

Consumer Health Market Trends **SHOW CONTINUED INTEREST IN E-BASED SOURCES**



The intersection of broadband, consumer-driven health, community, and content has created the perfect storm for the next generation of e-health. Consumers are in control and are increasingly seeking timely and efficient access to the information and tools that will help them manage their personal health and that of their friends and family, says Mark Bard, President of Manhattan Research LLC.

The population of consumers using the Internet as their primary learning channel for health information continued an upward trajectory in 2005, with 31.6 million consumers reporting that the Internet is their first stop when seeking more information. This is one of five key market trends identified by Manhattan Research LLC in the release of its latest iteration of Cybercitizen Health Version 5.0. The service is based on a telephone study conducted with a random sample of 4,031 U.S. adults.

Cybercitizen Health identifies four additional consumer trends:

- There is a new market segment that innovative marketers must embrace in the years ahead: the "on demand" health consumer. These consumers are significantly more likely than the average health consumer to engage in a wide range of interactive activities and embrace the ability to access

and control health content on their terms.

- Although consumers clearly state there is a need for an improved search-engine experience, the use of search engines for health and pharmaceutical information experienced strong growth — with

95% of consumers looking for health information reporting any use of an engine in 2005.

- A relatively small group of health consumers (about 20 million) have a significant impact on the rest of the population. Specifically, these consumers have considerable impact on those in their "zone of influence," including spouses, children, and elderly parents, as well as extended family and friends.

- The population of consumers sourcing the online channel to learn about pharmaceutical products in response to DTC advertising has increased significantly over the past year. In 2005, more than 22 million consumers actively went online in response to DTC ads they saw through television and other traditional media channels. Looking at the crossover between key market trends, the "on demand" health consumers are not only significantly more likely to seek additional information online in response to advertisements but also to request a prescription drug from their personal physician.

World Pharmaceutical Packaging Demand **TO EXCEED \$30 MILLION IN 2009**

World pharmaceutical packaging demand is projected to increase 6.3% annually to more than \$30 billion in 2009. The developed countries of Western Europe, the United States, and Japan will continue to account for more than 70% of demand. China is expected to provide the strongest growth opportunities, based on rapidly expanding pharmaceutical manufacturing capabilities and the phasing-in of an extensive government program designed to upgrade the quality and integrity of nationally produced medicines. Among other major developing economies, India and Brazil will generate strong gains;

together, however they will continue to comprise only a relatively small percentage of the total world pharmaceutical packaging market in 2009. These and other trends are presented in World Pharmaceutical Packaging, a new study from The Freedonia Group Inc.

According to the report, the United States will remain the largest consumer of pharmaceutical packaging as its advanced drug-producing sector introduces new sophisticated therapies with specialized packaging needs. Growth in Western European demand will reflect upgraded government standards requiring unit dose and high barrier packaging for many types of medications. An easing of government-imposed drug price controls will impact favorably on sales of pharmaceutical packaging in Japan, with demand rebounding from the depressed market conditions prevalent over the past decade.

Prefillable inhalers and prefillable syringes will generate the fastest growth opportunities among all pharmaceutical packaging products based on performance advantages in drug delivery. Plastic bottles will sustain the largest share of demand based on low cost, versatility, availability, and ongoing quality and design improvements. Expanding applications in both solid and liquid oral medications will create above average growth opportunities for these containers throughout the world.

Pharmaceutical blister packaging will generate strong growth in global demand, based on its adaptability to unit dose, clinical trial, compliance, institutional, and over-the-counter drugs. The world market for pharmaceutical closures and accessories will grow 5.1% annually to \$9.5 billion in 2009. The fastest gains will be with child-resistant, senior-friendly compliance-enhanced prescription containers; high visibility labels; and tamper-evident accessories.

U.S., Japan, South Korea, and Germany **DOMINATE NANOTECHNOLOGY MARKET**

The United States, Japan, South Korea, and Germany currently dominate the nanotechnology market but, Taiwan and China will challenge these countries for leadership in the next seven years. This is the conclusion of a Lux Research Inc. report called Ranking the Nations: Nanotech's Shifting Global Leaders.

For this report, Lux Research assessed 14 countries across four continents. Each nation was measured on 17 metrics across two axes: nanotechnology activity, measuring the raw material that researchers and businesses in a country have to work with in commercializing nanotechnology; and technology development strength, measuring the country's demonstrated ability to develop its economy through science and technology in general.

The report found that the United States, Japan, South Korea, and Germany rank as "dominant," scoring

WORLD PHARMACEUTICAL PACKAGING DEMAND (\$ IN MILLIONS)					
	% ANNUAL GROWTH				
	1999	2004	2009	04/99	09/04
World Pharm Packaging Demand	\$16,800	\$22,300	\$30,200	5.8%	6.3%
North America	5,355	7,745	11,000	7.7	7.3
Western Europe	5,460	6,850	8,400	4.6	4.2
Asia/Pacific	4,330	5,545	8,030	5.1	7.7
Other Regions	1,655	2,160	2,770	5.5	5.1

Source: The Freedonia Group Inc., Cleveland.
For more information visit freedoniagroup.com.

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David Lackner

Many countries are investing millions or billions of dollars in primary research on nanotechnology. But the true winners — those who reap the rewards of those huge investments — will be the ones that discover how to incorporate nanotechnology breakthroughs into new manufacturing techniques, medical treatments, and finished products, says David Lackner, Senior Analyst at Lux Research Inc.

high on both axes. Taiwan, Israel, and Singapore rank as “niche players,” scoring low on nanotechnology activity, but high on the technology development strength needed to convert that activity into jobs and GDP. The United Kingdom and France come out as “ivory tower” nations, scoring high on nanotechnology activity but low on technology development strength. China, Canada, Australia, Russia, and India are in nanotechnology’s “minor league,” scoring low on both axes.

The report emphasizes that countries’ competitive positions in nanotechnology are changing rapidly, and it forecasts that rankings will change over the next seven years. The report predicts that Taiwan will leap into a dominant role on the basis of its large nanotech spending, extremely well-coordinated nanotech initiatives through its Industrial Technology Research Institute, and ability to ramp up commercialization by tapping mainland Chinese labor and facilities. The report also predicts that China will approach “dominant” status; the country has moved from fifth place to second in nanotechnology publications over the last 10 years, and it spends more government money on nanotech research at purchasing-power parity than any other country except the United States.

Additionally, some Western nations’ positions will erode by 2012 unless they make significant strategy swings.

PHYSICIAN PREFERENCE FOR SPECIALTY REPS At All-Time High

According to a recent survey by Verispan — Specialty Reps 2005: A Preferred Force? — physicians’ preference for specialty reps over general reps is at an all-time high. The study, which surveyed more than 5,300 doctors across 24 specialties and captured their perspectives regarding the performance of pharmaceutical specialty reps and medical science liaisons, found that 94% of physicians who see specialty sales reps prefer them over general reps. In fact, 51% of all doctors said they see specialty reps exclusively. This represents a significant increase from 2000, when 32% of respondents reported a preference toward specialty reps. While doctors’ preferences for specialty reps has grown, the study shows

that the need for specialty reps has lessened in recent years.

The study also found that specific specialty rep behavior can contribute to their performance. For example, 60% of physicians said specialty reps have more product knowledge than general reps, and 70% said specialty reps are better prepared to answer complex questions. Furthermore, physicians rated specialty rep-led educational seminars as the most effective activity in terms of promoting interest in a product.

Study Predicts ANTIFUNGAL MEDICATIONS Ripe for OTC Switch

Some forms or doses of medications used to treat fungal infections may soon be available to consumers in some countries without a prescription, according to a study by Kline & Co. While several categories of drugs are currently being considered for the switch from prescription to over-the-counter sale in many different countries, a number of factors have converged to make the antifungal product class a leading candidate.

“Several switch candidates in the antifungal category have long histories with good safety records, and fungal infections are generally straightforward for patients to self-diagnose,” says Laura Mahecha, industry manager for the healthcare practice of Kline’s research division.

Several of the potential switches for antifungal products are likely to occur in Germany in the next five years, according to Kline’s International Rx-to-OTC-Switch Forecasts. Products such as Novartis’ Lamisil have moderate chances of switching in Germany, where the patent is set to expire in 2006. Other products that have expired patents in Germany may also switch, including Pfizer’s Diflucan and Johnson & Johnson’s Nizoral. Antifungals may also see switch activity in Australia and New Zealand in the near future, the study suggests. These two countries are expected to initiate a joint regulatory process in July 2006, in part to facilitate Rx-to-OTC switches.

Pharmaceutical and Biotechnology Companies ADOPT OUTSOURCING TO COMBAT RISING COSTS

Lengthy drug-discovery times and the soaring costs of drug development — currently estimated at about \$800 million — have pharmaceutical and biotechnology firms under immense pressure. Intensifying the financial strain are increasingly complex clinical-trial requirements and high drug-failure rates,

with only 15% of new drugs entering development expected to reach the market. Therefore, to control rising costs and generate new breakthroughs, companies are looking to outsource their drug-discovery processes.

This is the finding of Frost & Sullivan’s recent analysis of the European drug-discovery outsourcing market.

As a result, pharma companies are increasingly eager to form alliances with biotechnology firms, university research centers, contract research organizations, niche vendors, and general service providers. Such partnerships are facilitating the drug-discovery process. For instance, CROs provide expert geographic coverage, which enables companies to allow clinicians from different locations to simultaneously view and discuss data, thereby improving testing, turnaround times, and ultimately data quality.

Consequently, the scope of outsourcing has expanded with the trend to outsource processes — such as finance/accounting, clinical-trial data management, drug manufacturing, logistics and human resources, and parts of IT — gaining momentum. Accordingly, the European drug-discovery outsourcing market is forecast to expand from \$3.2 billion in 2004 to \$5.1 billion by 2011.

Frost projects that by 2010 more than 40% of R&D will be outsourced to more specialized firms as a way to efficiently maintain a strong and vital pipeline for new blockbuster drugs. As the European drug-discovery outsourcing market expands, firms that are able to reach out to focused, research-oriented speciality companies that complement their traditional processes will emerge as leaders.

“Companies must become more comfortable about sharing some control over noncore processes, with the risk of errors and delays, with their ability to safeguard proprietary knowledge, and with the impact of outsourcing on regulatory compliance,” says Amarpreet Dhiman, research analyst at Frost. “It is important that the various risks are identified, understood, and measured, so that companies can successfully pool their disciplines to their development partners.”

Clinical Diagnostics Market in China POISED FOR STEADY GROWTH

With steady growth over the last 10 years and a current assessment at \$703 million, the Chinese in




Amarpreet Dhiman

Outsourcing can complement the in-house level of expertise and experience, giving access to technological innovations, thus leading to reduced complexities within R&D, providing rapid access to greater R&D resources, therapeutic expertise, and bringing about alignment with diagnostic testing for safer and more effective therapies, says Amarpreet Dhiman, Research Analyst at Frost & Sullivan.

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in vitro diagnostics market offers an increasingly attractive opportunity for manufacturers and distributors. This is the conclusion of a study by Kalorama Information called Clinical Diagnostics in China: Market Sector Analysis and Participant Directory.

A changing Chinese healthcare environment with emphasis on privatization and China's accession to the World Trade Organization — with its resulting reduction in tariffs and easing of distribution regulations — has opened the doors for clinical diagnostics to be one of the most promising emerging markets in the world.

The study predicts that recent shifts in Chinese government health policy have set the stage for a free-market economy ripe with potential for expansion in diagnostics, both reagents and instruments. These shifts include the ending of Ministry of Health hospital evaluations, the ceasing of state support for hospital facilities, and the phasing-out of free, government-supported medical treatment along with movement

toward personal/corporate health-spending responsibility.



While there will continue to be pitfalls in the Chinese system, such as challenges with IVD product registration, the overall medical need and economic drivers are creating a growth market of unprecedented value, says Steven Heffner, Publisher at Kalorama Information.

GENE THERAPY EXPECTED TO GROW Despite Challenges

The approval of Gendicine in China — the first gene therapy to be approved in the world — has sparked massive pressure on the United States to gain approval of a gene therapy.

According to a recent analysis from Frost & Sullivan, growth within the U.S. gene therapies market is expected to increase at a steady rate for the next five years despite market challenges.

The gene therapy market is expected to generate revenue of \$125 million in 2006 and increase to \$6.5 billion in 2011, increasing at an annual rate of 156%. The cancer segment will likely contribute the most growth, with the introduction of Advexin in 2006 and a number of subsequent approvals.

"Medico-ethical issues delay universal acceptance of gene therapies," says Raghunath Tantry, research analyst for Frost & Sullivan. "While it may seem extremely pessimistic to list all of the medico-ethical concerns of gene therapy, these concerns are real and must be considered carefully by all participants that aspire for a significant share of the market."

Along with medico-ethical concerns, the gene therapy market is challenged by regulatory issues that slow research momentum, pressure for results as investors gain interest, public concerns about real and speculative high costs for gene therapy, com-

munication gaps that limit public support, and technological obstacles that limit research results.

Frost's analysis suggests that communication strategies should be formulated to increase awareness of gene therapy and, ultimately, lead to greater acceptance. Analysts believe future trends will include: more R&D in delivery systems/vectors selection and design, expanding indications in various sectors, increasing importance of long-term safety issues, the promotion of gene therapy as an integral player in therapy, and a greater amount of strategic alliances or partnerships in R&D and marketing.

Survey Shows THE POWER OF MOBILE CME

In a recent survey, Epocrates Inc. examined the importance of mobile continuing medical education and the technology's ability to impact physicians' practices.

The company surveyed 832 physicians who had completed at least one mobile CME activity using an Epocrates mobile CME device.

According to Epocrates, 67% of physicians surveyed indicated that information learned via a mobile CME course changed some aspect of their patient care, and more than 57% of physicians indicated that it has influenced their daily practice.

Additionally, survey respondents found the technology valuable and easy to use: 98% found the course information to be clinically useful, and 87% said that the mobile CME was easy to use or very easy to use, compared with other forms of CME.

There are still significant holes in mobile CME coverage, according to Epocrates. Specifically, 44% of

survey respondents indicated the greatest need was for more specialty-focused CME delivered via mobile devices.

CHINESE-AMERICAN CONSUMER HEALTHCARE MARKET HOLDS GROWTH OPPORTUNITIES FOR MARKETERS

Kang & Lee Advertising has released the first national Chinese-American consumer healthcare and pharmaceutical study.

The study, fielded by Simmons Market Research, was developed to match the content of the Health & Medicine section of Simmons' semi-annual National Consumer Survey (NCS), which is fielded in both the general and Hispanic markets.

The research report provides data about Chinese-American consumers' usage (by category and brand) of over-the-counter pharmaceuticals, including vitamins and mineral supplements, analgesics (both adult and pediatric), cold remedies, heartburn and indigestion aids, laxatives, cough syrups, pain-relieving rubs and liquids, bandages and topical antibiotic remedies, products aiding vision, and other products.

The study found that Chinese Americans over-index their counterparts in both the general and Hispanic markets for usage of 10 out of the 12 categories surveyed, including all of the cold and flu related categories.

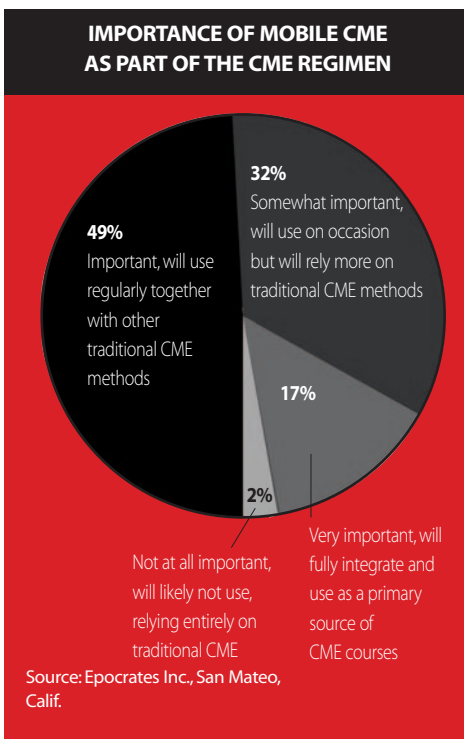
Also, the study provides critical benchmarks for the incidence and current treatment patterns for an exhaustive list of medical ailments and diseases, including usage of specific prescription pharmaceutical brands within the last 12 months.

In this area, the study found that like other groups, Chinese Americans are willing to ask their doctors for advice and recommendations. It also found that they under-index other groups for key barriers to use, such as the impact of potential side effects.

The study also queried a wide range of consumer attitudinal measures with respect to healthcare and treatments, ranging from the propensity of consumers to get regular checkups, to preference for Chinese versus non-Chinese medical treatments



This study brings into sharp focus a snapshot of one of America's most highly health-aware, affluent, and insured patient segments, one that we expect will be of great interest to savvy marketers who are always looking for incremental growth opportunities, says Larry Moskowitz, VP of Strategic Services at Kang & Lee Advertising.



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and doctors, to key sources used by Chinese consumers to obtain health and pharmaceutical information.

In this arena, the study counters some conventional myths, and shows that, despite the ancient history of traditional Chinese medicine, Chinese Americans actually dramatically under-index both general and Hispanic consumers for use of alternative treatments.

Similarly, while these consumers are relatively recent immigrants, many of whom experience varying degrees of linguistic and other social barriers in the United States, the study finds that Chinese Americans still over-index the general market and Hispanic consumers for treatment by many types of medical specialists.

Promotion **TRENDS** TO MANAGED-CARE PHARMACY EXECUTIVES

New prescription drugs for the treatment of diabetes and nerve pain were among the most promoted prescription pharmaceutical products to leading managed-care pharmacy directors during the third quarter of 2005, according to data from Cognet-X Inc.'s PAR-Rx (Promotional Assessment Research) Report.

PAR-Rx panelists reported that the product most promoted to them during the third quarter was the combination cholesterol reducer Vytorin, which is marketed by Merck/Schering-Plough Pharmaceuticals. Other top-promoted cholesterol reducers in the third quarter were Pfizer's Lipitor and AstraZeneca's Crestor.

Cognet-X also found that in the third quarter, two of the most highly promoted products, Byetta and Symlin, were diabetes treatments promoted by the same company, Amylin Pharmaceuticals Inc. Pfizer Inc.'s Lyrica, which is approved to treat nerve pain, as well as pain due to diabetic peripheral neuropathy and post-herpetic neuralgia, ranked fourth in terms of contacts.

Additionally, the third quarter 2005 PAR-Rx Report included its twice-yearly Corporate Assessment Total Rankings component, identifying the top corporations serving managed-care pharmacy executives.

At the top of the list, Novartis Pharmaceuticals Corp. retained its first-place ranking in "overall needs" for the seventh consecutive reporting period.

GlaxoSmithKline, Schering-Plough, and Amylin have all made significant strides. These companies moved into the top 10 in the third quarter, although none were among the top companies in first-quarter 2005.

GlaxoSmithKline received high marks for its disease management-related programs, which PAR-Rx panelists believed were aligned with their managed-care organizations' goals to help patients.

Schering-Plough was lauded because of its will-

TOP 10 PHARMA COMPANIES IN THE "OVERALL" NEED CATEGORY FOR 3Q 2005

- 1 Novartis Pharmaceuticals Corp.
- 2 AstraZeneca Plc.
- 3 GlaxoSmithKline
- 4 Novo Nordisk Pharmaceuticals
- 5 Sanofi-Aventis
- 6 Genentech
- 7 Schering-Plough Corp.
- 8 Amylin Pharmaceuticals Inc.
- 9 Abbott Laboratories
- 10 The Procter & Gamble Co.

Source: Cognet-X, Feasterville, Pa.
For more information, visit cognetx.com.

ingness to support key clinical programs, as well as its account personnel. Amylin was praised for its

PRODUCTS WITH THE MOST CONTACTS TO PAR-RX PANELISTS IN 3Q 2005

- 1 Vytorin
- 2 Lexapro
- 3 Byetta
- 4 Lyrica
- 5 Asmanex, Diovan, Lipitor (tie)

Source: Cognet-X, Feasterville, Pa.
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proactive managed-care strategy in launching the diabetes products Byetta and Symlin.

According to Cognet-X Chief Strategist Bryna Elder-Munro, pharmacy executives appreciate pharmaceutical companies that provide strong clinical data for their products and offer components that help support internal MCO programs.

Follow up

COGNET-X INC., Feasterville, Pa., offers market research, consulting, and software-development services to the pharmaceutical industry. For more information, visit cognetx.com.

EPOCRATES INC., San Mateo, Calif., provides clinical solutions at the point of care and deploys leading-edge technologies that enable communication. For more information, visit epocrates.com.

THE FREEDONIA GROUP INC., Cleveland, is an international business research company that publishes more than 100 industry research studies annually. For more information, visit freedoniagroup.com.

FROST & SULLIVAN, San Antonio, is a global growth consulting company, with industry expertise that integrates growth consulting, growth partnership services, and corporate management training to identify and develop opportunities. For more information, visit frost.com.

KALORAMA INFORMATION, New York, a division of MarketResearch.com, supplies independent market research for the life sciences. For more information, visit kaloramainformation.com.

KANG & LEE ADVERTISING, New York, is a multicultural marketing-consulting and communications agency that specializes in the Asian-American markets. For more information, visit kanglee.com.

KLINE & CO., Little Falls, N.J., is an international business consulting and market-research firm serving the life-sciences, consumer products, specialty chemicals, and energy industries. For more information, visit klinegroup.com.

LUX RESEARCH INC., New York, is a nanotechnology research and advisory firm. For more information, visit luxresearchinc.com.

MANHATTAN RESEARCH LLC, New York, is a marketing-information and services firm focusing on trended physician and consumer research. For more information, visit manhattanresearch.com.

VERISPAN, Yardley, Pa., a healthcare informatics joint venture of Quintiles Transnational Corp. and McKesson Corp., provides a broad array of information products and services to the healthcare industry. For more information, visit verispan.com.