



## New Survey Highlights Growing Concern About Risk of Infection in Cancer Patients and Emerging Antibiotic Resistance

May 27, 2009

### --Amgen, CDC Foundation and CDC Partner to Launch Three-Year Initiative to Improve Infection Control in Vulnerable Cancer Patient Population

THOUSAND OAKS, Calif., May 27, 2009 /PRNewswire-FirstCall via COMTEX/ -- Amgen (Nasdaq: AMGN) today announced the results of a national Harris Interactive, Inc. survey indicating that the vast majority of oncologists and infectious disease (ID) specialists are highly concerned about the negative impact infection may have on treatment outcomes in chemotherapy patients, as well as emerging antibiotic resistance. Nearly all oncologists surveyed (92 percent) believe it is important for cancer patients to prevent infections to achieve successful treatment outcomes. Antibiotic resistance is a growing concern among the majority of physicians surveyed, with 96 percent of ID specialists and 79 percent of oncologists reporting an increase in antibiotic-resistant infections in cancer patients over the past five years. Both groups of physicians report methicillin-resistant *Staphylococcus aureus* (MRSA) infections as the most commonly observed in chemotherapy patients.

Cancer patients are at a higher risk for infection due to a compromised immune system caused by both the cancer and chemotherapy treatment. Neutropenia, a low white blood cell count, is a common and potentially dangerous side effect in patients receiving strong chemotherapy. It can lead to a heightened risk of infection that can require hospitalization and be life-threatening. Each year, 60,000 cancer patients are hospitalized for chemotherapy-induced neutropenia, and a patient dies every two hours from this complication. Neutropenia also can potentially disrupt chemotherapy treatment, including both dose delays and dose reductions. Studies show that for certain types of cancer, chemotherapy produces the best long-term results when patients receive the full dose on schedule.

"The survey findings show that one in four chemotherapy patients report having an infection during treatment, with more than a third requiring a second course of antibiotics," said Sean Harper, M.D., chief medical officer and head of Global Development at Amgen. "Infections associated with cancer treatment are increasing and are often serious, highlighting the need for a program to improve infection control and appropriate antibiotic management in these high-risk patients."

To help raise awareness of the risks and impact of infections in cancer patients, Amgen is joining forces with the Centers for Disease Control (CDC) Foundation, and the Divisions of Healthcare Quality and Promotion and Cancer Prevention and Control at CDC on a three-year initiative to provide resources and educational tools to help cancer patients, their caregivers and healthcare professionals.

The initiative includes the development of evidence-based curricula for healthcare providers on infection control for cancer patients and appropriate antibiotic stewardship, and an interactive online education tool for patients on what to expect from treatment, as well as how to prevent and manage infection during treatment.

"Programs to improve infection control in cancer patients, whose immune systems may be compromised by chemotherapy, will aid in saving the lives of these high-risk patients," said Charles Stokes, president and CEO of the CDC Foundation. "This initiative will bring together experts in oncology and infectious disease to raise awareness of this public health concern, and reduce the risk of infections, and ultimately, related deaths."

#### Survey Result Highlights:

Infections among chemotherapy patients are fairly common.

- Nearly one in four patients surveyed (24 percent) had an infection in the last 12 months while receiving chemotherapy treatment. Of these patients:
- 61 percent had more than one infection;
- virtually all took at least a week to recover;
- 22 percent reported taking four or more weeks to recover;
- 52 percent had to go the emergency room due to an infection;
- 42 percent were hospitalized, spending on average nine days in the hospital; and
- 43 percent experienced chemotherapy treatment interruption.
- ID specialists report seeing an average of 36 chemotherapy patients with an infection in a typical month.
- 57 percent of ID specialists and 28 percent of oncologists have observed methicillin-resistant *Staphylococcus aureus* (MRSA) infections as the most common infection in chemotherapy patients.

Antibiotic resistance is a growing concern.

- Nearly all ID specialists (91 percent) report being very or extremely concerned about emerging antibiotic resistance in cancer patients.
- More than half of all patients (51 percent) are extremely or very concerned about antibiotic resistance.
- The issue of antibiotic resistance is the least likely to be discussed between physicians and patients, with 26 percent of oncologists (or nurses in their practice) discussing the issue before a cancer patient starts chemotherapy.

Oncologists believe antibiotics are overused in preventing infections.

- 58 percent of oncologists believe antibiotics are overused in an effort to prevent infections in chemotherapy patients.
- Approximately half of ID specialists and oncologists surveyed said that antibiotics are effective at minimizing the risk of infection.
- There is general consensus among both ID specialists and oncologists (7 in 10) that washing hands frequently, avoiding sick people and using proper food handling techniques are effective strategies in minimizing a chemotherapy patient's risk for infection.

Physicians are concerned about the impact of infections in cancer patients.

- 87 percent of ID specialists are extremely or very concerned about the impact of infections on overall outcomes for chemotherapy patients, including overall survival and disease-free survival.
- Nearly half of cancer patients are not even aware that chemotherapy puts them at greater risk for an infection, and significant minorities of patients do not realize that an infection may in fact negatively impact the outcomes of their chemotherapy treatment.
- 36 percent disagree or strongly disagree that their chances for successful cancer treatment could be lower due to a dose reduction and/or delay in their chemotherapy schedule;
- one out of four patients believes it doesn't matter if they have to take a break from their chemotherapy schedule, because they can just start back up again later; and
- almost one-quarter of patients (22 percent) believe it doesn't matter if their doctor lowers the dose of chemotherapy treatment, because the doctor can always increase the dose later without any effect on overall treatment.

#### Survey Methodology

The survey was conducted by Harris Interactive, Inc. an independent market research and polling organization, with support from Amgen Inc. The survey included 430 interviews with cancer patients who are currently undergoing chemotherapy or who have undergone chemotherapy in the past 12 months, 150 oncologists and 151 infectious disease specialists. Data was collected from March 20, 2009 through April 15, 2009.

#### Methodology: Oncologists and Infectious Disease Specialists

Physician samples were drawn at random from the AMA master file of oncologists and infectious disease specialists. The AMA list was then matched to the Harris Interactive Online Physician Panel (HIPP) by ME number. Oncologists and infectious disease specialists on the AMA list who matched the HIPP were then included in the sampling frame and recruited to participate via e-mail invitation. Specialists in the AMA random draw who were not members of the HIPP were invited to participate via first-class mail. All e-mail and first-class mail invitations included a URL and password for one-time use to allow participants to log on to the Internet and participate in the survey research.

#### Methodology: Patients

Patients who were currently undergoing chemotherapy or had completed chemotherapy within the past year were recruited using the Harris Interactive Chronic Illness Panel (CIP). Patients were recruited to participate via e-mail invitation, which included a URL and password for one-time use to allow participants to log on to the Internet and participate in the survey research.

#### About Amgen

Amgen discovers, develops, manufactures and delivers innovative human therapeutics. A biotechnology pioneer since 1980, Amgen was one of the first companies to realize the new science's promise by bringing safe and effective medicines from lab, to manufacturing plant, to patient. Amgen therapeutics have changed the practice of medicine, helping millions of people around the world in the fight against cancer, kidney disease, rheumatoid arthritis and other serious illnesses. With a deep and broad pipeline of potential new medicines, Amgen remains committed to advancing science to dramatically improve people's lives. To learn more about our pioneering science and our vital medicines, visit [www.Amgen.com](http://www.Amgen.com).

#### Contacts:

Amgen, Thousand Oaks, CA  
Ashleigh Koss, (805) 313-6151 (media)  
Arvind Sood, (805) 447-1060 (investors)

Video is available for this story via satellite on Wednesday May 27th. See below for feed time/coordinates:

FEED DATE: WEDNESDAY, MAY 27TH, 2009  
FEED TIME: 1:00 - 1:30 PM ET (FED IN ROTATION)  
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