IV):** Administered into a vein.

**Leukopenia:** A low number of white blood cells.

**Monoclonal antibody:** An antibody manufactured in a lab rather than produced in the human body. Monoclonal antibodies are specifically designed to find and bind to cancer cells and/or immune system cells for diagnostic or treatment purposes. Monoclonal antibodies can be used alone, or they can be used to deliver drugs, toxins, or radioactive material directly to tumor cells.

**Multiple myeloma:** A cancer of the bone marrow plasma cells, white blood cells that make antibodies. The cancerous plasma cells are called myeloma cells.

**Neutropenia:** A reduced level of neutrophils, a type of white blood cell necessary to combat bacterial infection.

**Overall response rate (ORR):** The percentage of patients in a clinical trial whose monoclonal protein decreased by at least 50% in response to treatment.

**Proteasome inhibitor:** Any drug that interferes with the normal function of the proteasome, an enzyme complex responsible for breaking down and recycling unwanted proteins in both normal cells and cancer cells.
**Refractory:** Disease that is no longer responsive to standard treatments. Patients with refractory myeloma have had progressive disease either during treatment or within 60 days following treatment. Most clinical trials for advanced disease are for patients with relapsed and/or refractory myeloma.

**Relapse:** The reappearance of signs and symptoms of a disease after a period of improvement. Patients with relapsed disease have been treated, then developed signs and symptoms of myeloma at least 60 days after treatment ended. Most clinical trials for advanced disease are for patients with relapsed and/or refractory myeloma.

**Response or remission:** Complete or partial disappearance of the signs and symptoms of cancer. Remission and response are interchangeable terms.

- **Stringent complete response (sCR)** – sCR is CR (as defined below) plus normal FLC ratio and absence of clonal cells in bone marrow by immunohistochemistry or immunofluorescence.

- **Complete response (CR)** – For myeloma, CR is negative immunofixation on serum (blood) and urine, and disappearance of any soft tissue plasmacytomas, and ≤ 5% plasma cells in bone marrow. CR is not the same as a cure.

- **Very good partial response (VGPR)** – VGPR is less than CR. VGPR is serum M-protein and urine M-protein detectable by immunofixation but not on electrophoresis, or 90% or greater reduction in serum M-protein, plus urine M-protein less than 100 mg per 24 hours.

- **Partial response (PR)** – PR is a level of response in which there is at least a 50% reduction in M-protein, and reduction in 24-hour urinary M-protein by at least 90% (or to less than 200 mg per 24 hours).

**Side effect:** Unwanted effect caused by a drug. Also known as adverse reaction or adverse event (AE).

**Steroid:** A type of hormone. Synthetic steroids are often given to myeloma patients along with one or more anticancer drugs and typically enhance the anti-myeloma treatment benefit.

- **Adrenocortical steroid** – Any of the steroidal hormones produced by the adrenal cortex (the outer part of the adrenal gland) or their synthetic (man-made) equivalents. Also known as adrenocorticoids, glucocorticosteroids, or corticosteroids.

- **Corticosteroid** – A group of natural and synthetic analogues of the hormones secreted by the pituitary gland. These include the glucocorticoids used in the treatment of myeloma such as dexamethasone, prednisone, and methylprednisolone. Glucocorticoids have multiple effects and are used for a large number of conditions.

**Thrombocytopenia:** A low number of platelets in the blood. “Normal” levels vary from laboratory to laboratory. The normal level at the Mayo Clinic is 150,000–450,000. If the platelet count is less than 50,000, bleeding problems could occur. Major bleeding is usually associated with a reduction to less than 10,000.

**Tumor suppressor protein:** Also called an anti-oncogene. A gene that protects a cell from one step on the path to cancer. When this gene mutates to cause a loss or reduction in its function, the cell can progress to cancer, usually in combination with other genetic changes.

**Notes**

________________________
________________________
________________________
________________________
________________________
________________________
________________________
________________________
________________________
________________________
________________________
________________________
________________________
________________________
________________________
________________________
________________________

You are not alone. The IMF is here to help.

Myeloma is a cancer that is not known to most patients at the time of diagnosis. To be empowered to play an active role in your own medical care and to make good decisions about your care with your doctor, it is vital for you to learn as much as possible about myeloma and its treatments.

The IMF produces and maintains a library of publications to help arm you with one of the most important weapons in the fight against myeloma: INFORMATION. The following is a partial list of publications available in English, and selected titles are also available in other languages.

- Patient Handbook
- Concise Review of the Disease and Treatment Options
- Understanding Clinical Trials
- Understanding DARZALEX® (daratumumab) injection
- Understanding Dexamethasone and Other Steroids
- Understanding EMPLICITI® (elotuzumab)
- Understanding FARYDAK® (panobinostat) capsules
- Understanding Fatigue
- Understanding Freelite® and Hevylite® Tests
- Understanding High-Dose Therapy with Stem Cell Rescue
- Understanding the Immune System in Myeloma
- Understanding KYPROLIS® (carfilzomib) injection
- Understanding MGUS and Smoldering Multiple Myeloma
- Understanding NINLARO® (ixazomib) capsules
- Understanding Peripheral Neuropathy in Myeloma
- Understanding POMALYST® (pomalidomide) capsules
- Understanding REVLIMID® (lenalidomide)
- Understanding the Role of Vertebroplasty and Kyphoplasty
- Understanding Thalidomide Therapy
- Understanding Treatment of Myeloma Bone Disease
- Understanding Treatment of Myeloma-Induced Vertebral Compression Fractures
- Understanding VELCADE® (bortezomib) injection
- Understanding the VRd Regimen for Newly Diagnosed Myeloma
- Understanding XPOVIO™ (selinexor)
- Understanding Your Test Results

All IMF publications and periodicals are always free of charge. Visit publications.myeloma.org to read, download, or order printed copies. Subscribe to IMF periodicals at subscribe.myeloma.org or by contacting the IMF.

As always, the IMF urges you to discuss all medical issues with your doctor, and to contact the IMF’s InfoLine specialists with your myeloma questions and concerns.

818.487.7455          800.452.CURE          theIMF@myeloma.org