The Internet has quickly become very relevant to P&T committees, in part because of the evolution of online pharmacies. Twenty-five years ago, the Internet was unknown to the general public. However, since the introduction of the World Wide Web (hereafter referred to as the Web) in 1991, there has been a phenomenal growth in the use of the Internet (Figure 1). Today, some 127 million adults in the U.S. use the Web, and an estimated 70% of them have searched for health information online in the past year.\(^1,2\) It is estimated that the online user population will continue to grow dramatically and shift to better reflect the demographics of the U.S. population as a whole. For example, older U.S. residents are one of the fastest growing online user groups.\(^1\)

The increasing number of Internet users in the U.S. is a result of a number of factors, including the growth in the use of personal computers, advances in high-speed connectivity, and the availability of a broader range of online products and services. With this widespread societal use of the Internet, it is of no surprise that a broad and growing array of health care information, services and products, including pharmaceuticals, are being offered online. It is important for P&T committee members to recognize that consumers are using the Internet to search for health and drug information and obtain their prescription medications, as well as over-the-counter (OTC) products. Today’s online marketplace consists of many traditional health care players, such as health plans, who have established Web sites—as well as thousands of newly established “dot com” businesses offering various combinations of content, e-commerce, and connectivity to consumers (“B-to-C”) and to other businesses (“B-to-B”). Tens of thousands of health-related Web sites and millions of Web pages are readily available via search engines.

Through the Web, consumers can readily access health care content, which thus influences the way they interact with health care providers. Recently, the California HealthCare Foundation examined three groups of online consumers: the well, the newly diagnosed, and the chronically ill and their caregivers.\(^3\) The well online health consumers typically search for preventive medicine and wellness information in a manner similar to the way in which they look for other types of content, such as news. The newly diagnosed search aggressively for online information in the first few weeks following their diagnosis. The chronically ill and their caregivers were found to turn regularly to the Internet for help, looking for information about the newest treatments, drug information, and alternative medicine information. Although the Internet is generally viewed as a catalyst for the growing trend of consumers taking greater control over their health care decisions, some see it as a source of questionable products and information that is of variable quality. In a separate report, the California HealthCare Foundation found that search engines are often inefficient tools for locating relevant health information. They also found that the answers to questions that consumers should be able to find are often incomplete and not necessarily up to date, although when information is provided, it is generally accurate.\(^4\) When used properly, the Internet educates and informs consumers, while saving them time and money.

The first online pharmacies, including drugstore.com, PlanetRx.com, and Soma.com, began to appear early in 1999. By July of that year, several hundred companies were selling prescription drugs on the Internet. Today, most of the early online pharmacies have consolidated, changed their business strategies, or disappeared.\(^5\) The landscape is now dominated by a small number of surviving online pharmacies who, like drugstore.com, are allied with brick-and-mortar pharmacies and aided by pharmacy benefit management (PBM) companies or health plans that have adapted the mail-order pharmacy model to the Internet. Two of the major driving forces behind the consumers’ use of online pharmacies include the convenience and privacy of this new channel. However, some drug benefit designs restrict online pharmacies’ participation in retail pharmacy networks because they fear online pharmacies will erode their exclusive mail-service provider volumes.

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*Figure 1. Percentage of U.S. Households Online
Source: Jupiter Communications\(^10\)*
in instances where online pharmacies are excluded from retail pharmacy networks, consumers can save money on drugs not covered by some plans' formularies.

Increasingly, managed care organizations are recognizing the role of the Internet for meeting their members' needs. Today's consumers are more sophisticated and knowledgeable about health issues and even about the complexities of drug benefit designs, such as tiered copayments and preferred drug lists. Many health plans post their drug formularies.

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Health care providers have increasingly adopted the Internet as a tool to support their practice needs. Among physicians, the most common professional uses of the Web are 1) to seek medical content related to diseases, conditions, and treatments; 2) to utilize continuing medical education services; and 3) for professional shopping. Numerous Web sites exist for the provision of general or targeted health care information, news, and expert advice to health care professionals. Another application for health care providers is connectivity, or the facilitation of electronic transactions such as claims processing and the electronic transmission of prescription drug orders. Although online pharmacies are still in their infancy, with less than 3% of the three billion annual prescriptions paperless, the electronic transmission of prescription orders holds great promise for rectifying the inefficiencies and improving upon patient safety issues inherent in many present-day practices. The Internet can become an adjunctive care management tool for specific types of patients.

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**The Online Pharmacy**

**Table 1** Characteristics of Online Pharmacies that are Certified by the Verified Internet Pharmacy Practice Sites (VIPPS) Program.

<table>
<thead>
<tr>
<th>Requirements</th>
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<tbody>
<tr>
<td>• Pharmacy is licensed or registered in good standing with all applicable states</td>
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<tr>
<td>• Offer prescription drugs through home delivery or local pick-up at affiliated pharmacies</td>
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<tr>
<td>• Offer medication profiles and order status online</td>
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<tr>
<td>• Provide online ordering of refills and e-mail reminders to enhance medication compliance</td>
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<tr>
<td>• Provide explicit policies pertaining to privacy and confidentiality of records</td>
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<tr>
<td>• Offer access to licensed pharmacists</td>
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<tr>
<td>• Provide drug information including drug prices</td>
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<tr>
<td>• Verify prescription drug orders</td>
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<tr>
<td>• Verify the integrity, legitimacy and authenticity of prescription drug orders</td>
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<tr>
<td>• Maintain policies and procedures to ensure compliance with generic substitution laws and regulations</td>
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<tr>
<td>• Maintain patient medication profiles and performance of prospective drug utilization review</td>
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<tr>
<td>• Assure patient privacy and security of patient-specific information</td>
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<tr>
<td>• Provide meaningful patient consultation</td>
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<td>• Inform patients of drug recalls</td>
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<tr>
<td>• Store and ship prescription drugs in accordance with applicable laws and regulations</td>
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<tr>
<td>• Maintain a quality assurance/quality improvement program</td>
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Because these drugs are prescribed on the basis of an online questionnaire, the illegal practice of online prescribing bypasses the safeguards that are inherent in legitimate doctor–patient relationships. Foreign Web sites pose added risks (e.g., counterfeit products, contamination, and subpotent medications) because these sites are able to bypass Food and Drug Administration (FDA) supervision.

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Adapted from www.nabp.net
(e.g., persons with cardiovascular disease). Disease-specific interactive tools and information, as well as health risk assessments, can support health care delivery services.

Successful online pharmacies provide information and services that help patients comply with their drug therapies (see Table 1). Customers can choose to use refill reminders that notify them via e-mail when it is time to refill or renew prescriptions. The provision of e-mail refill reminders offers a low-cost, scalable approach towards addressing the problem of medication noncompliance. Up to half of all patients do not take their medications as prescribed, which often results in poor health outcomes and more costly care. With online pharmacies, customers can e-mail questions to pharmacists and search extensive databases to learn about drug usage, cautions, interactions, prices, and possible side effects. Some online pharmacies, such as drugstore.com, proactively notify their customers of product recalls and availability issues.

The vast amount of information about drugs that is available on the Internet (including drug prices), enables consumers to make more informed decisions and to save money. Many opportunities exist to further broaden the use of the Internet to meet the health content, communication, and commerce needs of consumers.

REFERENCES
1. Internet penetration has leveled out over the last 12 months. The Harris Poll #55. Harris Interactive, Rochester, NY, November, 2001.