



Management Discussion and Analysis

For the Year Ended December 31, 2017

Henry Ford Health System and its affiliates' (the System) Management's Discussion and Analysis (MD&A) is intended to provide a high-level overview of the consolidated financial performance for the year ended December 31, 2017, with comparable prior year information, including operational highlights. This document includes certain forward-looking comments based on management's beliefs; actual results could differ materially. This document should be read in conjunction with the audited consolidated financial statements as of and for the years ended December 31, 2017 and 2016.

It is management's intention to regularly provide an MD&A in conjunction with the public release of unaudited quarterly and audited annual statements. The intent is to provide current and prospective bondholders and other interested parties with a better understanding of the System's consolidated financial and operational performance. It is also management's intention to schedule periodic investor calls or post investor presentations.

Organizational Overview

The System is a Baldrige award-winning, integrated, academic health system that includes both extensive provider assets and insurance operations. The System offers differentiated capabilities, as well as strong focus on population health, value based care, and disease management.

The System has an integrated hospital and employed physician model with an extensive integrated provider network, including:

- Five acute hospitals and two psychiatric hospitals geographically distributed, including Henry Ford Hospital, an internationally known academic referral center.
- More than 1,500 employed physicians and scientists, primarily through the Henry Ford Medical Group, a mature and long established integrated group practice.
- A pluralistic physician model, leveraged through the System's physician-led clinically integrated network called the Henry Ford Physician Network.
- A diversified ambulatory network with more than 70 medical and health centers, behavioral health clinics, a substance abuse facility, home-based care, pharmacy, eye care, and other retail services.
- Strong market share, brand and differentiation within southeastern and south-central Michigan, as well as a statewide, national, and international reputation resulting in substantial referral volume.
- A substantial role in teaching health professionals, complemented by a significant research and discovery function.

In addition to extensive provider assets, the System also has three decades of experience managing pre-payment arrangements through Health Alliance Plan of Michigan (HAP). HAP has products for every market segment and serves more than 628,000 members through six distinct lines of business: group insured commercial, Medicare Advantage (the oldest plan in southeast Michigan), Medicaid, self-funded, network leasing, and individual coverage through public and private exchange participation. HAP also has substantial Administrative Services Only (ASO) capabilities.

Given its history and assets, the System is uniquely positioned to succeed in a pay-for-value environment.

On February 1, 2016, HAP completed the merger, which was accounted for as an acquisition, with HealthPlus of Michigan, pursuant to the Agreement and Plan of Merger dated October 30, 2015, and the order approving acquisitions as approved by the State of Michigan Department of Insurance and Financial Services. The fair value of the assets acquired exceeded the liabilities assumed resulting in an inherent contribution of \$18.5 million, which was recorded during the year ended December 31, 2016.

On April 1, 2016, Allegiance Health Group and Affiliates merged with the System, which was accounted for as an acquisition. Allegiance Health Group and Affiliates, headquartered in Jackson, Michigan, operates an acute care facility and has more than 40 sites offering a wide array of primary and specialty care and represents a significant geographic expansion of the System's health care provider operations beyond southeastern Michigan. The fair value of the assets acquired exceeded the liabilities assumed resulting in an inherent contribution of \$221.8 million, which was recorded during the year ended December 31, 2016.

Summary of Operating Results

The System reported consolidated excess of revenues over expenses before unusual items of \$146.5 million for the year ended December 31, 2017, on consolidated revenues of \$6.0 billion, providing a margin of 2.5%. This represented an increase from consolidated excess of revenues over expenses before unusual items of \$95.1 million on consolidated revenues of \$5.7 billion, providing a margin of 1.7%, reported for the year ended December 31, 2016. The 2017 excess of revenues over expenses before unusual items includes a full year of Allegiance Health Group and Affiliates performance compared to nine months included in 2016. The change in System performance was primarily due to increased net patient service revenue due to increased outpatient volume, investment income, and curtailment gains on both the Allegiance Health Group and Affiliates and HAP retirement plans. This was partially offset by the impact of wage rate increases and EPIC implementation costs at Allegiance Health Group and Affiliates.

The System launched the "System Redesign & Transformation" program with the goal of achieving increased value by deploying projects targeting population health, greater integration across the care continuum, improved access for customers, and enhanced corporate and support services.

Due to pressures on insurance plan performance, HAP withdrew all preferred provider organization (PPO) products from the Exchange marketplace effective January 1, 2017 and is now only selling health maintenance organization (HMO) products on the Exchange.

Revenue Growth

As a fully integrated health system, total consolidated unrestricted revenue grew to \$6.0 billion during the year ended December 31, 2017, up \$273.7 million or 4.8% from the year ended December 31, 2016. The System recognized consolidated net patient service revenue of \$3.3 billion and consolidated healthcare premium revenue of \$2.3 billion for the year ended December 31, 2017. Consolidated revenues associated with healthcare services provided by the System to members of its capitated insurance products are included in premium revenue. Consolidated net patient service revenue reflects amounts recognized from all other payers and patients.

Consolidated net patient service revenue increased \$323.8 million or 11.0% for the year ended December 31, 2017 compared to the year ended December 31, 2016. Consolidated net patient service revenue, excluding Allegiance Health Group and Affiliates, increased by \$183.9 million or 7.2% for the year ended December 31, 2017 compared to the year ended December 31, 2016. This was primarily due to increased outpatient volume (outpatient facility visits, excluding Allegiance Health Group and Affiliates, increased 11.1% over prior year levels), expanded specialty pharmacy activities, and an increased all payor case mix index.

The provision for bad debts increased \$30.2 million in 2017 in part due to enhanced policies increasing collections on previously reserved accounts which resulted in a shift between bad debt and charity. The provision for bad debts also increased due to the addition of Allegiance Health Group and Affiliates.

Expense Trends

Consolidated total expenses increased by \$222.3 million or 4.0%, for the year ended December 31, 2017 compared to the year ended December 31, 2016. Consolidated total expenses, excluding Allegiance Health Group and Affiliates, increased by \$62.8 million or 1.2% for the year ended December 31, 2017 compared to the year ended December 31, 2016. Following are explanations for the most significant variances.

Consolidated salaries, wages, and employee benefits increased by \$189.1 million or 8.5% for the year ended December 31, 2017 compared to the year ended December 31, 2016. Consolidated salaries, wages, and employee benefits, excluding Allegiance Health Group and Affiliates, increased by \$108.6 million or 5.4% for the year ended December 31, 2017 compared to year ended December 31, 2016. This was primarily due to the full year impact of the 2016 salary increases and market adjustments, salary increases implemented in September 2017, and a strategic investment of staff (including physicians) in high growth areas.

Consolidated supplies expense increased \$97.3 million or 11.5% for the year ended December 31, 2017 compared to the year ended December 31, 2016. Consolidated supplies expense, excluding Allegiance Health Group and Affiliates, increased by \$71.5 million or 9.2% for the year ended December 31, 2017 compared to the year ended December 31, 2016 primarily due to pharmacy expense related to expanded specialty pharmacy activities and increased volume in

advanced technology areas such as the various cutting-edge procedures within our structural heart program.

Community Benefits and Uncompensated Care

The System expended \$614.0 million on Community Benefit programs for the year ended December 31, 2017, compared to \$564.0 million in the prior year. The increase is primarily due to increased unreimbursed Medicare and Medicaid cost related to volume growth and governmental payment constraints. The improvements in the cash collections in 2017 combined with an increase in previously reserved for insured patients resulted in a decrease in charity care at cost. The System's total cost of uncompensated care as a proportion of consolidated net patient revenue approximated 13.5% and 13.3% at December 31, 2017 and 2016, respectively.

Consistent with expectations resulting from the Affordable Care Act, there were fewer patients without health insurance coverage due to expanded coverage through the subsidized health insurance exchanges and Michigan Medicaid expansion. However, there has been a corresponding growth in Medicaid patient volume, where payment rates do not fully cover the cost of care. In addition, a large number of patients are finding that they now have insurance coverage with deductibles and copayments that are beyond their ability to pay.

Given its mission, the System also had substantial unreimbursed costs for health professional education, research and other community services, which are also important components of overall Community Benefit expenditures.

Balance Sheet

The System maintains a solid balance sheet. Total System days cash (inclusive of insurance operations) at December 31, 2017, totaled 122.2 days compared to 122.5 days at December 31, 2016. Total System days cash is lower than some health systems due to the substantial size of the insurance segment and the amount of capitation revenue and operating expenses for medical services. If days cash was calculated only using expenses of the provider segment for the denominator, days cash would be a much stronger 173.5 days at December 31, 2017 and 183.8 days at December 31, 2016.

Investment Performance

The System maintains significant operating investments including cash and cash equivalents, short-term investments, and long-term investments. Consolidated investment income recognized during the year ended December 31, 2017 was \$95.8 million compared to \$47.4 million recognized during the year ended December 31, 2016. The increase in consolidated investment income is consistent with market returns on the underlying securities in these funds. In addition, 2017 includes the change in net unrealized gains on investments from the fourth quarter of 2017.

Effective October 1, 2017 the System elected to transfer its investments previously accounted for as available-for-sale securities to trading securities. The System determined that the trading securities category is more appropriate based on its new investment strategies and policies and all System assets will now be accounted for as trading securities. As a result, all unrealized gains and losses will be included in the excess of revenue over expenses from consolidated operations.

This change resulted in the reclassification of net cumulative unrealized gains on investments previously classified as available-for-sale securities of \$59.2 million from the statement of changes in net assets into the consolidated statements of operations as an unusual item.

Fourth Quarter Strategic Developments and Additional Highlights

The System continues to have a strong leadership team, which includes both long tenured executives and other seasoned leaders who have joined more recently. Fourth quarter highlights include:

- Robin S. Damschroder, CPA, MHSA, FACHE, was named Interim Executive Vice President and Chief Financial Officer for the System. As a health care leader with more than 27 years of experience, she has served in executive roles with University of Michigan Health System, Saint Joseph Mercy Health System, and Deloitte & Touche LLP. More recently, she has been an independent consultant, providing strategic, financial and operational assessments, including facilitation and executive/team coaching. She received a bachelor's degree in General Studies from the University of Michigan's College of Literature, Science and the Arts and a master's degree in Health Services Administration from the UM's School of Public Health.
- Press Ganey awarded Rana Awdish, M.D., medical director for the Center for Physician Communication and Peer Support, its Physician of the Year Award. Additionally, Dr. Awdish won the prestigious National Compassionate Caregiver of the Year Award from The Schwartz Center for Compassionate Healthcare, a national leader in the movement to make compassion a vital element in every patient-caregiver interaction. Dr. Awdish received these two national honors for her leadership in advancing more effective physician communication with patients.
- Denise Brooks-Williams, president and CEO of Henry Ford Wyandotte Hospital, was recognized by the National Association of Health Services Executives with its 2017 President's Award. The annual award recognizes outstanding leadership, commitment, performance and service to the organization, which helps hospitals and hospital executives better serve diverse populations.
- Akshay Khandelwal, M.D., was named incoming Chair-elect of the Board of Governors for the American College of Cardiology, the nation-wide medical society for cardiologists in the United States. He is a senior staff member in Interventional Cardiology at Henry Ford Hospital and serves as Director of Outpatient Cardiovascular Services at Henry Ford's Edith and Benson Ford Heart & Vascular Institute.

The System is nationally and internationally recognized for its innovation and excellence. The following are awards received and unique achievements during the fourth quarter:

- The cardiology team at Henry Ford Hospital performed the 1,000th TAVR heart valve replacement at Henry Ford Hospital. The procedure, done exclusively through a catheter, was performed by a team led by pioneering interventional cardiologist William W. O'Neill,

M.D., and cardiothoracic surgeon Gaetano Paone, M.D. Henry Ford is the first system in metro Detroit and fewer than 20 in the United States to reach this milestone.

- The Division of General Internal Medicine at Henry Ford Hospital was recognized nationally for enhancing Henry Ford's innovative primary care. General Internal Medicine was among eight care models cited for "exemplary primary care practices" by the Agency for Healthcare Research and Quality. The model, called Academic Patient-Centered Team Care (APCTC), enhances an already existing and successful Henry Ford model of a patient-centered medical home known as Patient Centered Team Care. The APCTC is unique because it tailors services for a socioeconomic and disadvantaged patient population by providing a patient experience that "meets the patient's needs every time" through continuous patient and care team engagement.
- The System was honored with the Davies Award of Excellence for using Epic to reduce venous thromboembolism by 50 percent.
- Henry Ford Innovations was once again named one of Becker's Hospital Review's 50 Hospitals and Health Systems With Innovation Programs. The selected hospitals and health systems have committed to innovation with dedicated centers and departments. Henry Ford Innovations began six years ago.
- Henry Ford Hospital was named a Top 50 Heart Hospital for the second year in a row, selected from more than 1,000 hospitals evaluated across the United States. The award is part of the 100 Top Hospitals program by Watson Health, a division of Truven Health Analytics. The Watson evaluation is based on publicly available data that compares patient outcomes, operational efficiencies and financial metrics. Study winners had better outcomes while operating more efficiently and at a lower cost than others included in the analysis. According to Truven's analysis, if all cardiovascular hospitals performed at the same level as the top 50 hospitals, 8,000 more lives could be saved annually, nearly 3,500 heart complications could be avoided, and more than \$1.3 billion in healthcare spending could be eliminated.
- Henry Ford Macomb Hospital in Clinton Township earned a spot on the Becker Healthcare's list, "100 Hospitals with Great Heart Programs". The hospitals named to the list are national leaders in cardiovascular healthcare and have received recognition for delivering top-notch patient care.

Other Major 2017 Achievements

- On June 6, 2017, the System broke ground on the new home for the Henry Ford Cancer Institute. The Brigitte Harris Cancer Pavilion will be a destination center for ambulatory cancer treatment, precision medicine, clinical trials and research, and enhanced support services for cancer patients. It is expected to open in early 2020. The building is backed by a \$20.0 million gift from Detroit businessman and philanthropist Mort Harris, in honor of his late wife Brigitte. The donation is part of a \$40.0 million package to support the building project and three specific program areas: precision medicine, brain cancer, and pancreatic cancer.

- The System announced a partnership with the Detroit Pistons which includes building a state-of-the-art training, rehabilitation, and sports medicine complex in the New Center area of Detroit. The multi-discipline Henry Ford-Detroit Pistons Performance Center will include new practice and front-office facilities for the NBA team; a comprehensive sports medicine, treatment, and rehabilitation facility managed by the System; and public spaces available for community relations activities, networking receptions and team-hosted events. Ground was broken this past summer. The System also became the official health care provider for the Pistons, beginning with the 2017-2018 NBA season, and will have naming rights for the new performance center complex.
- The System partnered with the State of Michigan to electronically combat the opioid epidemic. At a press conference hosted by the System, the state announced it had secured a funding source to pay for the integration of the revamped Michigan Automated Prescription System with the electronic management programs of hospitals, physician groups and pharmacies, including the System's Epic system.
- In conjunction with the American Hospital Association's 1-2-3 for Equity Pledge, the System continued to lead change in ensuring equitable care. With more than 90 percent employee participation, the System is out in front of other participating health systems in training employees, through a health equity course created by the System.
- The international market continued to present an opportunity for the System to leverage its clinical know-how, brand, and technology. To enter this market, the System has been working with groups in Saudi Arabia and India to apply proven clinical practices, protocols, policies, and technologies from the System towards the development of new hospitals. Aldara Hospital and Medical Center in Saudi Arabia, scheduled to open in 2018, will be a multi-specialty hospital with a focus on ambulatory care. Naruvi Hospital in India (projected to open 2019) will be a 400-bed multi-specialty hospital based on the System's hub-and-spoke model.
- High-profile innovations included:
 - In Cancer: Henry Ford was the first in the world to use the View Ray for the treatment of cancer. View Ray uses real-time images for more precise and accurate radiation treatments. HIPEC uses heated chemotherapy medications during surgery and can extend survival from months to years.
 - In Heart: The use of 3D printed models to more accurately estimate the size of valve needed in transcatheter mitral valve replacement. BASILICA is a procedure used during a valve replacement operation to prevent coronary obstruction – and Henry Ford was the third in the world to use it.
- Work began on Allegiance Health's investment to make way for a new three-story, 59,000 sq. ft. patient tower (Fall 2018 completion) and Health Innovation and Education Center, which will be a regional training center for health professionals (Spring 2018 completion).

- Ambulatory facilities were added with new practices in Milford, Waterford, and Richmond. A SuperVision Center opened in West Bloomfield and the System expanded sites in both Port Huron and Lake Orion. Community Care Services also transitioned its clinical team to a new Pharmacy Advantage site in Troy, followed by its call center and operations and fulfillment.
- The System played a leadership role in bringing several initiatives to Detroit. The first was the Q-Line street car route along Woodward Avenue in Detroit. The 6.6-mile route includes 20 stations serving 12 locations; the System is the sponsor of the Grand Boulevard station. The second is the MoGo Detroit Bike Share sponsorship. The program is an affiliate of the Downtown Detroit Partnership with 430 bikes at 43 stations in 10 Detroit neighborhoods.