THE VALUE OF MEDICAL INNOVATION EUROPE
Discovery consists of seeing what everybody has seen and thinking what nobody has thought.

Albert Szent-Györgyi, Nobel Laureate for Medicine

Good. The Scientist Speculates. 1963
SUMMARY

Medical innovation contributes significantly to our ability to live longer, healthier and more prosperous lives. It has had a clear impact in many diseases, including polio, diabetes, heart disease, HIV and, in recent years, cancer.

Improvements in life expectancy and quality of life can be attributed directly to medical innovation, and today, patients are reaping the rewards of the significant investment made in research over the past decades.

Celgene is committed to medical innovation and has delivered significant improvements in overall survival and quality of life for patients.

We continue to take bold and pioneering steps with a diverse pipeline of new therapies.

Our aspiration is to change the course of the diseases that we treat, making them manageable chronic diseases and, one day, we hope to offer a cure.
CONTENTS

Introduction

Chapter 1: Living longer, better & healthier

Chapter 2: The cost of the cure: exploding the myths

Chapter 3: Progress & prosperity

Chapter 4: The virtuous cycle of innovation and how to sustain it
LIVING LONGER, BETTER & HEALTHIER

MEDICAL PROGRESS, INCLUDING BIOMEDICAL INNOVATION, HAS LED TO LONGER AND HEALTHIER LIVES FOR PEOPLE ALL OVER THE WORLD.

Vaccines, antibiotics and cardiovascular medicines have accounted for tremendous medical gains in the past 100 years, but the pace of innovation in the past 5 to 10 years with respect to cancer and other deadly conditions is equally astonishing. Investment, research and development by companies like Celgene has played a critical role.
EUROPE HAS WITNESSED BREATHTAKING MEDICAL BREAKTHROUGHS IN THE PAST CENTURY

“It is difficult to convey the excitement of actually witnessing the amazing power of penicillin over infections for which there had previously been no effective treatment. I could not then imagine the transformation of medicine and surgery that penicillin would produce.”

Charles Fletcher, who became the first doctor to inject a human subject with penicillin at the Radcliffe Infirmary, Oxford
LIFE EXPECTANCY GAINS ARE CLEAR

Life expectancy at age 65, 2011 and years gained since 1960 (or nearest year)

- **France**
- **Spain**
- **Italy**
- **Switzerland**
- **Portugal**
- **Austria**
- **Finland**
- **Luxembourg**
- **Belgium**
- **Iceland**
- **Norway**
- **Sweden**
- **Germany**
- **Israel**
- **Netherlands**
- **United Kingdom**
- **Slovenia**
- **Ireland**
- **Greece**
- **United States**
- **Estonia**
- **Poland**
- **Denmark**
- **Czech Rep.**
- **Slovak Rep.**
- **Hungary**
- **Russian Fed.**
- **Turkey**

**Women**

**Men**

PROGRESS AGAINST DISEASES 1960–2012

1960
Polio Vaccine

1965
Surfactants for Infant Respiratory Distress

1967
First Beta Blockers

1968
Meningococcal Disease Vaccine

1974
First ACE Inhibitor to Treat High Blood Pressure

1981
Statins for Cholesterol

1981
Hepatitis B Vaccine

1983
First Monoclonal Antibody

1986
First Monoclonal Antibody

1987
SSRIs (Anti-depressants)

1989
First HIV Drugs

1990
First Blood Thinners for Heart Attack, Stroke

1993
First Enzyme Replacement Drug for Gaucher’s Disease

1994
Breast Cancer Rx 1995 – AIDS Rx Advance (HAART)

1995
New HIV Drugs

1996
First Enzyme Replacement Drug for Gaucher’s Disease

1999
First HIV Drugs

2000
Targeted Therapy Approved for Leukaemia

2001
Immunomodulator Approved for Multiple Myeloma

2004
Anti-angiogenic Approved for Colon Cancer

2010
Targeted Therapies for Lung, Colon, Prostate and Skin Cancer

Adapted from: American Society of Clinical Oncology, www.cancerprogress.net
NEW THERAPIES ARE A GREAT CONTRIBUTOR TO INCREASED LIFE EXPECTANCY

1960–1997
New therapies account for 45% of the increase in life expectancy

2000–2009
New therapies account for 73% of the increase in life expectancy

HIV/AIDS CASE STUDY: RATES OF HIV INFECTION IN EUROPE REMAIN HIGH

Rate of reported HIV diagnoses, by year of diagnosis, in the EU/EEA, 1984–2012

HIV/AIDS CASE STUDY: DECREASE IN NUMBER OF AIDS DEATHS IN EUROPE SHOWS IMPACT OF INNOVATIVE MEDICINES

Number of deaths in 17 EU countries* where Eurostat data is available, since 1994

- **EUROSTAT Mortality statistics, AIDS (HIV disease, ICD-10 B20-B24)**
- **EuroHIV deaths notifications in AIDS cases**

* CZ, DN, DE, IE, GR, SP, IT, LX, HU, NL, AU, PL, PT, SL, FI, SW, UK

HIV/AIDS CASE STUDY: ANTIRETROVIRALS HAVE SAVED MILLIONS OF LIVES

Annual number of people dying from AIDS-related causes in low- and middle-income countries globally compared with a scenario of no antiretroviral therapy, 1996–2012

*The data points for 2012 are projected based on the scaling up of programmes in 2009–2011 and do not represent official estimates of the number of annual AIDS-related deaths

“The life-saving benefits of ART are vividly evident. Before ART, about 80% of the people presenting at clinics with AIDS-defining illnesses died within two years, but even the most severely ill people living with HIV today have at least an 80% chance of survival after two years of ART.”

GLOBAL UPDATE ON HIV TREATMENT 2013: RESULTS, IMPACT AND OPPORTUNITIES, JUNE 2013 WHO report in partnership with UNICEF and UNAIDS

In 2005, a man diagnosed with multiple myeloma asked me if he would be alive to watch his daughter graduate from high school in a few months. In 2009, bound to a wheelchair, he watched his daughter graduate from college. The wheelchair had nothing to do with his cancer. The man had fallen down while coaching his youngest son's baseball team.
THE PROMISE OF MEDICAL INNOVATION = FEWER LIVES LOST

Life years lost to cancer

2010 160 million

40% REDUCTION

Projected in 2040 96 million

Soerjomataram et al. Lancet 2012;380:1840–1850
CANCER MORTALITY IS DECREASING IN EUROPE

Change in all cancer mortality rates, 1990–2011 (or nearest year)

CANCER SURVIVAL RATES ARE INCREASING ALMOST EVERYWHERE IN EUROPE

Cancer survival rates 2012 (1 minus mortality/incidence)

IN A 20-COUNTRY SAMPLE, INNOVATIVE CANCER THERAPIES GENERATED A 30% DECLINE IN THE CANCER MORTALITY RATE

Contribution of the increase in cancer drug vintage to the decline in the age-adjusted cancer mortality rate

Increase in drug vintage accounts for 30% of the 1995–2003 decline in age-standardized cancer mortality rate

SURVIVAL RATE FOR MYELOMA PATIENTS RISES WITH NEW INNOVATIVE THERAPIES

FIVE-YEAR SURVIVAL FROM MYELODYSPLASTIC SYNDROMES (MDS) INCREASING

24%  +60%  38%

2004  2008

Smout et al. Age Period Cohort Analysis of Cancer Survival In SEER 18 Registry. Center for Medicine in the Public Interest
THE COST OF THE CURE: EXPLODING THE MYTHS

THE COST OF THESE MEDICAL ADVANCES IS NOT OVERWHELMING. ON THE CONTRARY, CANCER CARE, INCLUDING INNOVATIVE MEDICINES, REPRESENTS A SMALL SHARE OF HEALTHCARE COSTS.

Innovative cancer treatments that produce longer and better lives can ultimately reduce the direct costs of cancer care to health care systems, as well as the broader economic and social burden associated with cancer across Europe.
Cancer’s Challenge for Europe

Cancer is everybody’s business. In 2012 alone, 3.2 million people in Europe will be diagnosed for the first time with cancer, about 13 million people will be affected and 1.2 million will die from this disease. For this reason, cancer research and innovation are a priority for the European Union.

Máire Geoghegan-Quinn, EU Commissioner for Research and Innovation

GROWTH IN PHARMACEUTICAL SPENDING HAS DECLINED

Average annual growth rates of health spending for selected functions, in real terms, OECD average, 2008–2011

COST OF TREATING CANCER REMAINS A SMALL PORTION OF TOTAL HEALTHCARE EXPENDITURES...

Total in million Euro, per capita Euro and share of total healthcare expenditures.

<table>
<thead>
<tr>
<th>Country</th>
<th>Direct costs for cancer (£ million)</th>
<th>Direct costs for cancer per capita (£)</th>
<th>Cancer costs as % of total healthcare costs</th>
<th>Total healthcare expenditure (£ million)</th>
<th>Population (2003)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>54,263</td>
<td>120</td>
<td>6.4</td>
<td>844,800</td>
<td>451,263,000</td>
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<tr>
<td>Austria</td>
<td>923</td>
<td>114</td>
<td>6.5</td>
<td>14,200</td>
<td>8,067,000</td>
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<tr>
<td>Belgium</td>
<td>1,469</td>
<td>142</td>
<td>6.5</td>
<td>22,600</td>
<td>10,372,000</td>
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<tr>
<td>Czech Republic</td>
<td>663</td>
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<td>Denmark</td>
<td>748</td>
<td>139</td>
<td>6.5</td>
<td>11,500</td>
<td>5,387,000</td>
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<tr>
<td>Finland</td>
<td>587</td>
<td>113</td>
<td>6.9</td>
<td>8,500</td>
<td>5,213,000</td>
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<tr>
<td>France</td>
<td>7,091</td>
<td>119</td>
<td>5.3</td>
<td>133,800</td>
<td>59,768,000</td>
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<tr>
<td>Germany</td>
<td>12,100</td>
<td>150</td>
<td>5.4</td>
<td>224,000</td>
<td>82,502,000</td>
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<td>Greece</td>
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<td>101</td>
<td>6.5</td>
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<td>Hungary</td>
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<td>56</td>
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<td>Ireland</td>
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<td>118</td>
<td>6.5</td>
<td>7,200</td>
<td>3,953,000</td>
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<td>6,578</td>
<td>114</td>
<td>6.5</td>
<td>101,200</td>
<td>57,478,000</td>
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<td>The Netherlands</td>
<td>1,525</td>
<td>94</td>
<td>4.1</td>
<td>37,200</td>
<td>16,224,000</td>
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<td>Norway</td>
<td>871</td>
<td>191</td>
<td>6.5</td>
<td>13,400</td>
<td>4,564,000</td>
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<tr>
<td>Poland</td>
<td>1,300</td>
<td>34</td>
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<td>20,000</td>
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<td>Portugal</td>
<td>943</td>
<td>90</td>
<td>6.5</td>
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<td>Spain</td>
<td>3,855</td>
<td>92</td>
<td>6.5</td>
<td>59,300</td>
<td>41,874,000</td>
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<td>Sweden</td>
<td>1,253</td>
<td>140</td>
<td>7.0</td>
<td>17,900</td>
<td>8,958,000</td>
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<td>Switzerland</td>
<td>1,391</td>
<td>189</td>
<td>6.5</td>
<td>21,400</td>
<td>7,343,000</td>
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<tr>
<td>UK</td>
<td>10,823</td>
<td>182</td>
<td>10.6</td>
<td>102,100</td>
<td>59,554,000</td>
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</table>

AND MEDICINES REPRESENT THE SMALLEST SHARE OF SPENDING ON CANCER CARE

Cancer healthcare costs as a proportion of total costs and distribution of direct costs of cancer on inpatient care, ambulatory care and drugs.

<table>
<thead>
<tr>
<th>Country</th>
<th>Year</th>
<th>Cancer costs as % of total healthcare costs</th>
<th>Inpatient care</th>
<th>Ambulatory care</th>
<th>Drugs</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
<td>2002</td>
<td>5.4%</td>
<td>67%</td>
<td>16%</td>
<td>8%</td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>67% + 9% other</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sweden</td>
<td>1996</td>
<td>6%</td>
<td>94%</td>
<td>Not included in the estimate</td>
<td>6%</td>
<td>100%</td>
</tr>
<tr>
<td>Sweden</td>
<td>2002</td>
<td>10%</td>
<td>75% (hospital)</td>
<td>15% (including home care)</td>
<td>10%</td>
<td>100%</td>
</tr>
<tr>
<td>France</td>
<td>1998</td>
<td>5.3%</td>
<td>83%</td>
<td>7% + 6% transport costs</td>
<td>4%</td>
<td>100%</td>
</tr>
<tr>
<td>The Netherlands</td>
<td>1994</td>
<td>4.6%</td>
<td>60%</td>
<td>18%</td>
<td>11%</td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>+ 11% non-hospital institutional care</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

INNOVATION CANNOT STOP: CANCER INCIDENCE IS INCREASING WORLDWIDE IN PEOPLE 55 AND OVER

CAGR: Compound Annual Growth Rate

CANCER INCIDENCE AND MORTALITY IN EUROPE ARE PREDICTED TO INCREASE BY 2020

Mortality from and incidence of cancer by main types in the European Region, 2010 and projected for 2020

“Cancer poses a considerable economic burden not only to healthcare systems [in Europe] but to other areas of the economy, including productivity losses through early mortality and time off work, and relatives who have to forego work/leisure to care for cancer patients.”

Dr Ramon Luengo-Fernandez, Oxford University, leader of a study on the true cost of cancer for the EU

The Stakes for Europe

There are between 6000 and 8000 rare diseases and despite their rarity, such diseases affect 6–8% of the population, representing approximately 30 million EU citizens.
PROGRESS & PROSPERITY

MEDICAL INNOVATION LEADS TO GREATER ECONOMIC GROWTH AND PROSPERITY.

Medical innovation leads to improved health outcomes, higher productivity, reduced disability, and greater economic value to society. The biomedical sector, including companies like Celgene, make significant contributions to Europe’s economy.
Over the last half century, improvements in health have been as valuable as all other sources of economic growth and productivity combined.

University of Chicago Economists
Kevin Murphy, Ph.D., and Robert Topel, Ph.D.
LIVING LONGER, BETTER AND HEALTHIER BENEFITS SOCIETY

A 1% REDUCTION in CANCER-related DEATHS in the USA

Improves quality of life

$500 billion IN SOCIETAL VALUE

Maximizes life expectancy

Boosts the economy

*Extended survival contributes to economic stimulus by affording people more time to purchase and enjoy leisure activities

Murphy and Topel. J Political Econ 2006;114(5):871–904
The European-based pharmaceutical industry makes a major contribution to the EU, not just in economic terms but also in terms of high-quality employment, investment in the science base and in terms of public health.

Pharmaceuticals in Europe: Facts and Figures, The European Commission, DG Enterprise and Industry

NEARLY A QUARTER OF ALL BIOPHARMACEUTICAL INNOVATION ORIGINATES IN EUROPE

Europe produces nearly one quarter of all new innovative therapies and biotech patents in the world.

GREAT SOURCE OF HIGH-QUALITY JOBS IN EUROPE

Each direct biopharmaceutical job supports 3–4 additional jobs in other sectors

BIOPHARMA JOBS
More than 700,000 jobs in the EU biopharmaceutical sector

TOTAL JOBS SUPPORTED
Over 2 million total EU jobs supported by the biopharmaceutical sector

INVESTMENTS IN MEDICAL INNOVATION YIELD SIGNIFICANT ECONOMIC BENEFITS TO EUROPE

The European Union’s top 5 pharmaceutical trading partners – EU Exports 2012

In 2012, medical innovators contributed a trade surplus of 80 billion euros to the EU

THE BIOPHARMACEUTICAL SECTOR IS THE MOST R&D-INTENSIVE IN THE EU

Ranking of industrial sectors by overall sector R&D intensity
(R&D as percentage of net sales – 2011)

Pharmaceuticals & biotechnology
Software & computer services
Technology hardware & equipment
Leisure goods
Health care equipment & services
Electronic & electrical equipment
Automobiles & parts
Aerospace & defence
All sectors
Chemicals
Industrial engineering
General industrials
Banks
Fixed line telecommunications
Food producers
Oil & gas producers

Note: Data relate to the top 1,500 companies with registered offices in the EU, Japan, the USA and the Rest of the World, ranked by total worldwide R&D investment (with R&D investment above €34.9 million)

…biomedical and clinical research generates more than 50 per cent of the research output in Europe, as measured by the number of journal papers and citation.

Professor Roger Bouillon of the European Medical Research Councils Core Group

WHY INCENTIVISE THE INNOVATORS? A CASE STUDY

1990

$3.8 billion
US investment in the Human Genome Project

2003

ROI on Human Genome Project: $796 billion
310,000 jobs

Medical innovation is turning knowledge about disease mechanisms at the genetic and cellular level into products that cure or prevent illness. Medical innovation in particular brings about a virtuous cycle of better health, longer life and greater prosperity that in turn stimulates additional investment in even more advanced innovations for preventing and treating disease.
All too often, health is still primarily perceived as a cost, a drain, a burden – and not as an investment for the future which can pay great dividends.

Tonio Borg, European Commissioner for Health and Consumer Policy

INNOVATION REQUIRES INVESTMENT, WHICH LEADS TO FURTHER INNOVATION

Innovation
Celgene has a proven track record of delivering better outcomes with better healthcare through innovation

Investment
Innovation results from continuous investment by both public and private actors, including biopharmaceutical companies such as Celgene

Access
Access and reimbursement for current innovative therapies fund investment in future innovation

Commitment
The unprecedented survival results reported with Celgene’s innovative therapies are direct results of the company’s commitment to improving the lives of patients worldwide

Virtuous Cycle of Innovation

Improvements in healthcare are an important source of gains in health, longevity and productivity globally.

THE COST OF THE CURE: EXPLODING THE MYTHS

THE VIRTUOUS CYCLE OF INNOVATION & HOW TO SUSTAIN IT

PROGRESS & PROSPERITY
MEDICAL INNOVATION IS A SELF-SUSTAINING PROPOSITION

Developing a new medicine takes an average of 10–15 years; the Congressional Budget Office reports that “relatively few drugs survive the clinical trial process.” Innovative therapies have a limited time in their lifecycle to recapture investment and fund future innovation.
MAXIMIZING THE PROMISE OF SCIENCE:
5,000+ MEDICINES IN DEVELOPMENT IN 2011

3,436
Cancer
142 Lung cancer
95 Breast cancer
383 Blood cancers
63 Colorectal cancer
105 Skin cancer

1,795
Rare diseases

1,586
Infectious diseases

1,247
Neurological disorders

650
Cardiovascular disorders

731
Immunological conditions

412
Diabetes mellitus

204
HIV/AIDS and related conditions

454
Musculoskeletal Diseases

69
Liver disease and related conditions

Reflects compounds in all phases of development, including having been filed with the FDA, or approved by the FDA, but not yet on the market in the U.S. as of January 2013. Medicines with multiple indications may appear in more than one category, but in the total number (5,000+ medicines), only the initial indication is counted.

The Orphan Drug Regulation (EC) 141/2000, together with national incentives, have contributed to the discovery and development of much needed treatments. Orphan drug expenditures are expected to account for less than 5% of total European pharmaceutical expenditures by 2020, confirming both the affordability of orphan drugs and the sustainability of this new model for healthcare systems.
IT TAKES 12 YEARS OR LONGER TO BRING A NEW TREATMENT TO PATIENTS

The drug development pyramid

- **Basic Research**
  - 0 Years
  - 10,000-30,000 Substances
- **Development**
  - 1-2 Years
  - 2-5 Phases

  - **Phase I**
    - 1 Year
    - 10-20 Substances
  - **Phase II**
    - 2-5 Years
  - **Phase III**
    - 5-10 Years
  - **Phase IV**
    - 10 Years or longer

- **Introduction Registration**
  - 11-12 Years
  - Product surveillance

EVEN AFTER APPROVAL, FEW MEDICINES RECOVER THEIR R&D COSTS

New medicines introduced between 1990 and 1994, grouped by tenths, by lifetime sales

Just 2 in 10 approved medicines produce revenues that exceed average R&D costs

Note: Prescription drug development costs represent after-tax out-of-pocket costs in 2000 dollars for drugs introduced from 1990–94. The same analysis found that the total cost of developing a new drug was $1.3 billion in 2006. Average R&D costs include the cost of the approved medicines as well as those that fail to reach approval.

DEVELOPING NEW CANCER THERAPIES TAKES EVEN LONGER, WITH LOWER SUCCESS RATES

WORTH THE INVESTMENT: MORE PEOPLE ARE SURVIVING AS MORE NEW THERAPIES ARE DEVELOPED (US DATA)

Number of cancer therapies

Cumulative number of new cancer therapies

Cancer survivors

1980 1990 2000 2010

Millions of people


THE GENERICS MARKET IS PART OF THE VIRTUOUS CYCLE AND DEPENDS ON INNOVATION

Share of generics in the total pharmaceutical market, 2011 (or nearest year)

1 Reimbursed pharmaceutical market.

PUBLIC POLICIES CAN HAVE DIRECT CONSEQUENCES FOR CANCER PATIENTS

USA

Average survival of patients diagnosed with cancer

11.1 years

EUROPE

Average survival of patients diagnosed with cancer

9.3 years

Differences in US costs reflect more rapid uptake of new technologies that may lead to difference in survival.

CELGENE IS COMMITTED TO THE VIRTUOUS CYCLE OF INNOVATION IN EUROPE

Over half our clinical trial sites and patients in Celgene’s global programme established in Europe

- We have been conducting clinical trials in Europe since 2004, two thirds of which are still ongoing

- More than 5,000 patients have benefited from innovative treatments in the framework of our clinical research in 27 countries across Europe

Number of patients enrolled in CTs

- 1 - 100
- 101 - 400
- 401 - 800
- 801 +

European countries with patients enrolled in Celgene clinical trials since 2004
Celgene’s has already developed innovative therapies that bring tremendous benefits to providers, patients and healthcare systems worldwide:

- Reducing hospitalisations
- Preventing disability
- Eliminating surgeries
- Improving quality of life
- Extending survival

Celgene R&D investment in millions of dollars non-GAAP

The products represented as in development and found in the product pipeline are intended for investors and members of the media to provide general information on Celgene. This information is not represented to be a complete description and is subject to change without notice. Celgene Corporation may from time to time update this information but does not warrant that will take place at any particular time nor assume any obligation to update this information.
Based on Kantar Health’s CancerMPact® epidemiology database for the US, EU5 and Japan. 2011

**CELGENE RESEARCH SPANS BROAD RANGE OF HAEMATOLOGICAL MALIGNANCIES**

**Most prevalent haematologic cancers**

<table>
<thead>
<tr>
<th>Disease</th>
<th>US, EU-5, Japan Prevalence (000s)</th>
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<tbody>
<tr>
<td>DLBC</td>
<td>260</td>
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<tr>
<td>Follicular Myeloma</td>
<td>225</td>
</tr>
<tr>
<td>CLL</td>
<td>180</td>
</tr>
<tr>
<td>MDS</td>
<td>170</td>
</tr>
<tr>
<td>ALL</td>
<td>120</td>
</tr>
<tr>
<td>AML</td>
<td>75</td>
</tr>
<tr>
<td>CML</td>
<td>55</td>
</tr>
<tr>
<td>Hodgkin Lymphoma</td>
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<tr>
<td>MCL</td>
<td>25</td>
</tr>
<tr>
<td>PTCL Myelofibrosis</td>
<td>20</td>
</tr>
<tr>
<td>CTCL</td>
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250,000 People will die this year from haematologic cancers that are considered orphan diseases
# Celgene’s Leading Haematology Pipeline

## Haematology

<table>
<thead>
<tr>
<th>Condition</th>
<th>Pre-clinical</th>
<th>Phase I</th>
<th>Phase II</th>
<th>Phase III</th>
<th>EU Regulatory Filing &amp; Approval</th>
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<td><strong>Multiple Myeloma (MM)</strong></td>
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<tr>
<td>Relapsed/Refractory MM</td>
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<tr>
<td>Newly diagnosed MM</td>
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<td>Maintenance MM</td>
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<td><strong>Myelodysplastic Syndromes (MDS)</strong></td>
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<td>MDS Deletion 5q</td>
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<td>Non-deletion 5q</td>
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<td>Lower-risk MDS</td>
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<td><strong>Acute Myeloid Leukemia (AML)</strong></td>
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<td>AML (20%-30% blasts)</td>
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<tr>
<td>AML (&gt;30% blasts)</td>
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<tr>
<td>Post-induction AML Maintenance</td>
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<tr>
<td>Combination Therapy for AML</td>
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<tr>
<td><strong>Myelofibrosis</strong></td>
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<td>Myelofibrosis</td>
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## CELGENE’S LEADING HAEMATOLOGY PIPELINE (continued)

### HAEMATOLOGY

<table>
<thead>
<tr>
<th>Disease</th>
<th>Pre-clinical</th>
<th>Phase I</th>
<th>Phase II</th>
<th>Phase III</th>
<th>EU Regulatory Filing &amp; Approval</th>
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<tbody>
<tr>
<td><strong>LYMPHOMA</strong></td>
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<tr>
<td>Relapsed/Refractory Peripheral T-cell Lymphoma</td>
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<tr>
<td>Maintenance Diffuse Large B-cell</td>
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<tr>
<td>Follicular Lymphoma</td>
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<td>First-line Peripheral T-cell Lymphoma</td>
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<tr>
<td>Relapsed/Refractory Mantle Cell Lymphoma</td>
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<tr>
<td>Relapsed/Refractory Diffuse Large B-cell</td>
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<tr>
<td><strong>CHRONIC LYMPHOCYTIC LEUKAEMIA (CLL)</strong></td>
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<tr>
<td>First-line CLL</td>
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<tr>
<td>Maintenance CLL</td>
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<tr>
<td>CLL Btk Inhibitor</td>
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<td><strong>ANAEMIAS</strong></td>
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<tr>
<td>Renal Anaemia with Metabolic Bone Disease</td>
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<tr>
<td>Diamond Blackfan Anaemia</td>
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<tr>
<td>Beta-thalassaemia</td>
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<td>MDS</td>
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<td>Beta-thalassaemia</td>
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<td>MDS</td>
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### CELGENE’S EXPANDING ONCOLOGY PIPELINE

#### ONCOLOGY

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<thead>
<tr>
<th>Condition</th>
<th>Pre-clinical</th>
<th>Phase I</th>
<th>Phase II</th>
<th>Phase III</th>
<th>EU Regulatory Filing &amp; Approval</th>
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</thead>
<tbody>
<tr>
<td>Metastatic Breast</td>
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<td>First-line Advanced Pancreatic</td>
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<td>First-line Advanced Non-small Cell Lung</td>
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<td>First-line Metastatic Melanoma Relapsed/</td>
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<tr>
<td>Refractory Small Cell Lung Cancer</td>
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<td>First-line Metastatic Breast</td>
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<tr>
<td>Dual TORK Inhibitor</td>
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<td>Nucleoside Analogue</td>
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<td>Dual TORK/DNA PK Inhibitor</td>
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<tr>
<td>Pleiotropic Pathway Modulator</td>
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2. THE COST OF THE CURE: EXPLODING THE MYTHS

3. PROGRESS & PROSPERITY

4. THE VIRTUOUS CYCLE OF INNOVATION & HOW TO SUSTAIN IT
## CELGENE’S INFLAMMATION AND IMMUNOLOGY EMERGING PRODUCT PIPELINE

### INFLAMMATION & IMMUNOLOGY

<table>
<thead>
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<th>Condition</th>
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<th>Phase II</th>
<th>Phase III</th>
<th>EU Regulatory Filing &amp; Approval</th>
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<tbody>
<tr>
<td>Psoriasis</td>
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<td>Ankylosing Spondylitis</td>
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<td>Behçet’s Disease</td>
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<td>Rheumatoid Arthritis</td>
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<td>Systemic Sclerosis</td>
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WE ARE AT A CRITICAL CROSSROADS FOR MEDICAL INNOVATION

A MAJOR PARADOX

The potential of science is greater than ever …

But the outlook for investment has never been more uncertain

R&D investment = longer, better, healthier lives
WHAT’S AT STAKE…

Today’s investments in healthcare and R&D can create a world free from cancer for our children and our children’s children.
The best way to \textit{predict} the \textit{future} is to \textit{invent} it

\textit{The Virtuous Cycle of Innovation & How to Sustain It}

Remark taken from Kay's address before the 20th annual meeting of the Stanford Computer Forum

\textbf{Alan Kay, Computer Scientist}