



HEALTHCARE AND HUMAN SERVICES POLICY, RESEARCH, AND CONSULTING—WITH REAL-WORLD PERSPECTIVE.

National Hemophilia Foundation: Strategic Summit Report

Prepared for: National Hemophilia Foundation

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Executive Summary

The National Hemophilia Foundation (NHF) conducted a one-day summit meeting of hemophilia stakeholders in May 2012 to discuss and develop the basis for a five-year plan for hemophilia care in the evolving health care environment. NHF planned the summit in consultation with The Lewin Group, which also facilitated the event.

Teleconference interviews with experts conducted prior to the summit provided views on current and emerging issues and helped to identify the main topics for the summit agenda, which were: organization and delivery of services, financing of care, standards of practice & guideline development, outcomes research, and workforce. The 28 summit participants included key figures in hemophilia research, care, and policy, with representatives from such stakeholder groups as physicians, nurses, social workers, public and private payers, specialty pharmacy companies, hemophilia treatment centers (HTCs), patients and consumers, and researchers. Facilitated discussion yielded main findings for each topic, including main principles and desirable action items. The Lewin Group then organized and synthesized these into these categories of a five-year strategic plan: evidence, guidelines, comprehensive care, financing, and workforce.

Toward a Five-Year Strategic Plan

The highlights of the five-year strategic plan include the following:

Evidence: Strengthen Evidence Base for Hemophilia Care

- NHF should call for and support the generation of rigorous evidence pertaining to the safety, effectiveness, and cost-effectiveness of hemophilia care. Such evidence should pertain to therapies for hemophilia as well as to organizational, delivery, and payment models of hemophilia care.
- NHF should promote ongoing data collection pertaining to patterns of hemophilia care delivery, outcomes, and costs. Such data will inform policies regarding organization, delivery, and financing of care; resource allocation; and research priorities.
- NHF should promote funding of biomedical and health services research related to hemophilia by appropriate government agencies and the life sciences industry.
- NHF must remain actively engaged in setting national and international research agendas for hemophilia and other blood disorders. NHF should seek input on research priorities from its members and other stakeholders.

Guidelines: Generate and Maintain Evidence-Based Clinical Practice Guidelines

- NHF should sponsor the generation and maintenance of evidence-based clinical practice guidelines for hemophilia care. The process for generating and updating these guidelines should be consistent with the current state-of-the-art.
- NHF should re-examine the Medical and Scientific Advisory Council (MASAC) hemophilia care guideline development process, including use of a systematic approach, evidence gathering and appraisal, improving transparency and documentation, and other aspects.

- These guidelines should be updated based on new research findings, including from well-designed clinical trials and other studies, emphasizing evidence of patient outcomes and accounting for patient perspectives where appropriate.
- NHF should review and improve, as appropriate, the dissemination and awareness of the MASAC guidelines, including efforts targeted to hemophilia providers, patients, and payers, respectively.
- As the guideline development and dissemination process improves, NHF should seek to link these guidelines to standards of care, quality metrics, and provider accreditation.
- As part of developing and updating guidelines, NHF and MASAC should draw on the systematic reviews and related evidence gathering and appraisal to identify research gaps to inform priority setting in hemophilia research.

Comprehensive Care: Promote Comprehensive Hemophilia Care

- NHF should advocate and otherwise support hemophilia care that is guided by standards of practice, quality, and accreditation as determined by MASAC and other authoritative bodies.
- NHF should call on HTC and other providers to conduct or otherwise participate in ongoing data collection and original research to contribute to the evidence base for hemophilia care, including pertaining to safety, effectiveness, and cost-effectiveness of care, as well as patterns of utilization and costs.
- NHF should help to educate payers regarding the value of the comprehensive services provided by HTCs, including how appropriate use of these services can be cost-effective, e.g., due to cost offsets due to downstream savings.
- NHF should encourage patients and consumers to exercise their responsibilities for demanding high standards of care from hemophilia care providers.

Financing: Promote Adequate Financing of Comprehensive Hemophilia Care

NHF should promote a more adequately financed system for providing comprehensive hemophilia care to all patients, as needed.

- NHF should conduct or otherwise sponsor ongoing analyses of hemophilia care financing and patient utilization patterns to support policy-making about hemophilia care organization, delivery, and financing. The Patient Protection and Affordable Care Act (ACA) likely will dramatically alter the financing for hemophilia care and it is important for NHF to monitor the implementation and impact of relevant ACA provisions.
- NHF should promote greater transparency of hemophilia care revenue sources, funding allocations, and patient utilization patterns, in support of patient care decisions, payment policies, and policy-making regarding the organization and financing of hemophilia care.
- NHF should promote linking of financing mechanisms and funding levels for hemophilia care to accreditation based on achievement of quality standards.

Workforce: Strengthen the National Workforce for Hemophilia Care

- NHF should call attention to the workforce shortage and support ongoing analyses of the status and trends of the hemophilia workforce and the factors contributing to it.
- NHF should promote workforce development for clinical and non-clinical physicians and other professionals and volunteers to staff hemophilia care providers.
- NHF should promote efforts by public and private sector organizations that support education, training, participation in conferences, and other hemophilia care and research career development efforts.
- NHF should support efforts to develop more efficient staff mixes for hemophilia care, particularly optimal use of mid-level practitioners and nurses as physician extenders.
- NHF should promote reimbursement mechanisms that compensate hemophilia clinicians and other care givers in ways that provide incentives for efficient, high-quality care.

Conclusion

As the nationally-recognized patient and consumer organization for hemophilia in the US, NHF faces great challenges. Nevertheless, it is well-positioned to promote the highest quality of care for all people with hemophilia, while recognizing and addressing the concerns of providers, payers, and other stakeholders. The principles and desirable action items raised by the NHF strategic summit participants and organized into the elements of a strategic plan in this report will help NHF to develop initiatives to address the current and unfolding challenges and opportunities facing hemophilia care in uncertain times for health care.

Introduction

The National Hemophilia Foundation (NHF) conducted a one-day meeting of hemophilia stakeholders to discuss and develop the basis for a five-year plan for hemophilia care in the evolving health care environment. The summit was held on May 24, 2012, in Washington, DC, and included 28 participants. NHF planned the summit in consultation with The Lewin Group, which also facilitated the event.

This paper provides a brief background on hemophilia, an environmental overview on the current state of hemophilia care, implications of the Patient Protection and Affordable Care Act (ACA), and a summary of the deliberations of the summit. The paper also describes the approach used to develop the agenda and participant list for the summit. The objective of the paper is to help further educate stakeholders on the opportunities and challenges presented by the new health care environment and present steps that NHF and the broader hemophilia community can take to adapt to this environment.

Background

Hemophilia is a rare genetic disorder resulting in a deficiency or lack of the blood plasma proteins factor VIII or factor IX, which play integral roles in blood coagulation.¹ The disease primarily affects males, while females are most likely to act as carriers of the mutated genes on the X-chromosomes. Females who are carriers sometimes can have symptoms of hemophilia and are diagnosed as having a mild form of the disease. Patients can experience mild, moderate, or severe forms of hemophilia, depending on the factor activity within the bloodstream. These forms are defined by factor plasma levels, ranging from less than 1% in severe cases, between 1% and 5% in moderate cases, and 5-30% or more in mild cases of disease.² As shown in Table 1, approximately 50-70% of hemophilia patients have severe hemophilia.

Additional genetic bleeding disorders affect the US population. Von Willebrand disease (VWD) is an often under-recognized condition that occurs roughly equally in males and females. It results in prolonged bleeding along with such symptoms as easy bruising, frequent or prolonged nose or menstrual bleeds, and prolonged bleeding after surgery or injury. Other rare disorders that inhibit clotting arise from deficiencies in factors I, II, V, VII, X, XI and XIII.

Prevalence

There is currently no direct means of estimating the size of the total US population with hemophilia. An analysis of active surveillance data from six states for the years 1993-1995 yielded an age-adjusted prevalence of hemophilia A and hemophilia B of a total of 13.4 cases per 100,000 male population in those six states (roughly 1 in 7,500 males). The investigators projected this prevalence to an adjusted estimated national population in 1994 of 13,320 cases of

¹ Franchini M, Mannucci PM. Past, present and future of hemophilia: a narrative review. *Orphanet J Rare Dis* 2012;7(1):24.

² Shapiro A, Pipe S, Geraghty S, et al. Hemophilia and managed care: partnering to achieve cost-effective care. *Am J Pharm Benefits* 2011;3(5):248-55.

hemophilia A and 3,640 cases of hemophilia B among males.³ An unadjusted projection of these 1994 estimates to the 2010 male population yields a rough estimate of 20,500 males with hemophilia in 2010.

Table 1. Classification of hemophilia patients by disease severity

| Classification | Severe (50-70%) | Moderate (~10%) | Mild (30-40%) |
|--------------------------------|---------------------------------|---------------------|-------------------------------|
| Factor VIII/IX activity | <1% | 1-5% | >5-30% |
| Frequency of bleeding episodes | ~2-4 times per month | ~4-6 times per year | Uncommon |
| Cause of bleeding episodes | Majority are spontaneous bleeds | Minor injury | Trauma, surgical intervention |

The Hemophilia Data Set (HDS), a registry comprising data reported by hemophilia treatment centers (HTCs) to the Health Resources and Services Administration (HRSA) and Centers for Disease Control and Prevention (CDC), provides indirect indicators of the magnitude of the US population with hemophilia and other genetic bleeding disorders. According to an analysis of the HDS published in 2012, the population of individuals who used HTC services in 2010 was 32,612, including 13,276 with factor VIII deficiency and 4,209 with factor IX deficiency. Roughly half of all HTC patients with hemophilia had severe disease, 20% had moderate hemophilia, and 30% were classified as having mild deficiency.⁴ Although the prevalence of hemophilia in females is understood to be very low, females comprised 6.7% of all factor VIII and factor IX patients who used HTC services in 2010. The HTC population also included 13,239 individuals with VWD and 1,771 with other rare factor deficiencies in 2010. Females comprised 60% of all VWD patients in the HTCs in 2010.⁵

These estimates of HTC utilization reflect some duplication attributable to patients who access specialty services (e.g., complex orthopedic surgery) at HTCs in addition to their primary HTCs. The estimates are also subject to under-counting, as they are based on annual utilization counts that do not reflect all of the population with mild disorders who visit their HTCs only every two or three years.

Treatment and Patient Management

Hemophilia is treated by the infusion of factor product to help engage and improve the blood coagulation process. The amount of factor required for each patient varies depending on the weight of the patient and severity of disease, whether or not the patient has developed an inhibitory response to factor product, and other aspects.

Historically, hemophilia could only be treated through whole blood or fresh frozen plasma transfusions. However, the amount of factor available through transfusions was found to be

³ Soucie JM, Evatt B, Jackson D. Occurrence of hemophilia in the United States. The Hemophilia Surveillance System Project Investigators. *Am J Hematol* 1998;59(4):288-94.

⁴ Baker JR, Riske B, Drake JH, et al. Hemophilia Treatment Center population trends 1990-2010: patient diagnoses, demographics, health services utilization. *Haemophilia* 2012:1-6.

⁵ Ibid.

insufficient for treating patients with severe hemophilia, leading to childhood death or debilitating hemorrhagic trauma.

In the late 1960s and early 1970s, researchers developed and perfected new methods for purification of factor VIII from blood plasma, enabling all people with hemophilia to receive the necessary amount of factor concentrate. These methods, known as cryoprecipitate and glycine-precipitate, allowed hemophilia patients to receive treatment at home and decreased their dependence on the emergency room. This new product, plasma-derived factor concentrate, also allowed preventive infusion of patients, enabling them to participate in everyday activities without the risk of bleeding complications.⁶

The development of plasma-derived factor concentrate initiated a new era for people with hemophilia. However, its success of this new technology was quickly followed by grave misfortune. The process for developing a single batch of plasma-derived factor requires combining thousands of plasma donations. This resulted in transmission of viruses from contaminated blood and plasma donations, leading to debilitating and deadly blood-borne illnesses in hemophilia patients. By the 1980s, almost 5,000 hemophilia patients had become infected by blood-borne viruses, particularly HIV and the hepatitis C.⁷ Today, blood screening is an integral part of producing plasma-derived factor concentrates, along with the development and implementation of viral inactivation techniques. Though fear of infection lingers, these techniques dramatically reduced the risk of HIV and hepatitis C infection in hemophilia patients.⁸

A breakthrough occurred in the late 1980s with the successful cloning of the factor VIII and factor IX genes, leading to the development of recombinant factor product. Recombinant factor virtually eliminates the risk of blood borne pathogens, providing a much safer form of hemophilia treatment. Recombinant factor VIII and IX products became available for commercial use in 1992 and 1997, respectively.

One of the most concerning complications of hemophilia is the development of inhibitors, which are alloantibodies that inhibit factor activity. In patients with inhibitors, the infused clotting factor becomes less effective in preventing bleeding episodes. Subsequently, hemophilia patients with inhibitors require more factor product than patients without inhibitors. An estimated 20-30% of hemophilia A and 1-3% of hemophilia B patients may develop persistent inhibitors during their lifetime.⁹ Inhibitors develop in about 30% of children with severe hemophilia, usually within the first 50 exposures to factor VIII.¹⁰ Despite advances during the last decade in developing products for patients with inhibitors, their causes and risk factors are poorly understood. Among the new interventions being explored for hemophilia prevention and treatment is gene therapy designed to help the body produce its own factor.^{11,12}

⁶ Franchini 2012.

⁷ White GC. Hemophilia: an amazing 35-year journey from the depths of HIV to the threshold of cure. *Trans Am Clin Climatol Assoc* 2010;121:61-75.

⁸ Gringeri A. Factor VIII safety: plasma-derived versus recombinant products. *Blood Transfus* 2011;9:366-370.

⁹ Shapiro 2011.

¹⁰ Manco-Johnson MJ, Abshire TC, Shapiro AD, et al. Prophylaxis versus episodic treatment to prevent joint disease in boys with severe hemophilia. *N Engl J Med* 2007;357:535-44.

¹¹ Murphy S, High K. Gene therapy in haemophilia. *British Journal of Haematology* 2008;140:479-87.

Hemophilia can be treated through on-demand (episodic) or prophylactic therapy. Recent research demonstrates that primary prophylaxis is the optimal therapy for hemophilia patients, particularly in the pediatric population. The European Pediatric Network for Hemophilia Management defined primary prophylaxis as treatment that starts before the age of two years and continues until the end of the growth period. When patients enter early adulthood, they have the option to suspend prophylaxis and begin on-demand treatment, with intermediary periods of prophylactic therapy as needed.^{13,14} In 1994, researchers at Mount Sinai Medical Center (New York) conducted a longitudinal study of the effects of higher factor dosages on orthopedic outcomes (e.g., joint bleeds). The group concluded that, while dose sizes have no direct correlation to orthopedic outcomes, full-time prophylaxis is much more likely to produce favorable outcomes compared with on-demand therapy in the reduction of joint bleeds. The study was conducted on a group of severe hemophilia A patients with no inhibitors.¹⁵ Several other studies on hemophilia A and B patients offer similar findings regarding prophylactic versus on-demand therapy.^{16,17,18} Results from these clinical studies led the Medical and Scientific Advisory Council of NHF (MASAC) to develop a guideline recommending prophylaxis treatment as optimal therapy for individuals with severe hemophilia. This form of ongoing, preventive therapy gives young patients the opportunity to lead their lives uninterrupted by bleeding episodes.

Although this is the recommended guideline for pediatric hemophilia patients, continuous prophylactic therapy is not widely implemented in the US. As of May 2012, the CDC reported that only 55% of severe hemophilia patients were on prophylactic treatment. A major contributor to this shortfall in prevention appears to be the significant financial burden associated with continuous prophylaxis. Clotting factor alone is the single greatest driver of the cost of hemophilia care, accounting for anywhere between 45% and 93% of the total cost of treatment, depending on the severity of disease, the individual treatment regimen, and whether or not the patient is using recombinant factor.¹⁹

A recent systematic review by the Cochrane Collaboration examined evidence from available randomized controlled trials (RCTs) and quasi-randomized controlled trials regarding the effectiveness of prophylaxis versus on-demand treatment. Of note, only six studies with a total of 142 patients met the Cochrane inclusion criteria for the systematic review.²⁰ The review found that prophylaxis preserves joint function in children compared to on-demand treatment. It also found insufficient evidence to confirm certain observational evidence that prophylaxis decreases bleeding and related complications in patients with existing joint damage.

¹² Pipe SW. Hemophilia: new protein therapeutics. *Hematology* 2010;203-9.

¹³ Coppola A, Capua M, Simone C. Primary prophylaxis in children with haemophilia. *Blood Transfus* 2008; 6(suppl 2):s4-s11.

¹⁴ Van den Berg HM. Issues surrounding therapeutic choices for hemophilia patients. *Haematologica* 2004;89(6):645-50.

¹⁵ Aledort LM, Haschmeyer RH, Pettersson H. A longitudinal study of orthopaedic outcomes for severe factor-VIII-deficient haemophiliacs. The Orthopaedic Outcome Study Group. *J Intern Med* 1994;236(4):391-9.

¹⁶ Berntorp E, Boulyjenkov V, Brettler D, et al. Modern treatment of haemophilia. *Bull World Health Organ* 1995;73:691-701.

¹⁷ Manco-Johnson 2007.

¹⁸ Aznar JA, Marco A, Jimenez-Yuste V, et al. Is on-demand treatment effective in patients with severe hemophilia? *Haemophilia* 2012;18(5):738-42.

¹⁹ Johnson KA, Zhou Z. Costs of care in hemophilia and possible implications of health care reform. *Hematology* 2011:413-8.

²⁰ Iorio A, Marchesini E, Marcucci M, et al. Clotting factor concentrates given to prevent bleeding and bleeding-related complications in people with hemophilia A or B. *Cochrane Database Syst Rev* 2011;(9):CD003429.

Based on this and related evidence, primary prophylaxis started upon the first joint bleed, or before age two, is generally accepted as the preferred management of severe hemophilia. Further, some recent data suggest that early prophylaxis reduces the likelihood of inhibitor development. Although observational evidence suggests that earlier treatment results in better joint outcomes and quality of life, the extent to which secondary (such as “early-switch on-demand”) prophylaxis improves outcomes is highly variable in adolescents and adults, who may have varying levels of existing joint damage and who may experience varying levels of damaging bleeds upon withdrawal of prophylaxis. The body of evidence on adult prophylaxis is even more limited in adults than in children. The costs associated with primary as well as secondary prophylaxis focus attention on the need to validate various treatment regimens in different patient subgroups.^{21,22,23} In particular, the balance of improvements in health outcomes and the substantial costs of secondary prophylaxis in adults tends to be less favorable, as adults with hemophilia typically have established joint damage and therefore have less potential benefit to realize from this costly therapy.

A recent review of evidence on costs and outcomes of adult prophylaxis indicates that there is room to optimize prophylactic regimens among adult subgroups so as to lower costs, e.g., by tailoring intermediate- or low-dose regimens in patients who bleed infrequently.²⁴ The same review concluded that a more comprehensive accounting of direct and indirect costs of care, including reduced costs associated with health care services utilization (e.g., reduced hospitalizations and orthopedic surgery) and improved workplace productivity and quality of life, could yield more favorable determinations of the cost-effectiveness of adult prophylaxis. Modeling and other analyses of these tradeoffs still indicate that the cost of factor weighs heavily on cost-effectiveness determinations, including cost-utility ratios using quality-adjusted life-years (QALYs).²⁵ Modeling of primary prophylaxis versus on-demand therapy has yielded cost-utility ratios of 37,000-50,000 British pounds per QALY, depending on certain methodological assumptions. These results are within striking distance of, for example, the oft-cited acceptable threshold in the UK of 30,000 pounds per QALY. However, such findings remain highly sensitive to plausible ranges of assumptions about care patterns, outcomes, discount rates, and other factors. Some payment authorities that use cost-utility or other cost-effectiveness ratios to inform their coverage policies have indicated a willingness to loosen such thresholds for certain conditions, including orphan diseases with limited therapeutic alternatives.²⁶ Given the costs of hemophilia care and the potential benefits of more reliable

²¹ Schobess R, Kurnik K, Friedrichs F, et al. Effects of primary and secondary prophylaxis on the clinical expression of joint damage in children with severe haemophilia A. Results of a multicenter non-concurrent cohort study. *Thromb Haemost* 2008;99(1):71-6.

²² Coppola A, Tagliaferri A, Di Capua M, Franchini M. Prophylaxis in children with hemophilia: evidence-based achievements, old and new challenges. *Semin Thromb Hemost* 2012 Feb;38(1):79-94.

²³ Coppola A, Franchini M, Tagliaferri A. Prophylaxis with haemophilia. *Thromb Haemost* 2009;101(4):674-81.

²⁴ Hay CR. Prophylaxis in adults with haemophilia. *Haemophilia* 2007;13 Suppl 2:10-5.

²⁵ The QALY is a unit for measuring outcomes of health care interventions. QALYs combine survival with quality of life. That is, years of life are weighted by patient (or societal) utility for the quality of life experienced during those years. As they are not specific to a particular disease or condition, QALYs can be used to compare the magnitude of health outcomes gained from diverse types of health care interventions. A cost-utility ratio using QALYs calculates the additional cost of a health care intervention required to gain one QALY. In the UK and some other national health systems, cost per QALY thresholds are used to inform coverage policies. This is not the case in the US, although interventions with cost per QALY ratios higher than, e.g., \$50,000 per QALY or \$100,000 per QALY are sometimes regarded informally as less efficient ways to spend limited health care dollars.

²⁶ Schlander M. The use of cost-effectiveness by the National Institute for Health and Clinical Excellence (NICE): no (yet an) exemplar of a deliberative process. *J Med Ethics* 2008;34(7):534-9.

data about costs and patient outcomes associated with various prophylactic regimens, some researchers call for investing in further primary research in this area.^{27,28}

Though clinically meaningful, the gains of more finely tailored therapy still come at a high cost. A recent cost-utility analysis comparing an escalating-dose form of tailored prophylaxis to standard prophylaxis and to on-demand therapy in young children indicated that the tailored prophylaxis showed substantial health gains (i.e., fewer bleeding events) over on-demand therapy and that it resulted in improved quality of life (due to need for fewer ports) than standard prophylaxis. However, these gains came at the high price of factor; the cost-utility ratio of the tailored prophylaxis compared to on-demand therapy was in excess of \$500,000 per QALY. (Compared to standard prophylaxis, the tailored prophylaxis was less expensive while yielding similar QALYs.) This is an order of magnitude greater than what is generally considered an acceptable ratio in the UK, Canada, and certain other countries that use cost per QALY thresholds to inform coverage decisions.²⁹

Certainly, hemophilia treatment has improved dramatically over the last 50 years. Morbidity and mortality rates for hemophilia patients have decreased greatly since the days of blood infusions, plasma-derived factor concentrates, and the complications arising from HIV and hepatitis C infections. However, scientific advances in treatment are not the only factors that led to improvements in hemophilia care. The hemophilia care community has long realized that comprehensive care management is a critical component to improving the lives of hemophilia patients, prompting NHF to launch a campaign in 1973 to establish a nationwide network of hemophilia diagnostic and treatment centers.³⁰ Today, more than 140 hemophilia treatment centers located across the US³¹ offer a comprehensive, multidisciplinary care model including increased patient access to factor product, physical therapy assessment, psychosocial assessment, dental care, genetic counseling, specialized nursing, patient education, and financial consultation. This model entails care from a staff mix of hematologists, nurses, pediatricians, social workers, physical therapists, orthopedists, and dentists. Where appropriate, HTC staff teach hemophilia patients to self-infuse, reducing their dependency on a clinic or treatment center.³²

The severity of the HIV and hepatitis C crisis mobilized the federal government to take an active role in the care and management of this rare disease population. In 1992, Section 340B of the Public Health Service Act established a new drug pricing program. This “340B” program requires drug manufacturers to provide discounts to a specific list of U.S. Department of Health

²⁷ Miners AH, Sabin CA, Tolley KH, Lee CA. Cost-utility analysis of primary prophylaxis versus treatment on-demand for individuals with severe haemophilia. *Pharmacoeconomics* 2002;20(11):759-74.

²⁸ Miners A. Revisiting the cost-effectiveness of primary prophylaxis with clotting factor for the treatment of severe haemophilia A. *Haemophilia* 2009;15(4):881-7.

²⁹ Risebrough N, Oh P, Blanchette V, et al. Cost-utility analysis of Canadian tailored prophylaxis, primary prophylaxis and on-demand therapy in young children with severe haemophilia A. *Haemophilia* 2008;14(4):743-52.

³⁰ Hemophilia treatment centers 101. USA: Hemaware, 2011. June 13, 2012. <http://www.hemaware.org/story/hemophilia-treatment-centers-101>

³¹ Hemophilia treatment center director - facilities results. USA: Centers for Disease Control and Prevention, 2012. September 25, 2012 https://www2a.cdc.gov/ncbddd/htcweb/Dir_Report/Dir_SearchOrg.asp?inactive_flag=

³² Comprehensive medical care - hemophilia treatment centers. USA: National Hemophilia Foundation, 2006. June 13, 2012 <http://www.hemophilia.org/NHFWeb/MainPgs/MainNHF.aspx?menuid=249&contentid=385>

and Human Services (HHS) assisted programs that meet the criteria in the Social Security Act (SSA) for serving a disproportionate share of low-income patients. HTC are included in that list and are able to purchase factor product from manufacturers at a significantly lower cost compared to the average retail price. Hemophilia patients who receive their factor from HTCs generally are billed for the product at the retail price, which is then paid by their insurance company, though many HTCs pass on some of the discount to payers. Revenues from this practice are used by HTCs for funding the comprehensive services for patients.

While such initiatives have been instrumental in developing a comprehensive care model, the costs of hemophilia treatments continue to rise. This places additional risk on patient access and increases the importance of comprehensive health care coverage for hemophilia care.

In addition to HTCs, hemophilia patients can purchase their factor products from other sources. Specialty pharmacies, which function as hemophilia home care companies, offer patients the convenience of having their factor products delivered directly to their homes (as do HTCs).³³

Specialty pharmacies originally referred to pharmacies that dispensed biotechnology-based products (derived from living cell lines) and administered via injection or infusion. More recently, they tend to refer more broadly to those that dispense medications that are high cost, difficult to deliver to patients, and are otherwise complex for maintaining patients on their regimens. In addition to hemophilia, conditions that typically involve specialty pharmaceutical therapy include multiple sclerosis, HIV/AIDS, Crohn's disease, rheumatoid arthritis, certain cancers, growth hormone deficiency, and organ transplantation.³⁴ Specialty pharmacies that fill and deliver prescriptions of factor to patients' homes are typically known as "hemophilia home care companies," which may operate as stand-alone companies or be part of a larger specialty pharmacy. Depending on their size and scope of services, hemophilia home care companies offer various combinations of clinical management and adherence programs intended to improve outcomes and lower costs. These can include condition and medication information, access to pharmacists and nurses with specialized training, home visits, teaching patients to self-infuse factor product, phone hotlines, refill reminders, submission of patient bills to insurers, and other services. Many specialty pharmacies, including hemophilia home care companies, are part of pharmacy benefit managers (PBMs). These are drug plans that manage retail, mail order, and specialty pharmacy drug benefits for employers and health insurers. The largest of these are CVS Caremark and Express Scripts, which acquired Medco Health Solutions in 2012. Given their market size and therapeutic scope, specialty pharmacies are able to exert purchasing power and implement systems to manage costs.

Health Care Coverage

The great majority of hemophilia patients use three main forms of health care coverage: commercial (private) insurance, Medicaid or other state-specific high-risk insurance, or Medicare for individuals age 65 or older or disabled. Coverage may include standard fee-for-service or forms of managed care (preferred provider organizations [PPOs], health maintenance

³³ When insurance plans switch homecare companies. USA: Hemaware, 2010. June 13, 2012.

<http://www.hemaware.org/story/when-insurance-plans-switch-homecare-companies/>

³⁴ Blaser DA, Lewtas AJ, Ousterhout MM, et al. How to define specialty pharmaceuticals – a systematic review. *Am J Pharm Benefits*. 2010;2(6):371-80.

organizations [HMOs], etc.). According to the Universal Data Collection (UDC) System maintained by the CDC, which collects data from HTC's for people with hemophilia and other bleeding disorders, the distribution of hemophilia patients by main insurance category as of the December 31, 2011, was as shown in Table 2.

Table 2. Insurance coverage type for HTC patients, 2011

| Insurance category | Percent of HTC patients |
|---|-------------------------|
| Commercial insurance ¹ | 50.6% |
| Medicaid & state high-risk insurance ² | 28.9 |
| Medicare ³ | 9.1 |
| CHAMPUS | 1.0 |
| Uninsured | 4.6 |
| Other | 5.7 |

¹ Includes standard commercial insurance, commercial HMO, commercial PPO; ² includes standard Medicaid, Medicaid HMO, and state high-risk insurance; ³ includes standard Medicare, Medicare HMO.

Source: CDC. Universal Data Collection System. Summary Report of UDC Activity, National, Patient Demographics (Hemophilia). December 31, 2011. Accessed September 28, 2012, at: https://www2a.cdc.gov/ncbddd/htcweb/UDC_Report/UDC_view1.asp?para1=NATION¶2=DEMOH¶3=&ScreenWidth=1024&ScreenHeight=640/

As noted above, the HTC data do not represent the entire population of patients with hemophilia, and are otherwise subject to certain over- and under-counting. As shown Table 2, nearly 5% of hemophilia patients seen at HTC's have no form of insurance. These and other patients may have very mild cases of hemophilia not requiring treatment, may be purchasing factor for on-demand therapy only, or may be receiving factor through hospital emergency visits.

The great expense of treatment has exposed individuals with hemophilia to the risk of lifetime and annual payment limits imposed by health plans and other insurers. Until they were disallowed by the Patient Protection and Affordable Care Act (ACA) in 2010, commercial health insurance plans often placed lifetime limits on their beneficiaries, typically on the order of \$1 million. Hemophilia patients who have developed inhibitors can reach that spending amount within 3-4 years, depending on whether they are using prophylactic or on-demand therapy. According to The Kaiser Family Foundation's Employer Health Benefits Survey, 59% of all workers covered by their employer's health plan in 2009 had some type of lifetime limit placed on their benefits package.³⁵ In 2009, as many as 25,000 people were estimated to have lost coverage under their employer-sponsored health plans because of lifetime limits.³⁶ Such patients would need to purchase insurance on an individual basis or turn to Medicaid or other government payers.

Even with lifetime and annual limits, commercial payers have faced financial burdens. With the prohibition of lifetime limits and phased-in restriction of annual limits until their

³⁵ Musco T, Sommers B. Under the Affordable Care Act, 105 million Americans no longer face lifetime limits on health benefits. ASPE Issue Brief. Office of the Assistant Secretary for Planning and Evaluation, US Department of Health and Human Services; March, 2012. Accessed Aug. 1, 2012 at: <http://aspe.hhs.gov/health/reports/2012/LifetimeLimits/ib.shtml/>

³⁶ The impact of lifetime limits. USA: PricewaterhouseCoopers, 2009.

prohibition in 2014, commercial payers will have even greater burdens to pay for the substantial costs of hemophilia treatment for patients in their networks. In order to address these costs, insurance companies are increasingly adopting tiered benefits systems in which they contract with certain providers and product manufacturers to provide different levels of benefits for patients with different needs and resources. This tiered structure could limit patient access to preferred providers and products. Some patients contend that tiered benefits reduce or even eliminate access to their preferred provider and/or therapies, and that cost-control will become the driving force in health care. Furthermore, individuals fear that the tiered benefits will constrain the patient-physician decision-making process.

For patients with hemophilia, purchasing an individual health plan through a commercial insurance company could prove to be challenging because of pre-existing condition clauses. For many patients, including those with hemophilia, Medicaid eligibility and enrollment have been complicated and onerous. Varying across states, patients must meet certain income and asset limitations before accessing medical benefits through Medicaid. It may take months to spend down assets and become eligible for the program. Medicaid eligibility has been more readily available to custodial parents and women than single adult men. As such, single adult male hemophilia patients who are unemployed have not been eligible to receive health benefits under Medicaid. The ACA's expansion of Medicaid, where accepted by states, will simplify and widen access to Medicaid for more hemophilia patients.

Continued expansion of managed care, including as provided in ACA as discussed below, has implications for hemophilia patients that are or will be enrolled in Medicaid managed care programs. As described in an NHF policy statement, the prospect of pulling the high costs of factor products into capitation of hemophilia care raises concerns about maintaining continued and adequate access to those products.³⁷ This concern is based in part on an actuarial analysis commissioned by the Indiana Chapter of NHF in 2006. Among its major findings, this analysis highlighted that an uneven distribution of a small number of very high cost hemophilia patients across managed care organizations under conventional capitation arrangements could put some of them at financial risk.³⁸

Patient Protection and Affordable Care Act

The Patient Protection and Affordable Care Act (ACA) was passed by the Congress and signed into law on March 23, 2010. This law incorporates numerous provisions intended to address some of the inefficiencies of the current US health care system. Some of these include the individual mandate to acquire health insurance, development of health insurance exchanges, establishment of an independent center for comparative effectiveness research (CER) known as the Patient-Centered Outcomes Research Institute (PCORI), and enforcement of certain regulations on health insurance companies.

³⁷ NHF Position Statement. Capitation & Hemophilia Treatment. Undated. National Hemophilia Foundation. Accessed Aug. 10, 2012 at:

http://www.hemophilia.org/NHFWeb/Resource/StaticPages/menu0/menu4/menu306/NHF_PositionStatement_CapitationBloodClottingFactor.pdf/

³⁸ Powell CK. Actuarial Opinion on Issues in the Capitation of Hemophilia. May 10, 2006. Commissioned by Hemophilia of Indiana. Accessed Aug. 10, 2012 at:

http://www.hemophilia.org/NHFWeb/Resource/StaticPages/menu0/menu4/menu306/ActuarialStudy_%20MedicaidManagedCare.pdf/

Key provisions of ACA have direct and indirect consequences for hemophilia care, including the following:³⁹

1. Patients under the age of 26 are able to continue receiving health care benefits through their parent's insurance company.
2. Insurance companies can no longer limit or deny benefits to children under the age of 19 for having a pre-existing condition (including people with hemophilia).
3. Insurance companies will no longer be able to refuse to sell coverage or renew policies because of an individual's pre-existing conditions, and will have limited ability to charge higher rates due to gender, health status, or other factors, as of January 2014. (Until then, a transitional Pre-Existing Condition Insurance Plan will be available to those who have been denied insurance due to a pre-existing condition and have been uninsured or at least 6 months.)
4. Insurance companies can no longer place lifetime dollar limits on payments for beneficiaries.
5. Insurance companies will no longer be able to place annual dollar limits on payments for beneficiaries as of January 2014. (Phased-in restrictions on annual limits apply through 2013.)
6. Insurance companies can no longer cancel coverage for a sick beneficiary based on identifying an error on the beneficiary's insurance application or other technical mistake.
7. Health insurance exchanges are to be opened in each state by 2014.

The first two provisions listed above will offer substantial benefits for the young adult hemophilia population. Similarly, citing pre-existing conditions as cause to deny coverage will allow caregivers of a child with hemophilia the opportunity to enroll in an individual health plan if their employer-based coverage expires.

Elimination of lifetime and annual dollar limits on health care plans will have a significant impact on many hemophilia patients. As noted above, hemophilia patients have faced the risk of reaching the dollar limits on their employer-provided health plans and losing health coverage. Without annual or lifetime dollar limits on coverage, patients can continue to use their employer-provided health plan and access the treatments and services they need. This provision will also help to reduce the number of individuals that may be required to enroll in Medicaid.⁴⁰

Under ACA, by 2014, health insurance exchanges are to be established on a state-wide, regional, or market-based basis. This provision will allow all individuals without employer-based health insurance to buy individual and family coverage through a competitive medium, regardless of age or health status.

While provisions of ACA are generally encouraging to the hemophilia community, certain provisions pose uncertainties and potential risks to access or diminished choice of providers.

³⁹ Public Law 111-148. The Patient Protection and Affordable Care Act. March 23, 2010.

⁴⁰ Using an actuarial model drawing on CDC data from 2009, this analysis found that, if lifetime limits were raised to \$10 million across all commercial health plans, Medicaid would save more than \$11 billion over the next 10 years. See: The impact of lifetime limits. USA: PricewaterhouseCoopers, 2009.

These provisions generally involve changes in delivery and financing of care, including accountable care organizations (ACOs), Medicaid managed care programs, and bundled payment systems.

ACOs are networks of doctors and hospitals that share the responsibility of providing patient care.⁴¹ They are intended to encourage care coordination among all providers within their networks. An ACO builds a network of providers through contractual agreements, and is offered monetary incentives for maintaining or reducing overall costs per patient while improving the quality of care according to certain quality measures recommended by organizations such as the National Quality Forum and the National Committee for Quality Assurance. It is in the best interest of ACOs to provide cost-effective care for their patients.

The ACA authorized the Centers for Medicare and Medicaid Services (CMS) to establish the Medicare Shared Savings Program (MSSP), which allows ACOs to contract with Medicare. As of April 2012, 27 ACOs had voluntarily agreed to participate in the MSSP⁴² until 2016. These “pioneer ACOs” are primary care networks, rather than specialty providers. As such, it is unlikely that they will encounter hemophilia patients in the near future.

State-specific Medicaid managed care programs have also increased over the last decade. Based on a 2010 survey, 47 states and the District of Columbia reported operating a comprehensive Medicaid managed care (MMC) program.⁴³ Nationwide, about 71.5% of Medicaid beneficiaries are enrolled in Medicaid managed care.⁴⁴ Currently, providers who participate in MMCs are reimbursed for their services through a capitated or bundled payment system in which physicians are paid fixed, prospective amounts for each patient they see. If an MMC can reduce Medicaid patient costs while maintaining high performance standards, then the network providers receive part of the savings for the reduction in costs, though they are also at risk if patient costs exceed the estimated prospective payments.

MMCs pose some uncertainties for hemophilia patients who are accustomed to accessing care in more open, fee-for-service delivery systems. If a patient’s hematologist is not included in the patient’s new managed care network, the patient may have to pay out-of-network costs to receive services from that provider or find another hematologist within that network. Hemophilia patients also express concern that the cost of factor product will influence treatment decisions. For example, an MMC may decide to provide full reimbursement for only one of the seven available products licensed in the US for the treatment of hemophilia A based largely on relative cost. To date, there is no published evidence showing that MMC hemophilia patients experience worse health care outcomes than otherwise comparable non-MMC patients.

⁴¹ Pourciau J. Medicaid accountable care: accountable care organizations, Medicaid, and Medicaid health plans. USA: Medicaid Health Plans of America, 2011.

⁴² <http://healthreform.kff.org/en/scan/2012/april/cms-selects-first-accountable-care-organizations-in-the-medicare-shared-savings-program.aspx/>

⁴³ Medicaid managed care: key data, trends, and issues. USA: Kaiser Family Foundation, 2012

⁴⁴ State Health Facts. USA: Kaiser Family Foundation, 2012. June 17, 2012.
<http://www.statehealthfacts.org/comparecat.jsp?cat=4/>

On June 28, 2012, the US Supreme Court ruled on legal challenges to the ACA, upholding some components of the law and limiting others.⁴⁵ The Court's rulings ensure implementation of certain provisions of the law, including implementation of ACOs, prohibition of lifetime caps, and prohibition of pre-existing condition insurance clauses that will influence access to treatments and services for hemophilia patients. The ACA originally expanded Medicaid coverage to all individuals under age 65 with an income level of up to 133% of the federal poverty level. However, the Court reversed that provision of the law, concluding that "...the Medicaid expansion violates the Constitution by threatening States with the loss of their existing Medicaid funding if they decline to comply with the expansion." The Court explained that, while the provision to expand Medicaid itself is constitutional, the mandatory nature of the law is not. As such, no penalties to existing funding can be imposed on states that decline to participate in the expansion.

Today's evolving health care environment poses new challenges, as well as some apparent benefits, to the hemophilia community. The deliberations at the summit addressed these and other related challenges, including the state of hemophilia research and the hemophilia workforce.

Method

In collaboration with NHF, The Lewin Group developed the summit agenda to reflect the perspectives of key stakeholders in hemophilia care and policy. Prior to the summit, Lewin conducted five one-hour teleconference interviews with one or more key informants each to provide views on current and emerging issues and identify some of the main topics for the summit agenda. Individuals for the phone interviews were identified by NHF staff as leaders representing important constituencies of the hemophilia community. Participants at the meeting, including some of the interviewees, were identified by NHF and Lewin as key figures in hemophilia care and policy. They included representatives from such stakeholder groups as physicians, nurses, social workers, public and private payers, specialty pharmacy companies, HTC's, patients and consumers, and researchers. The full set of interviewees and summit participants is attached in Appendix A of this report. Approximately half of the participants attended the summit as largely non-participating audience members. (At the close of the summit, the facilitator asked each person present to provide any final or summary remarks.)

A set of three-to-five main topics for consideration for the summit agenda were gleaned from each of the teleconference interviewees. A considerable convergence among the suggested topics, with due consideration for the constraints of a one-day meeting and in consultation with NHF, yielded the five main topics for the summit agenda:

- organization and delivery of services
- financing of care
- standards of practice/guideline development
- outcomes research
- workforce

⁴⁵ Supreme Court of the United States. National Federation of Independent Business et al. v. Sebelius, Secretary of Health and Human Services, et al. June 2012. <http://www.supremecourt.gov/opinions/11pdf/11-393c3a2.pdf/>

Each topic was accompanied by a set of questions, also developed based on the interviews and background materials, to help guide the discussion. The complete agenda is attached as Appendix B.

The summit began with a presentation Robert Rubin, MD, a professor and practicing clinician at Georgetown University, on the current state of hemophilia care and potential implications of the ACA. He was followed by a discussion of each on the five key topics. A description of each topic, with a synopsis of the deliberations, and findings are provided below. The report concludes with a presentation of a five-year plan for NHF.

State of Hemophilia Care

Dr. Rubin provided a brief review of the profile of hemophilia in the US, underscoring the cost of care and how patients and insurers pay for treatment. His presentation also emphasized the growing recognition of the need for strengthening the evidence base for hemophilia care to help patients, providers, and payers make more informed decisions.

As noted above, while the ACA improves patient access to hemophilia treatments and services, it is likely to increase overall costs for these patients. Continued rising costs have prompted commercial payers to develop various ways to manage costs. Among these are restrictive tiered benefits, which may reduce patient access to their preferred treatments. Citing the lack of evidence to demonstrate otherwise, however, Dr. Rubin challenged the concern that tiered benefit structures would have any clinically meaningful impact on hemophilia patients. He argued that systematic, ongoing data gathering on treatments and outcomes would enable determining whether tiered benefits had any treatment effects and support more informed network formulary decisions. Dr. Rubin noted that the health care sector is seeking ways to manage costs and recognizes that open formularies are inefficient. Across health care, payers increasingly depend on evidence from clinical trials and other studies and analyses to help them make more cost-effective and patient-centered formulary decisions. Tiered benefit structures are becoming integral to health care in the US, as will be the case for hemophilia care as well.

Dr. Rubin encouraged the hemophilia community to sponsor the relevant studies, including CER of hemophilia care and cost-effectiveness analyses, to help fill the current evidence gaps and provide the basis for more informed decision-making by payers. Among the aspects of care that could benefit from such research are, e.g., prophylactic versus episodic treatment for various patient groups, optimal dosing practices, and the type of factor product that is most effective for specific patient groups. Evidence-based treatment guidelines that are generated in ways that meet current standards or criteria (e.g., inclusion criteria for the National Guideline Clearinghouse) can support decisions by clinicians and provide guidance to payers regarding clinically appropriate benefit structures for hemophilia patients.

Rather than oppose or seek to delay addressing such matters as tiered financing and improving evidence-based guidelines, Dr. Rubin emphasized that it would be more beneficial for the hemophilia community to take a more active role in determining the most effective and efficient approaches to care and becoming more engaged in decision-making involving hemophilia care.

Main Discussion Points

This main points arising from this overview and subsequent discussion regarding the current and future state of hemophilia care and management were as follows:

1. The hemophilia community should take a more active role in calling for and supporting generation of rigorous evidence pertaining to the effectiveness, safety, and quality of hemophilia care, as well as more cost-effective and efficient resource allocation.
2. The hemophilia community should promote investment in CER and cost-effectiveness studies of hemophilia care. These types of research are typically funded by government entities such as the National Institutes of Health (NIH), Agency for Healthcare Research and Quality (AHRQ), and the Centers for Medicare and Medicaid Services (CMS), particularly its Center for Medicare and Medicaid Innovation (CMMI). There is also opportunity to encourage the recently established PCORI to fund CER studies in hemophilia, particularly as hemophilia represents costly rare diseases with high individual clinical and economic burdens. Private payers are also expressing interest in such research to the extent that it can inform evidence-based payment policies.
3. The hemophilia community must develop strong evidence-based clinical practice guidelines for hemophilia care and treatment options. These should be produced systematically and otherwise meet standards of such objective entities as the National Guideline Clearinghouse.
4. Considerations of the cost-effectiveness and budget impact of hemophilia care should extend beyond the costs of factor products and other therapeutics required by hemophilia patients to include, e.g., costs and savings accruing from supplementary and downstream (follow-on) care and the burden on caregivers. For example, while prophylactic therapy with expensive factor products entails greater immediate costs than episodic/on-demand therapy, it can confer savings from reductions in other forms of care, e.g., emergency department visits and treatment of long-term joint disorders, as well as certain savings in indirect costs related to productivity losses of hemophilia patients.
5. Because hemophilia is a rare disease, the numbers of patients available to enroll in clinical trials is limited. As such, it can be difficult to achieve large enough sample sizes in such trials to yield statistically significant findings about the relative effectiveness of different therapies. However, investigators are increasingly using alternative trials designs, e.g., Bayesian and other adaptive trials, to optimize the use of available patient samples and yield statistically significant findings, even with smaller patient populations. Indeed, clinical trials for therapies in other rare diseases, such as cystic fibrosis, have been conducted successfully and such designs may be quite appropriate for use in hemophilia treatment trials.

Discussion Topics and Key Findings

Organization and Delivery of Services

Hemophilia care is uniquely organized and delivered, with little similarity to most chronic conditions. HTC offer several types of services for their patients, beyond providing factor product. As noted above, HTCs provide education and support, transportation services, case

management, social work services and other services not typically covered by health insurance. According to the CDC, approximately 70% of hemophilia patients receive care through HTC in some form.⁴⁶ However, there are limited data on the remaining 30% of patients who do not receive care through HTCs. Although not all hemophilia patients require the full set of services, and any one patient's service needs will vary over time, NHF should remain oriented toward ensuring that all patients receive optimal hemophilia care, whether such care is delivered via an HTC, a specialty pharmacy, through a specialist outside of the HTC network, or other sources.

There are significant variations among the types of services provided by the more than 140 HTCs in the US. Most participating HTCs gain a significant portion of their revenues through the 340B program, in which HTCs can purchase factor product at a reduced cost and sell it to patients at competitive market prices, which subsidizes other patient services. However, only about half of HTCs participate in the 340B program. Summit participants estimated that only about 10% of patients in an HTC's network purchase their factor through the HTC. Understanding why many HTCs are not participating in the 340B program and related patients' purchasing patterns of factor will inform strategic planning by NHF in the evolving health care environment.

HTC directors have expressed concern that the ACA's provisions for ACOs could eventually lead ACOs and managed care organizations to contract exclusively with specialty pharmacies for factor product. Without the revenues that many HTCs gain by purchasing factor product under the 340B program, they will not be able to support and fund their range of other patient services. Therefore, any shift in patient access to factor product from HTCs to specialty pharmacies could diminish funding for comprehensive services provided by HTCs that are needed by many patients.

Key Findings

Summit participants' discussion of organization and delivery of hemophilia services raised several key points. First, the variation in services provided by HTCs is driven largely by the relative interests and expertise of the center managers. HTCs are not subject to standards or metrics for the quality of care and types of services each provides. The amount of funding received by HTCs also varies widely. Little is known about how the great majority of patients receive their factor products or why many patients prefer to purchase factor through home care companies while using HTC's comprehensive range of services.

Financial incentives can affect patient care-seeking behavior. Oftentimes, specialty pharmacies enable patients to purchase factor product through their organizations without co-pays. As co-pays for factor can be as much as \$30,000 per year, this can influence patient selection of site of care. Some patients who would benefit from the fuller array of services offered by HTCs may be steered away by this type of financial incentive.

As reflected in summit participants' discussion, there is limited agreement regarding the adoption of standards of care for hemophilia. Some participants expressed that, if a patient were to seek care at five different HTCs across the US, he would receive five different treatment regimens. Others expressed that the standards of care and practice as outlined by the NHF's

⁴⁶ Data & statistics in the United States. USA: Centers for Disease Control and Prevention, 2011. June 17, 2012. <http://www.cdc.gov/ncbddd/hemophilia/data.html>

MASAC are sufficient and should be followed by all HTC. Discussion suggested that, while standards of care are available, they are not uniformly adopted or enforced. To the extent that HTCs do not adhere to common, evidence-based standards, NHF may have an opportunity to strengthen and promote adoption of such standards by HTCs and other providers on behalf of the patient community. As noted at the summit, The Children's Hospital of Philadelphia is currently preparing to conduct a program evaluation on HTCs, and such evaluation findings should be fed back to patients, providers, and other stakeholders.

While HTCs can play a significant role in care of many hemophilia patients, it is not necessary for every hemophilia patient to receive care through the HTC. For example, an adult hemophilia patient with a mild, well-controlled form of disease may require some amount of factor that he prefers to purchase from a home care company, but may not need ongoing care through a HTC. HTCs can serve as centers of excellence, providing comprehensive services and care coordination for all patients as needed. There are several established models of such care in Europe that may be informative for the US.

Summit participants identified the following attributes for hemophilia centers of excellence:

1. Provide continuous, "24/7" comprehensive care for all hemophilia patients.
2. Conduct or participate in primary research.
3. Be guided by standards of care and practices as outlined by MASAC and enforced or otherwise promoted or supported by NHF.
4. Develop and update evidence-based standards of care or guidelines based on new research findings, especially on patient outcomes and with patient input.
5. Expand data collection pertaining to hemophilia care delivery, including pertaining to the approximately 30% of patients who do not receive care from HTCs.
6. Become accredited or otherwise recognized as a hemophilia care center for excellence. NHF can have a role in developing the accreditation process.

NHF can take on roles supporting optimal care for the range of hemophilia patients. In addition, NHF must understand the evolving respective roles of HTCs and specialty pharmacies, and help to ensure that they offer complementary services toward appropriate care for hemophilia patients. A variety of complementary models could evolve, including having HTCs and home care companies contracting with each other to draw on their respective strengths. In joint efforts, for example, HTCs would attract and provide their range of comprehensive services for hemophilia patients who need them, while specialty pharmacies would be the main providers of factor products and related pharmacy services. In a revenue-sharing agreement, specialty pharmacies could use revenues gained from providing and being reimbursed for factor product to reimburse the HTCs for their comprehensive services.

Payers should be encouraged to contract with HTCs as centers of excellence, where hemophilia patients can access to comprehensive, cost-effective care subject to evidence-based standards. NHF could play a lead role in identifying such opportunities for collaboration.

Finance

The financing of hemophilia care has certain unique attributes. The cost of factor product is dominant; it can account for more than 90% of the cost of hemophilia care. This is noteworthy to payers in an increasingly cost-conscious environment in which tiered benefit structures, bundled payment systems, ACOs, and other approaches are being implemented. NHF and the hemophilia community more broadly must weigh the potential impact of these initiatives and prepare accordingly, including engaging in direct interactions with payers.

Summit deliberations addressed the financing of factor product and other patient services provided by HTC and the need to provide them in the context of integrated, comprehensive care appropriate for varying patient needs. Of particular note is a lack of diversity in revenue sources for HTCs. The 340B program is the primary source of revenue for about half of the HTCs in the US and subsidizes comprehensive hemophilia care. Absent the 340B program, HTCs would find it difficult to adequately fund the social work, nursing, and training and education services needed by many in the hemophilia community. As such, any shifts in the financing or delivery of care, including potential changes in the 340B program itself, could place much of hemophilia care and access by many hemophilia patients at risk. Therefore, the hemophilia community must carefully monitor developments related to the 340B program and be proactive about maintaining the financing needed to support high-quality patient care.

The hemophilia community must ensure that payers perceive the value of comprehensive care for hemophilia patients. Without this understanding, payers may choose to contract with one or a few large specialty pharmacy through which all of their beneficiaries can purchase medications, instead of contracting with, or in addition, HTCs in order to make their broad range of services available to patients who need them. Payers that are more aware of the value of the services provided by HTCs may choose to contract with them and include the 340B program in their networks. The introduction of health insurance exchanges could complicate private payers' current inclusion of 340B programs, depending, in part, on the magnitude of any differences in the cost of factor via one provider type or another. This presents an opportunity for NHF to take a lead role in ensuring that the payer community is aware of the value of HTCs to better manage the care of many affected beneficiaries, and encouraging payers to contract with HTCs for those comprehensive services.

Educating payers should also help them to make more informed decisions when developing benefit structures for hemophilia care and management. As noted above, managed care programs are likely to be increasingly restrictive of physician and treatment product choices. Payer education regarding evidence-based care for hemophilia beneficiaries will provide a more credible basis for benefit structures, including consideration of patient preferences where clinically appropriate.

Current payment for hemophilia care generally does not account adequately for the comprehensive multi-disciplinary services provided by HTCs. An appropriately bundled payment system, such as those used for diabetes care and management, might provide a relevant model for hemophilia.

Consumers are unlikely to be aware of how 340B program payments allow HTCs to provide their broad range of services. According to summit participants, HTC directors and providers

generally do not encourage patients to purchase their factor through the HTC due to concerns about perceived conflicts of interest. As noted above, only a small percentage of patients within an HTC purchase factor through their HTC, while the great majority of patients purchase factor through other means, many of whom also use the services provided by HTCs. This raises the need to consider whether and how patients, as well as payers, should be educated regarding seeking the set of services appropriate to their needs, including factor products as well as psychosocial assessment, genetic counseling, and other services.

Summit participants noted that there is diminished transparency regarding the cost of factor product through the supply chain. Some of this information may be publicly available (e.g., in annual financial reports from manufacturers), and NHF can play a role in consolidating and disseminating this information for the hemophilia community.

Participants also addressed how to prioritize the different issues in hemophilia care and management, including pertaining to patient access to services and treatments, quality of care, cost of care and others. Participants also emphasized the importance of prioritizing these issues as a community, instead of waiting for payers to take the lead on these matters. In particular, while maintaining an open formulary and having access to more product choices are important, the provision of comprehensive hemophilia care and achieving high-quality standards may be more critical in today's health care environment. Participants stressed the importance of being proactive rather than reactive on matters pertaining to hemophilia care financing.

Key Findings

The discussion generated a list of action items to help the hemophilia community develop an improved, more accountable financial system for hemophilia care and management:

1. Preserve the HTC comprehensive care model by diversifying its funding sources.
2. Provide greater transparency on hemophilia care revenue sources, funding allocations, and patient flow for HTCs. Share this information with patients, clinicians, payers, and other hemophilia stakeholders.
3. Educate payers regarding the value of the comprehensive services provided by HTCs, including how their appropriate use can be cost-effective, e.g., via cost offsets in downstream savings.
4. Educate patients and family members regarding the relative pros and cons of purchasing factor product from specialty pharmacies vs. HTCs, particularly in the context of access to comprehensive care to meet varying patient needs.
5. Advocate for the 340B program and ensure that it is offered as an option in commercial and public health plans.
6. Conduct analyses to determine the actual costs for HTCs to provide high quality comprehensive services, and the extent to which HTC services are funded by the 340B program and other sources.
7. Move to link financing mechanisms and funding levels for hemophilia care to accreditation based on quality metrics.

8. Advocate high standards of care for all hemophilia care providers, including HTC, home care companies, and others.
9. Emphasize the patient and consumer responsibility for demanding high standards of care from HTCs, home care companies, and other providers.
10. In formulating policy initiatives and advocacy positions in the evolving health care environment, recognize practical tradeoffs in improving hemophilia patient access, quality, and cost.

Standards of Practice & Guideline Development

Discussion of the preceding topics of hemophilia care organization and delivery and financing included frequent mention of the need to link these to establishing, promoting, and adhering to evidence-based guidelines and associated standards of practice. Telephone interviewees reported variations in care for hemophilia patients depending, for example, on whether they receive care in an HTC or from specialists outside of the HTC network. Further, variations also are reported within the HTC network, as clinical practices differ across providers.

Summit participants stated that, while the NHF's MASAC does review available literature and prepares practice guidelines, these guidelines are not subject to independent review and are not enforced as such or used to support explicit standards of care among hemophilia providers across the US. Furthermore, whether or not these guidelines are truly evidence-based, they are not generated in a way that employs current state-of-the-art processes, e.g., for formulating evidence questions, systematic reviews, evidence appraisal/grading, or characterizing strength of recommendations. Summit participants examined certain hurdles for developing stronger evidence-based guidelines for hemophilia care, and how these can be addressed in the current health care environment.

While the general principles for standards of practice put forth by MASAC are adopted by most HTCs, the extent to which these guidelines are implemented in practice is not well understood. Participants suggested that standardization is likely to be more difficult in smaller HTCs.

A key national resource for evidence-based clinical practice guidelines is the National Guideline Clearinghouse (NGC), sponsored by AHRQ. NGC is a free, searchable, online database that currently holds a few thousand guidelines. The NGC has adopted the Institute of Medicine's definition of clinical practice guideline to identify appropriate guidelines for a variety of conditions:

"Clinical practice guidelines are systematically developed statements to assist practitioner and patient decisions about appropriate health care for specific clinical circumstances."^{47,48}

⁴⁷ Field MJ, Lohr KN (eds.) Clinical Practice Guidelines: Directions for a New Program. Institute of Medicine. Washington, DC: National Academy Press;1990:38.

⁴⁸ The NGC recognizes varying uses of terms: "Evidence-based clinical guidance documents are heterogeneous, as is the terminology utilized to describe and/or label them. The phrases 'guideline,' 'protocol,' 'practice parameter,' 'pathway,' 'standard,' etc., are used in many different contexts by different guideline developers." Also: "Any document meeting NGC's inclusion criteria is eligible for inclusion, regardless of how it is labeled."

NGC has a set of inclusion criteria for clinical practice guidelines, shown in Figure 1, all of which must be met for a guideline to be included in the NGC. These criteria are instructive regarding attributes of the current state of the art for guidelines. Currently, the NGC contains no practice guidelines devoted to hemophilia care.⁴⁹ The NHF should work to ensure that the MASAC guidelines meet, at minimum, the NGC inclusion criteria, and consult other standards for producing guidelines, as appropriate. In light of the NGC inclusion criteria and the evolving state of the art in clinical practice guidelines, it is important for the hemophilia community to conduct the types of systematic reviews and other aspects of evidence-based clinical practice guidelines to improve their quality and to increase their credibility and utility with payers who refer to the NGC and other authoritative sources for guidelines when making their coverage decisions. It is not apparent that the payer community currently relies on MASAC guidelines in making coverage decisions related to hemophilia.

Figure 1: Criteria for Inclusion of Clinical Practice Guidelines in NGC

1. The clinical practice guideline contains systematically developed statements that include recommendations, strategies, or information that assists physicians and/or other health care practitioners and patients to make decisions about appropriate health care for specific clinical circumstances.
2. The clinical practice guideline was produced under the auspices of medical specialty associations; relevant professional societies, public or private organizations, government agencies at the Federal, State, or local level; or health care organizations or plans. A clinical practice guideline developed and issued by an individual not officially sponsored or supported by one of the above types of organizations does not meet the inclusion criteria for NGC.
3. Corroborating documentation can be produced and verified that a systematic literature search and review of existing scientific evidence published in peer reviewed journals was performed during the guideline development. A guideline is not excluded from NGC if corroborating documentation can be produced and verified detailing specific gaps in scientific evidence for some of the guideline's recommendations.
4. The full text guideline is available upon request in print or electronic format (for free or for a fee), in the English language. The guideline is current and the most recent version produced. Documented evidence can be produced or verified that the guideline was developed, reviewed, or revised within the last five years.

The increasing emphasis on strength of evidence in formulating practice guidelines draws attention to the availability of RCTs in particular for demonstrating safety and efficacy of interventions for hemophilia. This poses a challenge to the hemophilia community in that the rare and severe nature of hemophilia makes it difficult to enroll sufficient numbers of patients into RCTs with sufficient statistical power to detect true treatment effects of interventions for hemophilia. The relative lack of “level 1 evidence” (so-called in the context of strength-of-evidence hierarchies that commonly place RCTs at the top) may limit the ability of research findings pertaining to hemophilia care to influence guidelines, standards, and coverage policies. Nevertheless, investigators in other rare diseases have been able to use different types of clinical trial designs to achieve acceptable levels of evidence for these uses.^{50,51} Members of the Rare

⁴⁹ As of 2012, the NGC includes entries addressing certain aspects of hemophilia as part of guidelines devoted to other conditions or interventions, e.g., perioperative care for patients with blood disorders, use of central venous access devices, genetic considerations for women’s preconception evaluation, and medical conditions affecting sports participation. The NGC has one guideline on von Willebrand disease.

⁵⁰ As summarized by Krischer: “The study of rare diseases is more challenging due to the limited number of subjects to study. The nature of rare diseases (often chronic or episodic) lends itself to alternative study designs (factorial, N-of-1). The prudent choice of outcome measures of rare diseases trials can lead to answering study questions with fewer subjects. Monitoring trials during their conduct can lead to answering study questions with fewer subjects.” Source: Krischer J. Clinical trial design issues and options for the study of rare diseases. *Rare Diseases*

Diseases Clinical Research Network (RDCRN), comprising 18 consortia funded by the NIH and its Office for Rare Diseases Research, employ various adaptive and other novel clinical trial designs to study therapies in a wide range of rare diseases.⁵² These may serve as useful models for the hemophilia community.

Key Findings

Summit participants generally concurred on the following main action items pertaining to clinical practice guidelines for hemophilia care:

1. Re-examine the MASAC hemophilia care guideline development process for the purpose of making it more consistent with the state of the art of evidence-based clinical practice guidelines, including using a systematic approach, improving transparency and documentation, and other aspects.
2. As part of the process of improving the MASAC guideline process, ensure that these guidelines achieve, at minimum, the inclusion criteria set forth by the NGC, with consideration of other current standards for producing guidelines, such as the Appraisal of Guidelines for Research and Evaluation (AGREE) Instrument.⁵³
3. Review and improve, as appropriate, the dissemination and awareness of the MASAC guidelines, including but not limited to efforts directed toward hemophilia providers, patients, and payers.
4. As the guideline development and dissemination process improves, seek to link the guidelines to standards of care, quality metrics, and provider accreditation.
5. As part of guideline development and updates, draw on the systematic reviews and related evidence gathering and appraisal to identify research gaps to inform priority setting in hemophilia research.

Research Needs

In the limited time available for this one-day summit, participants identified a broad range of research needs pertaining to hemophilia care that could be addressed as part of a strategic plan. Some of these research needs have been cited before by NHF. The main types of research areas discussed included:

- biomedical research, including RCTs, for discovery and demonstration of the safety and efficacy of new interventions (e.g., gene therapy) and regimens of prophylaxis
- RCTs and other studies of the comparative safety and effectiveness of hemophilia interventions in real-world practice

Clinical Research Network. Conference on Clinical Research for Rare Diseases. September 21, 2010. Accessed Aug. 1, 2012 at: <http://rarediseasesnetwork.epi.usf.edu/.../KRISCHER-TrialDesignIssuesOptions.pdf/>

⁵¹ Griggs RC, Batshaw M, Dunkle M, et al. Rare Diseases Clinical Research Network. Clinical research for rare disease: opportunities, challenges, and solutions. *Mol Genet Metab* 2009;96(1):20-6.

⁵² Rare Diseases Clinical Research Network. Accessed Aug. 1, 2012 at: <http://rarediseasesnetwork.epi.usf.edu/studies/index.htm/>

⁵³ The AGREE Next Steps Consortium. Appraisal of Guidelines for Research and Evaluation II: AGREE II Instrument. May 2009.

- health services research on hemophilia care organization, workforce, delivery, access, financing, costs, and outcomes

Among the areas of biomedical research, participants called for enhanced research on overcoming the deleterious impact of inhibitors on patient outcomes, quality of life, and costs; such research might address, e.g., high-dose clotting factor concentrates, bypassing agents, and immune tolerance induction therapy. Participants stressed the importance of recognizing and using alternative and innovative approaches to overcome certain hurdles in conducting biomedical and health services research in hemophilia care. Including some challenges noted above, these include: small patient populations that can limit the enrollment of patient in clinical trials and the statistical power of such trials; variation in hemophilia phenotypes, which can complicate or otherwise limit the applicability of research findings across the broader population of hemophilia patients and important clinical subgroups; ongoing changes in interventions and protocols; increased demand for accounting for patient preferences and choice for interventions and providers; challenges of tracking long-term patient outcomes; and continued cutbacks in research funding.

Meeting participants agreed that NHF does not have sufficient data on the patterns of use of hemophilia services, including for the approximately 30% of patients who do not receive care at HTCs. Participants also concurred regarding the need to conduct research that augments the evidence base for what works in hemophilia care for use by providers, patients, and payers, as well as to support quality assurance efforts and accreditation of providers. This extends beyond the safety and efficacy/effectiveness of particular therapies or regimens to understanding how such organizational and delivery models as integrated care delivery teams affect outcomes and quality of life. Summit participants also noted the increased importance of learning more about making hemophilia care responsive to the needs and preferences of individual patients and improving patient-oriented outcomes and quality of life. In the context of reforming or otherwise rapidly evolving health care systems in the US, participants were very interested in acquiring better data on care patterns, such as the relative numbers of patients receiving prophylactic vs. episodic/acute therapy and access of factor products and other services via HTCs, home care companies, and other providers.

Key Findings

Summit participants generally concurred on the following main action items pertaining to research needs in hemophilia care:

1. Support the generation of rigorous evidence pertaining to the safety, effectiveness, and cost-effectiveness of hemophilia care, including for therapies for hemophilia as well as the organization, delivery, and payment for hemophilia care.
2. Promote ongoing data collection pertaining to patterns of hemophilia care delivery, outcomes, and costs.
3. Promote funding of biomedical and health services research related to hemophilia and hemophilia care by appropriate government agencies and the life sciences industry, stressing the clinical and economic burden of hemophilia and its relationship to other blood disorders and comorbidities.

4. Remain engaged in setting national and international research agendas for hemophilia and other blood disorders.

Workforce

High-quality care and management of hemophilia and other blood disorders entails a comprehensive capacity to deliver a range of coordinated services to meet the diverse needs of hemophilia patients. Achieving and maintaining this capacity requires an adequately trained, experienced, and continuously replenished workforce.

Key informant interviews conducted prior to the summit revealed great concerns about the aging hemophilia workforce. Many specialists and researchers are nearing retirement, with too few younger professionals positioned to take on these responsibilities. One indicator of this shortage is that the number of graduate programs that focus only on non-malignant hematology has decreased from 21 to 4 over the last 10 years, according to the Accreditation Council for Graduate Medical Education.⁵⁴

Summit participants generally concurred that one of the main reasons for the declining interest in hematology, particularly in non-malignant hematology, is professional compensation. Compared to malignant hematology, as well as to some other medical specialties and subspecialties, the career pathway for hematologists and hemophilia researchers, including from the standpoint of research and patient care, may not be considered as professionally stimulating and financially rewarding. The income stream for private practice cancer chemotherapy is far greater than for non-malignant hematology. In addition, research funding for blood disorders is low; federal funding for hematology research has been stagnant since the early 2000s, notably on the part of NIH funding for research initiatives. This flattened research support has undermined academic research efforts and contributed to the reduction in much of the hemophilia workforce that also depends on research income. Participants emphasized the need for NHF to call attention to and promote workforce development for clinical and non-clinical physicians and other health professionals, social workers, and other paid professionals and volunteers to staff HTC chapters and other provider organizations.

Participants called attention to several developments that help to support the hemophilia workforce. For example, one major pharmaceutical company (Baxter) has a hematology fellowship that encourages medical students to attend a “hemophilia camp” in order to build interest about the field. The pharmaceutical industry in general has supported fellowships in hematology and thrombosis. There are other mentorship efforts in which medical residents and fellows attend a regional HTC meeting, providing them an opportunity to discuss topics of interest with medical directors of HTCs and other influential figures from the hematology community. Anecdotal evidence suggests that individuals who have gone through the program have taken on careers in hematology. Nurses can be very effective as physician extenders for managing blood disorders and are able to provide hemophilia care in rural communities where access to hematologists and HTCs may be limited. It may be appropriate for nurses to be trained in the manner of oncology nurses and reimbursed accordingly for services.

⁵⁴ List of ACGME Accredited Programs and Sponsoring Institutions. USA: Accreditation Council for Graduate Medical Education, 2012. June 19, 2012. <http://www.acgme.org/adspublic/default.asp/>

Key Findings

Summit participants generally concurred on the following main action items pertaining to workforce needs in hemophilia care:

1. Support ongoing analyses of the status and trends of the hemophilia workforce and the factors contributing to it.
2. Promote workforce development for clinical and non-clinical physicians and other professionals and volunteers to staff hemophilia care providers.
3. Promote education, training, participation in conferences, and other hemophilia care and research career development efforts.
4. Analyze and support more efficient staff mixes for hemophilia care, particularly optimal use of mid-level practitioners and nurses as physician extenders.
5. Promote reimbursement mechanisms that compensate hemophilia clinicians and other care givers in ways that provide incentives for efficient, high-quality care.

Toward a Five-Year Strategic Plan

As the nationally-recognized patient and consumer organization for hemophilia in the US, the NHF faces great challenges. Nevertheless, NHF is well-positioned to promote high-quality care for all hemophilia patients, while recognizing and incorporating perspectives of providers, payers, and other stakeholders. The deliberations of the NHF strategic summit, as summarized in this report, will help guide NHF in addressing the current and unfolding challenges and opportunities facing hemophilia care in an uncertain health care environment.

Summit participants examined the current environment for hemophilia care and identified the main principles and desirable action items of a five-year NHF strategic plan. Based on the summit deliberations, The Lewin Group organized and synthesized these main principles and desirable action items into five categories: Evidence, Guidelines, Comprehensive Care, Financing, and Workforce. Given the time constraints of the summit, participants did not develop a sequence or timeline for these elements within the five-year period. However, NHF is prepared to conduct the necessary further planning, involving budgetary limitations, priority setting, and other work, to do so.

Evidence: Strengthen Evidence Base for Hemophilia Care

- NHF should call for and support the generation of rigorous evidence pertaining to the safety, effectiveness, and cost-effectiveness of hemophilia care. Such evidence should pertain to therapies for hemophilia as well as to organizational, delivery, and payment models of hemophilia care. Key elements are:
 - Evidence of the impact of hemophilia care on patient-oriented outcomes and quality of life, accounting for preferences and other personal circumstances of individual patients
 - “Head-to-head” trials and other studies of the comparative effectiveness of alternative interventions

- Alternative trial designs, e.g., Bayesian and other adaptive trials, and other methodologies to overcome limitations to conducting clinical research in hemophilia, including challenges to enrolling sufficient sample sizes in clinical trials
- Cost-effectiveness and budget impact analyses of hemophilia care (e.g., prophylactic therapy vs. acute/episodic care) that encompass not only the costs of factor products and other therapies but costs and savings accruing from supplementary and downstream (follow-on) care, and the burden on caregivers
- NHF should promote ongoing data collection pertaining to patterns of hemophilia care delivery, outcomes, and costs. Such data will inform policies regarding organization, delivery, and financing of care; resource allocation; and research priorities. Example of such data collection include:
 - Relative distributions of patients receiving types of hemophilia care by provider type, e.g., distribution of patients receiving prophylactic vs. acute/episodic therapy and access to factor products and other services via HTC, home care companies, and other providers
 - Scope of services made available among HTCs and other providers
 - Emergence, diffusion, and impact of ACOs, health insurance exchanges, and other elements being implemented under the ACA
 - Distribution of costs of care met by public sector and commercial payers, 340B programs, patient copayments, and related patterns of payment for hemophilia care
 - Epidemiological data pertaining to hemophilia, including patterns of long-term patient outcomes, comorbidities, and adverse events
- NHF should promote funding of biomedical and health services research related to hemophilia and hemophilia care by such government entities as the NIH, AHRQ, CDC, and CMS, including its Center for Medicare and Medicaid Innovation (CMMI); PCORI; and the life sciences industry.
- NHF should stress to research funding agencies that, although it is a rare disease, hemophilia represents the broader set of blood disorders with high individual clinical and economic burdens that are increasingly costly to the health care system, including the need to manage such burdensome and costly comorbidities as HIV/AIDS and hepatitis C.
- NHF must remain actively engaged in setting national and international research agendas for hemophilia and other blood disorders. NHF should seek input on research priorities from its members and other stakeholders.
 - An example of a likely priority area is research to overcome the development of inhibitors to factor products and their complications, affecting patient outcomes, quality of life, and costs. This research might address, e.g., high-dose clotting factor concentrates, bypassing agents, and immune tolerance induction therapy.

Guidelines: Generate and Maintain Evidence-based Clinical Practice Guidelines

NHF recognizes the need for a stronger evidence base for what works in hemophilia care to inform the development of clinical practice guidelines for use by providers, patients, and payers, as well as to support quality assurance efforts and accreditation of providers.

- NHF should sponsor the generation and maintenance of evidence-based clinical practice guidelines for hemophilia care. The process for generating and updating these guidelines should be consistent with the current state-of-the-art.
- In particular, NHF should re-examine the MASAC hemophilia care guideline development process, including use of a systematic approach, evidence gathering and appraisal, improving transparency and documentation, and other aspects.
 - NHF should ensure that these guidelines achieve, at minimum, the inclusion criteria set forth by the National Guideline Clearinghouse.
 - NHF should also consult other standards for producing evidence-based guidelines, such as the Appraisal of Guidelines for Research & Evaluation (AGREE) Instrument.
- Consistent with the state-of-the-art, these guidelines should be updated based on new research findings, including from well-designed clinical trials and other studies, emphasizing evidence of patient outcomes and accounting for patient perspectives where appropriate.
- NHF should review and improve, as appropriate, the dissemination and awareness of the MASAC guidelines, including efforts targeted to hemophilia providers, patients, and payers, respectively.
- As the guideline development and dissemination process improves, NHF should seek to link these guidelines to standards of care, quality metrics, and provider accreditation.
- As part of developing and updating guidelines, NHF and MASAC should draw on the systematic reviews and related evidence gathering and appraisal to identify research gaps to inform priority setting in hemophilia research.

Comprehensive Care: Promote Comprehensive Hemophilia Care

NHF will continue to advocate for making available continuous (“24/7”) comprehensive hemophilia care, commensurate with the varying needs of hemophilia patients.

- NHF should advocate and otherwise support hemophilia care that is guided by standards of practice, quality, and accreditation as determined by MASAC and other authoritative bodies.
 - These standards should apply to care delivered by all hemophilia care providers, including HTC, home care companies, and others, as appropriate.
 - NHF should consider developing or otherwise sponsoring an accreditation process for hemophilia care centers of excellence.
- NHF should call on HTCs and other providers to conduct or otherwise participate in ongoing data collection and original research to contribute to the evidence base for

hemophilia care, including pertaining to safety, effectiveness, and cost-effectiveness of care, as well as patterns of utilization and costs.

- Based on available evidence, NHF should help to educate payers regarding the value of the comprehensive services provided by HTC, including how appropriate use of these services can be cost-effective, e.g., due to cost offsets due to downstream savings.
- NHF should encourage patients and consumers to exercise their responsibilities for demanding high standards of care from HTCs, home care companies, and other providers.

Financing: Promote Adequate Financing of Comprehensive Hemophilia Care

NHF should promote a more adequately financed system for providing comprehensive hemophilia care to all patients, as needed.

- NHF should conduct or otherwise sponsor ongoing analyses of hemophilia care financing and patient utilization patterns (including flow among different provider types) to support policy-making about hemophilia care organization, delivery, and financing. The ACA likely will dramatically alter the financing for hemophilia care and it is important for NHF to monitor the implementation and impact of relevant ACA provisions, including ACOs, elimination of lifetime caps, annual caps, and pre-existing condition clauses.
 - Among these analyses, determine the actual costs to HTCs of providing high quality comprehensive services, and the extent to which HTC services are funded by the 340B program and other sources.
- NHF should promote greater transparency of hemophilia care revenue sources, funding allocations, and patient utilization patterns, in support of patient care decisions, payment policies, and policy-making regarding the organization and financing of hemophilia care.
 - Share this information, tailored appropriately, with patients, clinicians, payers, and other hemophilia stakeholders.
 - Help to educate patients and family members regarding the relative pros and cons of purchasing factor product from HTCs vs. specialty pharmacies, particularly in the context of access to comprehensive care to meet varying patient needs.
- NHF should promote linking of financing mechanisms and funding levels for hemophilia care to accreditation based on achievement of quality standards.

Workforce: Strengthen the National Workforce for Hemophilia Care

NHF recognizes that comprehensive hemophilia care requires an adequately trained, experienced, and continuously replenished workforce. NHF also recognizes that the hemophilia workforce, including hematologists and other clinicians specializing in hemophilia care, and those involved in hematology research, is small and aging, posing a looming shortage. Some of the factors contributing this shortage include relative compensation levels and limited funding for research.

- NHF should call attention to the workforce shortage and support ongoing analyses of the status and trends of the hemophilia workforce and the factors contributing to it.

- NHF should promote workforce development for clinical and non-clinical physicians and other health professionals, social workers, and other paid professionals and volunteers to staff HTC and other provider organizations.
- NHF should promote efforts by public and private sector organizations that support education, training, participation in conferences, and other hemophilia care and research career development efforts.
- NHF should support efforts to develop more efficient staff mixes for hemophilia care, particularly optimal use of mid-level practitioners and nurses as physician extenders, as well as social workers and other caregivers. Such staff mixes may be especially helpful for providing hemophilia care in rural and other communities where access to hematologists and HTCs is limited.
- NHF should promote reimbursement mechanisms that compensate hemophilia clinicians and other care givers in ways that provide incentives for efficient, high-quality care, including linking of payment to quality measures and care coordination and related types of value-based purchasing incentives.

Conclusion

Hemophilia care has undergone great changes, exposure to unprecedented threats, and discovery of life-changing therapies within just the last three decades. Recent investments in hemophilia care, management, and research have allowed the community to thrive, despite the severe nature of the disorder and substantial costs of treatment. While ensuring the safety and efficacy of factor products were of utmost importance for hemophilia patients in the 1980s, improving access and managing cost are critical in the current, rapidly evolving health care environment. As the nationally-recognized patient and consumer organization for hemophilia in the US, the NHF faces great challenges, yet is well-positioned to promote the highest quality of care for all people with hemophilia, while recognizing and addressing the concerns providers, payers, and other stakeholders. The principles and desirable action items raised by the NHF strategic summit participants and organized into the elements of a strategic plan in this report will help NHF to develop initiatives to address the current and unfolding challenges and opportunities facing hemophilia care in uncertain times for health care.

Appendix A: Participants

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Audience

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Dave Cavanaugh
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Jorge De la Riva
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Neal Fitzpatrick
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Kedrion Biopharma, Inc.

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Johanna Gray
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Cavarocchi/Ruscio/Dennis Associates

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Appendix B: Agenda

National Hemophilia Foundation: Strategic Summit May 24, 2012

- 8:00 – 8:15 Welcome and meeting objectives (Val Bias)
- 8:15 – 9:00 Introductions (Cliff Goodman, moderator)
- Affiliation, areas of expertise, and anticipated contribution for the day
- 9:00 – 9:30 Environmental overview of the current state of hemophilia care and potential implications of the ACA (Robert Rubin)
- 9:30 – 10:30 Organization and delivery of services (Goodman)
- How can NHF ensure that all patients receive optimal hemophilia care - whether through HTC, specialty pharmaceutical/homecare organizations and/or physicians who treat individuals outside of the HTC network?
 - Why are there variations in the types of services that patients receive for hemophilia care and management across the US?
 - How can NHF help to ensure adequate funding for the HTC network?
- 10:30 – 10:45 Break
- 10:45 – 12:30 Finance/Insurance (Goodman)
- What is the potential impact of managed care and tiered specialty pharmacy benefits for hemophilia patients?
 - What is the potential impact of Accountable Care Organizations (ACO) on hemophilia care?
 - What are some other care coordination models that should be considered by the hemophilia community?
- 12:30 – 1:30 Lunch
- 1:30 – 2:30 Standards of practice/guideline development (Goodman)
- Are there variations in standards of practice for hemophilia care and management? Why or why not?
 - Are there evidence-based guidelines for management of hemophilia?
 - What are the barriers for developing stronger evidence-based guidelines and how can these be addressed?

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- 2:30 – 3:30 Outcomes Research (Goodman)
- What are the evidence gaps to be filled by new research in hemophilia?
 - What are some of the key barriers to conducting research in hemophilia (e.g., inability to conduct head-to-head clinical trials, recruitment issues, genotyping, etc.)?
 - Should NHF identify and promote research priorities for new therapies? 3:30 –
- 3:45 – 4:30 Break
- 3:45 – 4:30 Workforce (Rubin)
- What are the workforce concerns for hemophilia and how can we address them?
 - How can NHF aid greater workforce development for providers, chapter staff and volunteers?
 - Is there a favorable career pathway for health care providers interested in hemophilia?
- 4:30 – 4:45 Summary points (Goodman)
- 4:45 – 5:00 Closing remarks and adjournment (Bias)