HMA

HEALTH MANAGEMENT ASSOCIATES

Delivery System Excerpt from the Tarrant County Long Range Planning Report

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THE CITIZENS BLUE RIBBON COMMITTEE
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Research and Consulting in the Fields of Health and Human Services Policy, Health Economics and Finance, Program Evaluation, Data Analysis, and Health System Restructuring

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5. JPS Delivery System

This chapter presents a high level overview of the JPS delivery system. HMA conducted a wide-ranging assessment of the current JPS delivery system concentrating on network design, capacity and integration in the context of current and future healthcare trends and needs. Delivery system qualities that were evaluated as part of the assessment included comprehensiveness of the network, accessibility of services, delivery system integration and coordination, quality of the care provided, technology integration and optimization, and workforce strategies that meet future healthcare skill needs. The HMA Delivery System team toured various JPS facilities and met with various leadership from inpatient, specialty, trauma, ED, Behavioral Health (BH) and community health services. Interviews were conducted with various community stakeholders and healthcare leaders from surrounding Tarrant County hospital and healthcare entities that included the VA Medical Center, Cook Children's, Texas Health Resources, Baylor All Saints, Methodist Mansfield, MHMR and homeless providers. Other sources of information included existing needs assessment reports for the county, JPS's Strategic Facilities Utilization Plan, the American Hospital Association (AHA) Database, Dallas-Fort-Worth Hospital Council reports (DFWHC), JPS internal reports, and general research.

Introduction

JPS is a large and complex publicly funded health system that has been responsible for serving the healthcare needs of a disproportionally larger percentage of the low income and uninsured residents of Tarrant County. As a tax-supported health care network for Tarrant County, JPS will continue to be a vital healthcare provider for Tarrant County communities. The JPS Network operates a large acute care hospital (565 beds), provides emergency services and trauma care at the only Level 1 Trauma Center in Tarrant County and operates over 40 community health and school-based services throughout the Tarrant County communities. JPS is the only Tarrant County healthcare entity that provides emergency psychiatric services. JPS teaching and training programs are well recognized and the Family Medicine program is currently the largest nationally recognized Family Medicine training program in the nation.

JPS as a premier healthcare provider	
Trauma	• Tarrant County's only Level 1 Trauma Center
Behavioral Health	• JPS Provides Psychiatric Emergency Services • Leads county in DSRIP projects that have improved the BH delivery system
Training/Academics	• Renowned Family Medicine Residency Programs • Fully accredited GME programs
Quality	• Certified Stroke Center • Certified Chest Pain Center • Low BH Readmission Rates • JC Accreditation • Accredited American College of Cancer Surgery Center • Level III Neonatal Intensive Care Unit • NICHE Program Designation
Primary Care	• Level 3 NCQA PCMH recognition

Population Health	• Large number of DSRIP projects impacting socio-economic disparities
Workforce 	• Highly engaged workforce (84th nationally) • JPS is one of Tarrant County's largest employers • Only public entity named among regions best employers by Dallas Morning News for 2016
Technology	• Network EPIC Implementation

JPS is to be commended for its mission driven strategies that are positioning it for the ever changing healthcare environment. The Tarrant County community values the work JPS does with limited resources to serve the more complex and high cost healthcare needs of the vulnerable populations of Tarrant County.

The following outlines some of the major external forces JPS must navigate through as it builds and expands its delivery system:

National (USA)
• **Health Care Reform – ACA Appeal/Replacement** • **Drug Pricing and New Pharmaceuticals** • **Information Technology Disruptions** • **Mergers and Acquisitions** • **Value Based Payments** • **Less Federal Spending** • **Aging Population** • **Provider Shortages**
State (Texas)
• **Medicaid Non-Expansion State** • **Reduction in Medicaid Spending**
Local (Tarrant County)
• **Significant Population Growth** • **Highest Growth in 65+ Age Group** • **Transportation Infrastructure Challenges** • **Increasingly Diverse Population**

JPS has current strategies and initiatives around service, quality of care, population health management, costs of care and workforce engagement that set direction for the current and future healthcare delivery system needs of the county. Future healthcare trends include more focus on preventative and community based care. **Delivery of care will increasingly be defined and measured by the quality of care and the health outcomes achieved.** New technologies will continue to be developed that will improve access to care and move healthcare systems towards population health management through better integration and coordination of care. Quality programs will expand to include regulatory compliance and process improvement programs that lead to more safe and reliable care.

Although JPS has an impressive and comprehensive network for the population it serves, it cannot and will not be able to provide all the care for the growing safety-net healthcare needs. JPS will therefore, need to continue to develop strategies that address access to primary care, specialty care, and behavioral health care. These strategies will also need to be developed to account for the projected physician shortages in primary and specialty care. Additional strategies will need to be explored that foster partnerships with other Tarrant County health care entities in order to provide care for Tarrant County residents and to improve health outcomes. Increased use of advanced practice professionals and other non-physician healthcare providers, such as clinical pharmacists, will need to be considered to address provider shortages. Furthermore, technology will need to be optimized across the Tarrant County delivery system to increase information sharing and leverage care integration.

This following report will review several components of the JPS delivery system and look at areas for new growth. HMA's report also identifies additional opportunities for JPS to consider as it continues to build and restructure its delivery system. Lastly recommendations that align with healthcare trends and the JPS mission are presented.

A Closer Look at the JPS Delivery System

1. Primary Care Services

As in most geographies across the nation, safety-net primary care services are distributed outside of the county supported hospital. JPS currently provides the vast majority of the primary care needs of the Tarrant County safety net population. JPS has a rich and widely distributed network of community health centers that currently provide primary (adult and pediatric), specialty (adult), dental, behavioral health, social service, optometry, acute care, diagnostic, lab, and pharmacy services.

Nationally, hospital care is shifting from high cost hospital settings to lower cost primary care settings. As the population grows there will be more demand for primary care services. The expected shortage of primary care providers will make it challenging for healthcare systems like JPS to meet the growing primary care demand. Nationally, primary care is moving towards models of care such as patient-centered medical homes and accountable care organizations that emphasize quality, care teams, care coordination, patient engagement and lower costs for populations of patients. Again, the delivery of care will increasingly be defined and measured by the quality of care and the health outcomes achieved in primary care and other aspects of the delivery system.

JPS has significant strength in its primary care network. The large number of primary care centers are embedded in the communities JPS serves and are staffed by dedicated staff and providers. The primary care providers are part of a recently formed physician group (Acclaim) that is positioned to align the quality and delivery of care across primary care settings that moves toward value-based care and reimbursements. Almost all of the primary care settings are Level 3 NCQA certified patient-centered medical homes (PCMH). Lastly, JPS is using current available technology to improve access to care, integrate and coordinate care and develop population health programs.

Primary care needs were consistently identified by the Tarrant County residents as being the main priority healthcare need for the County. The CHNA chapter reported high rates of obesity, age-related

diabetes and hypertension for Tarrant County as compared to national rates. As with many safety-net healthcare entities, JPS faces challenges with primary care access as the demand for these services grow as evident by longer waits for new appointments and long time to answer calls in the call center. This is especially concerning since safety-net populations seek care late and are sicker upon first presenting. Primary care access challenges at JPS present downstream challenges as patients seek primary care in higher cost settings such as emergency care and emergency department settings. This is further compounded by the transportation challenges JPS patients incur. The CHNA addresses the county's transportation system that creates barriers for some Tarrant County residents being able to access "right" sites of care. Lastly, additional primary care providers are needed to fill open positions as physicians retire and leave.

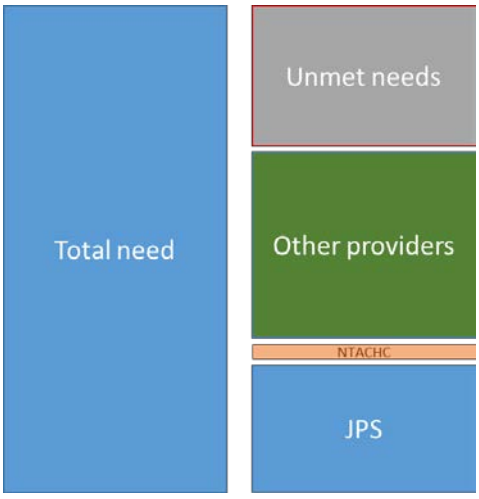
JPS has worked to create additional access through extended hours and Saturday hours, central scheduling and addition of acute care and same day visit appointments. The patient portal, MY CHART, allows established patients to request appointments. JPS tracks the access to new primary care appointments using the industry standard measurement of third next available appointment (TNAA). The following shows TNAA for JPS community health centers as of September 2016 and represents an average of all centers combined.

Table 48: Third Next Available Appointment for Primary Care Visit (Average)*

Third Next Available Appointment for Primary Care Visit (Average)*	
Community Health Centers	72 days (Range 7-114 days)
School Based Clinics	5 days (Range 2-8 days)

**As of September 2016- Provided by JPS*

The residents of Tarrant County clearly see JPS as a vital resource in providing primary care to communities in the county. JPS, however, clearly cannot provide all the current and projected primary care for the safety-net population of Tarrant County and will need to continue to find ways to improve access to primary care.



As in most geographies, safety-net primary care in Tarrant County is distributed beyond the county-supported (JPS) and federally-supported (NTACH) institutions. Using methodologies described in the section on population demand, JPS is estimated to be fulfilling about one quarter of the primary care needs of the population under 250% federal poverty level and North Texas Area Community Health

Centers (NTACHC, the only FQHC) seems to be serving well under 5%. Together therefore, they provide less than 30% of the predicted demand. Although the level of true unmet need for the safety net population is not known, it is clear that JPS currently provides care for the majority of this population with assistance from federally supported health centers (NTACH), institutions with charitable missions and

small number of private practices. These sources will need to be considered and supported by the strategies developed by the county in meeting the needs of this population.

Additional recommendations include:

- Optimize the patient empanelment system by empaneling all patients to a PCP; this will enable JPS to more accurately measure primary care capacity and population served, and serve as a foundation for population health management. This includes a system to risk stratify empaneled patient to ensure that the highest risk patients are enrolled in care management.
- Continue to create and build upon new ways for patients to access medical homes through patient portals (EHR), virtual access (telehealth), and secure text messaging applications.
- Consider greater integration of specialty services into primary care settings.
- Assess primary care facilities for improved efficiencies (capacity, throughput)
- Further brand and promote community health centers internally and externally
- Develop partnerships with other health care providers and organizations to provide additional access.
- Consider greater use of advanced practice providers in primary care settings to address current and future provider shortages.

Pediatric Services

Nationally, children's access to healthcare has improved since 2000 as more children received health insurance coverage. This improvement has been greatest in the more vulnerable populations. Challenges and threats for the future of pediatrics include the growing shortage of pediatric subspecialists as evidenced by increasing delays in receiving timely appointments to specialty care.

Cook Children's in Fort Worth is the largest provider of inpatient and outpatient children's services in Tarrant County and is a Level 2 Pediatric Trauma Center. JPS does not provide pediatric inpatient or pediatric specialty services. JPS provides the majority of primary pediatric care in school based clinics that serve as medical homes for the children and their families of Tarrant County that are enrolled in the area school. Outpatient pediatric services are also provided at JPS and in many of the community centers. The school based clinics are staffed by nurse practitioners and the community centers are staffed by pediatricians. All provide well and acute care services for children from age 0-18 years of age. Pediatric specialty care is provided by Cook Children's and Dallas Children's. Despite this network of pediatric services in Tarrant County, pediatric care in the county continues to be fragmented and the county continues to see high rates of childhood obesity, low rates of recommended childhood immunizations, low birth rates and high infant mortality.

Below are some of the current pediatric health indicators that were presented in the CHNA section.

Table 49: Pediatric Health Indicators

Child Health Indicator	Tarrant County	Texas	National Benchmark	Severe Benchmark
Percent of children (19-35 months) not receiving recommended immunizations 4-3-1-3-3-1-4[i]	37.8%	37.8%	30.0%	34.6%
Percent of children not tested for elevated blood lead levels by 72 months of age[ii]	83.9%	82.2%	84.1%	89.3%
Percent of children (10-17 years) who are obese[iii]	17.8%	19.1%	15.0%	18.1%

JPS Pediatric services are monitoring and addressing many of the Tarrant County preventative health concerns through data analysis and evidenced-based practices. There are, however, opportunities for JPS to form greater collaborations with other pediatric healthcare entities in Tarrant County to improve pediatric health status and outcomes of the pediatric populations served in the JPS Network. This collaboration includes sharing and exchange of medical records and information, developing collaborative population health programs to manage obesity and developing integrated care coordination programs that direct children to proper places of care.

Behavioral Health, including pediatric behavioral health services, is a priority concern of the community. Cook Children's behavioral health services provides a range of services for children between the ages of 3 and 12 years. JPS school based clinics have a grant that will add 2 behavioral health workers to help address some of the pediatric behavioral health needs.

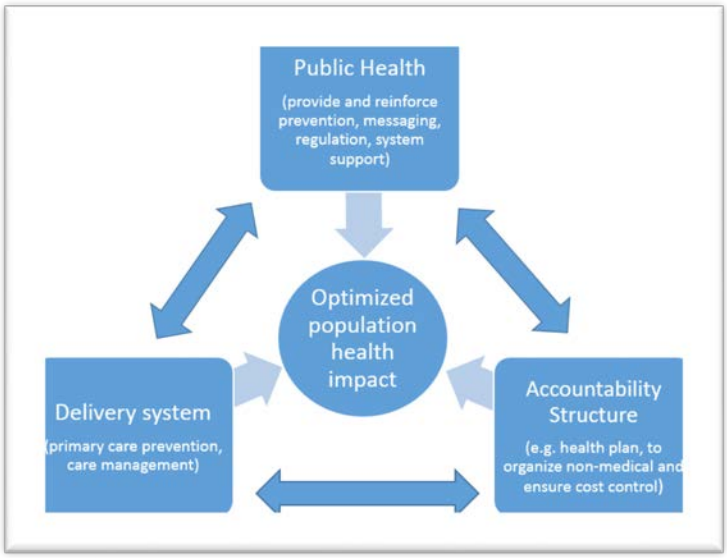
Based on the stakeholder interviews, infant mortality, defined as the death of a baby before its first birthday, is a major concern. As reported in the CHNA section, infant mortality rates for Tarrant County were among the highest for the state of Texas. The CHNA also reported higher rates for certain zip codes of Tarrant County and higher rates among African Americans. Nationally the infant mortality rate for African American infants is more than twice that of White infants. Tarrant County reported higher preterm birth rates and late entrance into prenatal care compared to state and national rates. Race, ethnicity, age, location, access to care, education and income all influence pregnancy outcomes. Lower income African Americans of Tarrant County experienced higher rates of infant mortality compared to other Tarrant County populations. The 2015 Tarrant County Fetal Infant Mortality Review[iv] reported maternal unhealthy weight as one of the largest risk factors for infant death in Tarrant County accounting for 67 percent of infant deaths in 2012. Furthermore, only 52% of women started prenatal care in the first trimester and Medicaid was the predominant insurance source.

Tarrant County has a large number of community, faith and business leaders, health care organizations including JPS and government agencies that are committed to lowering the infant mortality rate of Tarrant County. The County has established a Tarrant County Infant Health Network that serves as the Community Action Team and receives recommendations from the Tarrant County Infant Mortality Review Care Team.

Recommendations:

- Infant Mortality: The Tarrant County community will need to identify a community or organizational leader that reviews, assesses, monitors and more importantly coordinates efforts and programs to address this high-priority concern.
- JPS should continue to develop and enhance partnerships and programs with Cook Children's in the care of children in Tarrant County to improve health outcomes.
- JPS should continue to enhance partnerships with community organizations to address social disparities that contribute to poor health outcomes.
- JPS would benefit from Improve care coordination and management programs to span across all continuums of care in the county including women's health and school based clinic programs.
- JPS should continue to expand behavioral health services in school based clinics.

For a more in-depth analysis of infant mortality rates for Tarrant County, see Appendix 12: Infant Mortality Rate in Tarrant County.



Population Health Management

Population Health is defined as "the health outcomes of a group of individuals, including the distribution of such outcomes within the group." Population health management is defined as "the iterative process of strategically and proactively managing clinical and financial opportunities to improve health outcomes and patient engagement, while also reducing costs."

JPS is developing and implementing population health strategies through its DSRIP projects. With empanelment of patients, JPS is equipped to identify common conditions and populations in need of population focused care. Current population health activities include common clinical core measures and action plans displayed on strategic initiative white boards across community health settings. Diabetic populations are being monitored for hemoglobin A1C, a measure that helps manage the care of diabetics. JPS continues to develop the technology and data analytics capabilities for current and future population health management programs, however, will need to develop more robust health information exchange (HIE) systems that provide information on care outside of the JPS system and allows for improved health management.

To have a greater impact on population health, a closer collaboration with Tarrant County Public Health and other relevant organizations is needed to focus on prevention initiatives and social determinants of health. For example, partnerships to improve food security, food policies and availability of healthy foods can help prevent and manage diabetes and obesity.

Care Management

As inpatient service utilization is declining nationwide, JPS will need to continue to move from hospital-centric care to outpatient and community-centric care. Key to this shift will be a strong care coordination and care management program that allows for early identification of health problems and for the right care to be delivered in the right setting and at the right time. In the coming decades, Tarrant County will see an increasing number of patients with chronic diseases including diabetes, high blood pressure, heart disease and cancer.

JPS is early in the development of a robust care management program that moves away from traditional utilization management hospital function programs to a programs that are tailored to managing a patients care and/or disease. JPS' Care Management Plan, dated October 3, 2016 outlines a robust care management plan for both inpatient and outpatient programs, as well as transitions of care between the two programs. Full implementation of the plan is estimated to be complete in late 2017. In primary care, the model for care coordination is to include a triad of a RN Care Manager, LCSW and an unlicensed care coordinator in every community health center. This will be critical to implement as the sites prepare for the PCMH recertification under new NCQA requirements that include care management components.

While JPS is building and strengthening an integrated care management program across the JPS Health Network, JPS at this time has very few linkages with other hospital systems as it related to care management and care coordination programs. An integrated care management program across the county is extremely important in managing the care of patients who receive care in multiple health care settings across the county. Virtual integration of disparate health systems has the potential not only to improve health outcomes for patients receiving health care in multiple health systems, but saves costs by reducing duplications of care (testing, procedures). The current JPS' Care Management plan should expand to include county wide integrated care management programs.

Information Technology and Data Use

The delivery of medical care is continuing to become more and more dependent on information technology and the effective use of data. Information technology, from the foundation of the electronic medical record (EMR) to basic phone routing technology, can frustrate and hobble an organization or enable and facilitate excellence. New uses of data such as individual predictive analytics and sophisticated customer relation management are important keys to success in a new and changing payment environment.

EMR. JPS uses Epic which is a best-in-class industry standard. Not every installation of Epic leads to effective documentation and billing. Epic has to be configured and used in a manner that supports best practices. Epic use does not necessarily equal best use of EMRs, but clearly this EMR choice allows for best practices. JPS seems to be doing well in the use of Epic and will be able to take advantage of advances made by this leading EMR. This includes portal technology which JPS has in use (Epic's MyChart). Another advantage to Epic use in Tarrant County is the fact that there is a concentration of hospital system users, allowing for the use of Epic's Care Everywhere which facilitates data sharing at the point of care.

Mobile Health. Mobile health (or mHealth) is a broad term, sometimes used to mean health interactions occurring through the use of mobile devices (phones, pads, other connected devices). JPS does not have mobile health applications in use, though patients can use mobile devices to access appointments. JPS does provide patient portal/web-access to MyChart and a pharmacy application for requesting and fulfilling medication refills. Although this an important area to be aware of, there would be significant opportunity costs to focusing on this. Fortunately, innovative companies are very focused on mHealth (mobile health) and these will be fully available for use at JPS when particular applications align with initiatives. Innovations in digital behavioral health may be of particular importance in increasing the impact of limited human resources and physical facilities that cannot fulfill the entire need. Some companies deliver person-specific educational and support content to help patients manage symptoms and use their strengths more effectively. Others allow patient-health system interactions as well as monitoring of larger populations than otherwise would be able to be handled by a care manager. Careful vetting of solutions is critical in this fast-evolving IT realm, particularly with complicated and quickly shifting reimbursement and liability issues.

Telemedicine technology. Telemedicine is a broad term sometimes used to mean the same things meant by mHealth. More specifically though, telemedicine can be defined as the delivery of healthcare services remotely through use of technology. These could be visits with a physician while the patient is at a distant site, even home. This has particular utility in rural environments. Such tele-visits, however, tend not to increase capacity but rather provide access for those who would otherwise be unable to travel. JPS will probably find the investment in econsults more fruitful. Econsults increase capacity for meeting the specialty needs of populations because the interaction is peer to peer, making it more time efficient as well as transferring knowledge and skills more efficiently to primary care providers, making future consultations less likely to be needed. JPS is building experience with peer-to-peer telemedicine interactions within the Delivery System Reform Incentive Program (DSRIP).

Data aggregation tools. Creating a data warehouse and data marts for various users has become a necessary infrastructure for health systems that are seeking to go beyond the basic transactional care of bed-days and DRG billing. The EMR is designed to compliantly document care, facilitate the care of individual patients, and bill for care events. Many sources of data outside of the EMR need to be married to the clinical data in order to efficiently deliver care, incorporate global payments, and to succeed in covering populations (through contract or through public responsibility). Data to be aggregated for various purposes include human resources (time, productivity, performance, patient feedback, wellness, etc.), customer relations (managing contacts with patients and members), cost accounting, and utilization events external to hospital (e.g. re-admissions at other hospitals). Today data aggregation can occur as a cloud based service external to the hospital, allowing for less investment to translate to earlier wins. But the IT infrastructure (the data warehouse) is only part of the equation of data aggregation. Also needed is human capital in the form of data analysts able to leverage the power of the aggregated data. JPS does not have robust data aggregation capabilities and will need to plan for ongoing investments to build this important capability.

Population Health. The IT tools to succeed in population health are health plan-like customer relation management (CRM) applications, population enrollment capabilities (not just the patients seen, but

ability to manage files from a payer of people who have not yet been seen), health information exchange, data warehousing, and robust data analytic capabilities. Data aggregation discussed above is a key function to create population health capabilities. JPS uses Epic which has modules for a number of the population health functions. JPS already uses Healthy Planet, a patient registry module that allows management of sub-populations such as diabetics and to monitor quality metrics across the population. Crimson (not an Epic module) is used specifically for JPS Connection population management, though Crimson serves as a patient registry and does not provide population enrollment capabilities at a level of a health plan.

Consumer Driven Health Care Technology. In the IT marketplace "Consumer Driven Health Care" has tended to mean price transparency in the setting of high deductibles and cost-sharing. This has little meaning for JPS: JPS is unlikely to need to build or use such technology. However, another way this term is used is as a synonym for patient-centric care and high engagement. This meaning is very relevant to JPS and a successful future. There are specific types of technology that JPS will need to employ to maximize effectiveness. An example is text messaging as a tool for patient communication. Specific companies and software solutions are being created rapidly and existing technologies are adding text messaging capabilities. JPS will need to think about this in terms of a cohesive experience for consumers and solving for high-impact use cases. Uses cases for text messaging include:

- Supporting care paths such as sending patients' text about their upcoming procedure (e.g. "Start clear liquids now"). Companies such as CareWire are doing this.
- Direct patient communication through secure text messaging. Relay is an example among many.
- Automated coaching messages to support patients with specific conditions. Companies such as CareMessage are doing this.
- Appointment reminders are a basic but impactful use case. Above companies can do this along with many others such as West, PatientPrompt, Mutare and many others.

Text messaging can be particularly impactful in populations being served by JPS.

Another emerging area of creating a patient centric care environment through technology is patient decision support and patient values communication tools. PatientWisdom is an example of a solution in this space. Populations that are historically underserved, and the individuals within these populations who are experiencing serious illnesses, are in particular need of support in expressing their goals of care and connecting more deeply with their care team. Technology can assist with this.

These are some of the high impact areas in "consumer-driven health care" for JPS to explore to meet other strategic goals.

2. Specialty Care Services

Nationally, there are and will continue to be increasing demands for specialty care as the population grows and ages. Further complicating this will be a short supply of specialists that may not be sufficient to keep pace with future specialty care needs. Much like primary care services, specialty care services will continue to shift from hospital settings to outpatient multispecialty Centers of Excellence. With this shift, new and innovative care delivery models for specialty care will need to be developed including

"virtual" referral networks that have shared medical records, shared best practices and shared education and research programs. Specialty care is an integral part of preventative care and population health management. For example, Breast Clinic must be available to care for women who receive screening mammograms and are found to have findings that require more advanced and specialized breast care. Specialist and sub-specialists also are often called upon to provide care to hospitalized patients.

The CHNA report shows that there will be considerable growth in the Tarrant County population and with the aging population. Furthermore, Tarrant County ranks high in prevalence of diabetes, hypertension and cancer compared to national rates and chronic disease prevalence will remain health concerns for the county as population ages and grows. As outlined in the primary care section, there currently are unmet needs for specialty care services for the safety net population of Tarrant County and this can be expected to grow as the population grows and number of uninsured continues to expand. Specialty services are minimally provided at FQHCs, free clinics and school based health centers and many of these health care sites rely on JPS to provide the needed specialty care. Transportation to specialty care appointments will remain a challenge for the JPS population. Furthermore, recruitment and retention of specialists will be challenged by the inadequate supply of specialists to meet the increasing demand for their services. JPS will need to continue to pursue partnerships with other Tarrant County healthcare entities to provide additional specialty access especially for those specialties that JPS has found difficult to recruit for.

JPS currently has over 40 specialty clinics in the Fort Worth and Arlington area. Locations are provided in the CHNA section (Map 9). JPS continues to evaluate and develop areas of specialty focus such as cancer and geriatric care. As mentioned earlier, JPS has a well aligned physician group (Acclaim) that tracks quality and health outcomes.

As with primary care services, JPS experiences long delays in access to some of their specialty services as evidenced by long time to next available appointment. Primary care providers report difficulty in receiving timely referrals for their patients, thus resulting in some patients receiving delayed care or patients showing up in the Emergency Room for care. The JPS Community Advisory Group echoed the difficulties in obtaining outpatient specialty care, citing pulmonary, neurology, and behavioral health as the most difficult services to access.

Despite the poor design of some specialty spaces, JPS has worked to optimize efficiencies in the specialty areas. Most notably is how the surgical clinic is designed with the waiting area located in the corridors surrounding a centrally closed-in clinic area making wayfinding, privacy and throughput challenging for the patients that use this service.

Finally, there is opportunity for JPS to improve disease and population management by moving appropriate specialty care services, based on the needs of the community served, into primary care centers. Primary care centers that care for large numbers of patients with diabetes and hypertension would benefit from co-located specialties such as podiatry, diabetes education, eye services, renal and cardiology services to provide more coordinated and integrated care.

3. Inpatient Services

Inpatient care is defined as care provided for those patients admitted to a hospital. Nationally, hospital inpatient admissions and necessity for inpatient beds is decreasing while, at the same time, the need for outpatient care is increasing as hospital care shifts from hospital to ambulatory settings. Despite this shift, there will continue to be a need for certain care to be provided in a hospital setting (trauma). A movement to value-based reimbursement and greater use of chronic disease management and care management programs, as discussed in the Primary Care section, are expected to support hospital efficiencies, quality of care, and number of admissions and readmissions.

JPS is Joint Commission Accredited and has an established regulatory program which responds to opportunities for improvement and changes in the hospital regulatory environment. Based on the projected population growth and taking into account the shift of more services to outpatient settings, Tarrant County will not have enough inpatient capacity by 2037. JPS does not have sufficient capacity currently for populations served and will need significant additional capacity just to maintain current population coverage. The 2011 Strategic Facilities Utilization Plan looks to increase the number of inpatient beds by 52. This increase of inpatient beds will not meet the projected future inpatient needs of the county. HMA recommends that consideration should be given to expanding the number of inpatient beds by building out the shell space outlined in the facility plan.

Some JPS inpatient units are housed in an outdated and aging facility that presents inherent quality (patient experience, confidentiality and safety) and operational challenges. Multi-bed rooms in the aging facility contribute to capacity and throughput challenges for patients needing to be admitted, and limit the ability to maximize reimbursement. JPS continues to work within these limitations to improve efficiencies in the inpatient areas.

Additional inpatient care recommendations include:

- JPS will need to continue to assess the type of beds needed and change designation of beds to meet the needs of the JPS population. As care management programs expand and more surgical procedures are moved to ambulatory services, one can anticipate that fewer medical/surgical beds will be needed.
- JPS will benefit by continuing to expand its care coordination and care management programs. This will direct care to right places, right time and at lower costs.
- Where appropriate, JPS will need to continue to assess and look for opportunities to move services from an inpatient setting to an outpatient setting. This will include moving ambulatory surgical procedures currently being performed in the hospital setting to ambulatory surgery centers and looking for more of cancer care being provided in outpatient cancer centers.
- As discussed in the Trauma section, addition strategically located Level I Trauma services may need to be expanded when the population exceeds two million depending on utilization of JPS' existing capacity. JPS will need to partner with the county to determine when and potentially where additional trauma services should be established and help direct and coordinate new trauma services for the county.

4. Emergency Department Services

(Behavioral ED services will be discussed in the Behavioral Health section)

The Emergency Department (ED) is often the front door for care for safety net populations, especially for those who have challenges accessing care in the outpatient settings. Future growth in safety-net populations will further tax public and private hospital Emergency Departments. Even as care is being shifted to outpatient settings, EDs continue to experience high volumes. As population demographics age, there is predicted higher ED utilization of this subset of the population.

Tarrant County ED services will continue to experience high use as the Tarrant County population increases and ages. The growing uninsured population will continue to use emergency settings as the front door for healthcare as they find it difficult to navigate other more appropriate places for care.

JPS ED has a highly dedicated and skilled staff that is budgeted to see 122,000 ED visits for fiscal year 2017. JPS is one of the busiest EDs in the county and like other safety-net hospitals, JPS generates a large number of its hospital admissions through the ED. ED throughput is taxed by an insufficient number of readily available inpatient beds. Patients are often held for long periods of time in the ED waiting to be admitted to the inpatient areas. At the time of HMA's visit with ED leadership, 41 patients were waiting to be admitted from the ED with no available beds. Although JPS has a direct admit procedure from the community and specialty clinics, patients often are sent to the ED to wait for an inpatient bed.

The JPS ED also experiences delays in obtaining rapid follow-up appointments from emergency care and patients are often discharged from the ED without a follow-up appointment to an appropriate care setting. Although JPS ED can identify the PCP through EPIC, they are currently unable to appoint patients back to their PCP. This often results in return visits to the ED. Through its care management program, in collaboration with other community resources, JPS is now identifying frequent ED utilizers and addressing access, transportation and housing factors that drive unnecessary and frequent ED use. JPS will need to continue to develop its care management network (inpatient, outpatient, pharmacy, specialty, social services) that help direct patients to appropriate care settings.

The current JPS Emergency Services space has outgrown the volume presenting for service and need for additional ED space will need to be addressed in the Cumming Corporation's Long Range Facilities Planning analysis. JPS has worked to centralize ED triage so patients can be moved upon presentation to appropriate places of care; thus minimizing the movement and transfer of patients from one emergency service to another.

As with many Emergency Departments, operational efficiencies cannot be addressed independently and are affected by both inpatient and outpatient efficiencies. There is opportunity for JPS ED to more closely collaborate with inpatient and outpatient services to develop policies and procedures that address the interdependent operational inefficiencies.

5. Trauma Services

Nationally, trauma is the number one cause of death for Americans between 1 and 46 years of age and is the number three cause of death overall. Each year trauma accounts for 41 million visits and 2 million hospital visits. Trauma centers are given a facility designation with Level 1 being the most comprehensive and highest level of trauma care. Level 1 Trauma Centers provide trauma education, training and research in trauma injury prevention for physicians, nurses and other health care providers.

The American College of Surgeons estimates that one Level 1 Trauma Center is needed for every 1 million people. Today, Tarrant County population is close to 2 million people. With projected population growth, and depending on utilization of JPS' existing capacity, Tarrant County may need an additional, strategically located Level 1 Trauma Center in the near future. JPS is well positioned to take the lead in helping the county determine future Level 1 Trauma needs for the county.

At the time of this report, the following were designated Trauma Centers in Tarrant County:

Table 50: Trauma Centers in Tarrant County

Hospitals in Tarrant County	Designation
John Peter Smith Hospital Fort Worth	Level I
Cook Children's Medical Center Fort Worth	Level II
Texas Health Harris Methodist Hospital Fort Worth	Level II
Baylor All Saints Medical Center Fort Worth	Level III
Texas Health Harris Methodist Hurst-Euless-Bedford	Level III

Source: Department of State Health Services.

As the only Level 1 Trauma hospital in Tarrant County, it is viewed by the county as a premier trauma center. JPS has dedicated and strong leadership over Trauma services and has established relationships with other Tarrant County trauma services. Most notably, JPS has been recognized by the American College of Surgeons for its first-of-a-kind geriatric trauma program in Tarrant County.

The opportunities for JPS Trauma services include (1) additional training and education programs to prepare future providers in trauma care, (2) coordination and integration of trauma services with other hospital services (3) partnerships with other Tarrant County entities to provide post hospital care programs and services including long-term care, skilled nursing facilities and rehabilitation services and (4) partnerships with community and public health programs to enhance community health through injury prevention education.

6. Behavioral Health Services

One in five US citizens has a diagnosable mental disorder[v] with only 40% receiving *any* treatment for their condition. Of those who do receive care, only a quarter sees a behavioral health specialist,[vi] leaving the rest to be treated in physical health settings by primary and specialty medical care clinicians,

alternative medicine settings, or social service agencies. In the primary and specialty medical outpatient setting, patients with behavioral disorders are often not recognized or engaged in effectively delivered treatment, resulting in a mere 13% of patients receiving minimally effective treatment.[vii] The impact of untreated mental illness on total healthcare costs is significant, increasing health care costs two to three times with most of the excess cost related to "facility-based care" (i.e., emergency room and inpatient treatment), and unrecognized, behavioral health conditions can lead to decreased adherence to recommended medical/surgical treatments and lack of follow-up for care.[viii]

In Texas, the need to expand access to behavioral health care is also pressing. The Hogg Foundation has documented that many more adults and children need mental health services than are currently served in the public mental health system.[ix] The demand for services is simply over pacing the capacity of the specialty behavioral health system. The increase in demand is related to general population growth—one of the highest in the country at the rate of 9.2%—as well as service gaps and challenges in meeting full capacity.[x] According to the Hogg Foundation analysis, as many as 27.6% of the 240,088 adults in Texas with serious mental illness who meet criteria for 200% of the Federal Poverty Level (FPL) (66,273 adults) did not receive services in community mental health centers.[xi] Even worse, 62.5% of children with serious emotional disturbances (SED) living below 200% of the FPL (78,763 young people) did not receive these critical services.[xii] This is despite the fact that the average number of people (adults and children) served in the community behavioral health system increased from 2013 to 2015.

With high poverty and uninsured population rates also comes a significant need for behavioral health services. Tarrant County has 12.8% of adults who self-report major episodes of depression, which is more than twice the national benchmark and significantly higher than the severe benchmark of 7.3%. While the percentage indicators for suicide and substance use disorders fall below the national benchmarks, the hundreds of thousands of individuals suffering from these disorders call for much needed services in the county.

Recognizing the high demand for behavioral health services, JPS has made significant investments, including service expansion and quality improvements through the Delivery System Reform Incentive Payment (DSRIP) program and other funding sources. These dedicated efforts and increased resources have positively impacted the mental health care provided within JPS and across Tarrant County evidenced by the fact that most performance metrics reported exceed national benchmarks. [xiii], [xiv] JPS has prioritized programming that has helped reduce readmission rates by focusing on high need patients, as well as supported improvements in the behavioral health delivery system within the county.

The JPS Psychiatric Emergency Center (PEC) is a significant community asset. Many communities across the country are just beginning to build psychiatric emergency departments or provide dedicated psychiatric beds in emergency departments, offer 23-hour observation units or crisis stabilization units, and community triage centers. The fact that JPS has a long standing, dedicated PEC and started staffing it with psychiatric providers 24 hours per day over ten years ago speaks to the recognition that people experiencing behavioral health crises require targeted assessment and a variety of solutions, which often do not include an inpatient stay.

JPS is viewed by stakeholders as the "go-to" Tarrant County provider for people with the most complex behavioral health needs. There are specific areas where improvements at JPS are needed to ensure a robust and quality system of care. The aging JPS inpatient units (Trinity Springs) and PEC physical spaces impose significant challenges for patients and staff alike. The PEC can become crowded, and the limited space and room configuration hampers JPS' ability to fully maximize inpatient admission diversion. On the inpatient units, all rooms are double occupancy. As a result, there are times not all beds can be used, as some patients require private space for clinical reasons such as physical agitation or sexually inappropriate behavior.

Further, the Trinity Springs units are small and the physical layout is cramped. In addition, the units have cinderblock walls, limited natural light, and can have heating and cooling challenges. While there is outdoor space available, there is very limited indoor recreation space for patients. Psychiatric patients are best served when there is ample space for groups of people to meet, people have room to find quiet locations within the shared or common areas where noise and other stimulation can be more tolerable, and room to pace or walk is available. Without this physical environment people experiencing psychiatric crises can become easily overwhelmed and psychiatric symptoms exacerbated.

In addition, the location(s) of both Trinity Springs inpatient facilities and the PEC in relationship to the emergency department (ED) and medical staff are less than desirable. The PEC is on 10th floor of the main hospital, some distance from the ED and easy drop off for families or patients. If medical clearance is required, transfer to the main ED requires transportation and navigation of elevators. If admitted to a JPS inpatient psychiatric bed, staff must transport patients through a long corridor ("tunnel"), in between buildings and across parking lots. The "tunnel" is dark and has several doors along the way that pose elopement risks. If a medical emergency takes place at the Trinity Springs pavilion staff report the quickest they have been able to transport a patient through the tunnel for medical care is eight minutes.

Walking through the JPS facilities, care of the physical space, both maintenance upkeep and building improvements that are reasonably feasible have been priorities. Spaces have been updated to ensure that they are safe and attractive within the confines of the facilities. Staff have done what is possible in terms of minimizing risks. Despite these efforts the limitations that the aging facilities and physical layout present remain significant clinical impediments and safety issues.

In addition, JPS has limited capacity and programming in areas that will be critical to expand within Tarrant County in the future in order to meet behavioral health demands including:

- Services for children and adolescents
- Targeted services for the geriatric and aging populations
- Inpatient beds and longer-term beds
- Integration of behavioral health supports into community-based, ambulatory primary care settings
- Urgent behavioral health care/ED diversion for behavioral health-related issues outside of Fort Worth and the main JPS campus
- A substance abuse strategy and services—currently there are no SUD-treatment services provided at JPS

- A behavioral health population health strategy and behavioral health care management programming and infrastructure

To meet the current and growing behavioral health needs in Tarrant County it is critical that a **county-wide behavioral health system of care be developed**. It is recommended that JPS convene providers, and lead efforts that will result in a map of the current system of care, clarify eligibility criteria for current services, and ensure mechanisms are in place to help people access available services. Future tasks to be undertaken include identification of system gaps and planning to fill priority areas of need in collaboration with partners, to develop a shared population health strategy, risk stratification methodology, assessment, care plans, and care management resources, and explore mechanisms to share pertinent health information across the system of care. Creation of a Tarrant County Mental Health and Substance Abuse Wellness Campaign, that catalogues current prevention and wellness programming, promotes what is offered, and identifies opportunities to expand services, is needed to help keep people healthy and promote early identification of people struggling with behavioral health issues. Priority partners to include in this effort are private and other psychiatric hospital providers, including Cook Children's, MHMR (Tarrant County's Local Mental Health Authority), other Community Based Organizations (CBOs), social service organizations, and corrections health leadership from JPS and MHMR.

A successful behavioral health system of care helps people stay healthy and manages costs by ensuring access to evidence-based, community-based services, demonstrated to be effective. Access to a continuum of behavioral health services across the system of care promotes ongoing care needed to proactively manage behavioral health issues and are shown to minimize the need for emergency room visits, avoidable inpatient admissions, and involvement with the criminal justice system. Tarrant County will need to **continue to invest in the development of evidence-based outpatient services**. Recommendations include expansion of behavioral health providers integrated into primary care settings to enhance health promotion and intervene when risk factors or concerns are identified such as drinking, occasional depression and anxiety. Brief interventions from a behavioral health provider and psychiatric medication prescribed by the primary care provider with support from a consulting psychiatrist should be available. If this is not sufficient or higher risks are identified, specialty behavioral health services are required. These specialty services can take place within community behavioral health settings and include a variety of evidence-based practices, many already available yet are limited across the county. The goal is to make available the full continuum that can be utilized in a manner that treats an individual with the lowest intervention needed in the most appropriate setting. Recommendations include developing a robust system of care for people with both mental health and substance abuse issues.

No one behavioral health provider can meet current service needs or anticipated future demand for services. JPS must lead and partner with other organizations to develop solutions. However, given demonstrated expertise with the most complex behavioral health patients JPS must embrace a leadership role both as a community-based provider and hospital-based, emergency care provider. Given that 12.8% of Tarrant County's population (or approximately 253,000 people) need psychiatric services for depression and 8-9% (or approximately 178,000 people) experience a drug overdose each year, the total of 1,146 state and private psychiatric beds in the county are insufficient to meet the

need. This issue is further compounded by the high rate of uninsured individuals in Tarrant County (20.33%), many of whom need access to these services. Even with JPS as the predominant public inpatient psychiatric provider for the county, its 148 public beds (which include adult, adolescent and Local Commitment Alternative beds) do little to mitigate the need.

Determining how many inpatient beds a community needs within the private or publicly funded behavioral health system is difficult at best. It is universally agreed across the behavioral health field that the need for inpatient psychiatric beds must be evaluated in the context of the full array of available state and community mental health services. The Treatment Advocacy Center (TAC), considered the experts on this topic, published a white paper in 2008, describing a standard ratio of 50 *public* behavioral health beds for every 100,000 people.[xv]

The recommendation included adult, children and forensic beds but did not provide estimates for each group. In March of 2016, TAC updated its recommendations to 60-80 beds per 100,000 including adult, child and forensic beds.[xvi] Per the American Association of Geriatric Psychiatry and American Academy of Child and Adolescent Psychiatry, experts assert that there is no existing information available to determine number of inpatient beds needed for children and adolescents[xvii] or geriatric populations[xviii] specifically.

In the United States, the average number of beds per 100,000 declined 34% between 1998 and 2013, from 34 to 22 beds per 100,000, while suicide rates increased between 1999 and 2014 by 24%.[xix] In 2016, the ratio of State facility beds to United States residents was a mere 11.7 beds per 100,000 people across the country.[xx]

In Texas, the Joint Commission on Access and Forensic Services' 2016 Legislative Report Forensic Plan reported an existing 2,463 public psychiatric beds across the state, equating to 10.5 beds per 100,000 Texans, as well as an estimated need to add 1,800 beds over the next eight years—1,400 immediately and 50 more each year to keep up with population growth.[xxi] According to Cannon Design's 2015 report, the estimated total need for privately and publicly funded inpatient beds in Texas was 5,425 beds in 2014, a number that will increase to 6,032 by 2024, a growth of 607 beds in the next 10 years.[xxii]

Today Tarrant County has 524 private and public psychiatric beds, 25 beds per 100,000 people in the county[xxiii]. JPS inpatient beds represent approximately 24% of the total dedicated psychiatric beds (does not include the med/psych beds) in Tarrant County:

- 132 total psychiatric beds
  - 116 acute adult beds
  - 16 adolescent beds
- 15 med/psych beds

Due to lack of capacity, in fiscal year 2015 JPS transferred 3,100 patients to other hospitals for inpatient admission (JPS 2015 Transfer Volumes) and paid $3.1M dollars to private hospitals for these patients who had no resources. This is a higher cost than if JPS cared for these patients.

The following assumptions were used for estimating **future psychiatric bed needs**. Building a significant number of new beds will require a phased in approach and may not be practical. Planning will require a strategy that includes building out the community-based system of care to minimize hospital-based services.

1. Over time with the development and investment of community-based services, diversion programming and enriched evidence based services, Tarrant County will be able to effectively manage inpatient psychiatric admissions with lower bed numbers. Therefore, estimates used half of the public bed estimate from the current literature, equating to 35 public beds/100,000 people.
2. Given JPS' positive performance with the most complex patients, 50% of public bed need should be located within the JPS facility.
3. Given lack of available beds within the state psychiatric facilities and similar growth needs, estimates do not include these beds. If new state beds become available or JPS is able to refer more patients to these facilities bed recommendations should be revised.
4. JPS will continue to contract with private facilities and identify opportunities to support improved outcomes for complex patients at these facilities, as well as direct lower need patients to private facilities. JPS should consider incorporating pay for performance contracting with private facilities to incentivize improved performance.
5. If any one of the above assumptions is not correct, revised estimates will be required.

Table 51: Recommended Inpatient Public Psychiatric Beds

Year	Recommended Tarrant County Inpatient Psychiatric Beds *35 public beds per 100,000 (see previous population estimates)	JPS Recommendations (based on 50% County need)	Estimated JPS Psychiatric Bed Gap Based on Recommended 234 Psychiatric Beds*	Bed Gap Based on Current Number of JPS Psychiatric Beds at Time of Publication: 132 beds
2017	707 beds	354 beds	120	222
2022	784 beds	392 beds	158	260
2027	861 beds	431 beds	197	299
2032	945 beds	473 beds	239	341
2037	1032 beds	516 beds	282	384

**Based upon recommendations from the 2010 Strategic Facilities Utilization Plan conducted by BOKA Powell.*

Additional recommendations include the need to integrate psychiatric beds within the main hospital structure, in proximity to the PEC and ED, creation of flexible unit space/structure so that beds can be flexed to serve adult, adolescent, geriatric, and the forensic populations, build a combination of private and double occupancy rooms, build enhanced physical spaces that will be required to manage the growing geriatric population and develop specialized geriatric inpatient services, assess the opportunity to expand services for children (12 and younger) in collaboration with Cook Children's, develop a plan for expansion of medical/psychiatric beds (not included in the counts above), and develop plan to add inpatient medical detox and other dedicated substance abuse treatment beds (not included in above estimates).

Lastly, it is recommended that JPS **expand and relocate the Psychiatric Emergency Center** such that capacity is increased by 10* and a designated psychiatric observation space with capacity for 16 patients* is created. The PEC should be located in proximity to the ED and psychiatric inpatient units.[1] In addition a space within the PEC should be developed and designated for substance abuse service assessment and needs, e.g., sobering beds.

Growth of Services in JPS Health Network

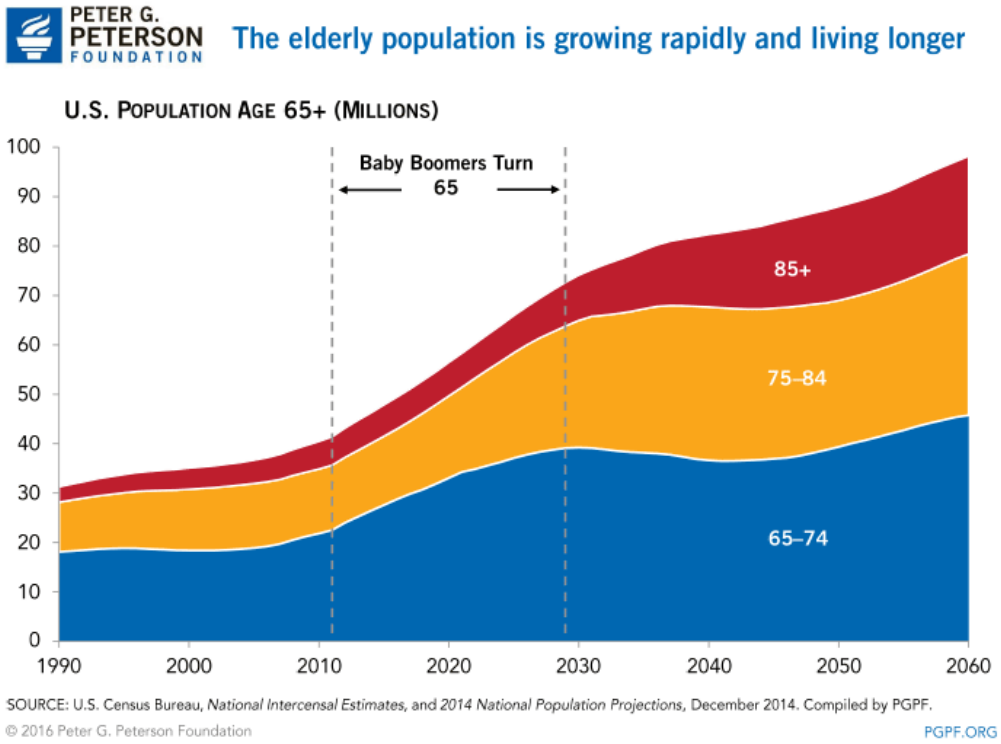
HMA identified two services that are well positioned to respond to demographic changes and healthcare needs of the county—geriatric care and cancer care.

Geriatric Care

As described in Section 3, Community Health Needs Assessment, the population over 65 years old in Tarrant County is growing at an increasingly rapid rate. In 2011, the first Baby Boomers turned 65 years old. By 2029, all Boomers will be at least 65 (see Table below). This group, totaling an estimated 70 million people, will have a significant impact on the U.S. health care system. The combination of the aging of the Baby Boom population, an increase in life expectancy, and a decrease in the relative number of younger persons, will mean that older adults make up a much larger percentage of the U.S. population than ever before. The implications for care of the elderly are sobering. A diminishing number of younger persons will be available to provide family support and care for the elderly.

A review of geriatrics data in Tarrant County show that it parallels the growth in elderly and increasing demands for geriatric care nationally. A review of the needs of older adults in Tarrant County was published in 2009. Many of those observation and recommendations still ring true today[xxiv]. The top health conditions affecting the region are Diabetes, Obesity, Hypertension, Chronic Lung Disease and Congestive Heart Failure. Leading causes of death include Heart Disease, Cancer, Stroke and Respiratory diseases- which in Tarrant County were all more common than the statewide Texas rate. All of these conditions become increasingly prevalent with age and point to priority needs for developing and directing health services within the County. Additionally, there will be an increased need for geriatric consultative, long-term care, rehabilitative and home care resources to meet the consequences of this increased prevalence of illness.

[1] Endorse JPS 2016-130 Attachment B Proposed Construction Project 2015.



Care for chronic diseases

As Americans have increased their years of life, the prevalence of chronic conditions associated with age has also increased. It is estimated that by 2040, almost 160 million people in the US, most of them elderly, will be living with chronic conditions. Chronic conditions can cause limitations in daily activities, hospitalization, transition to a nursing home, and poor quality of life. High-quality care for older adults with multiple complex chronic conditions requires a diverse range of skills for addressing their physical, mental, cognitive and behavioral needs. Care for today's older adults requires a high-volume of health care services in many settings and this complex care will only increase[xxv]:

- Within twenty years, one in five Americans will be over 65 and an estimated 90 percent of those Americans will have one or more chronic condition. [xxvi]
- By 2050 the number of Americans over 85, who make up the highest rates of chronic illness, poverty, and need for assistance with activities of daily living, will quadruple to 19 million [xxvii]
- Adults over 65 account for nearly 26 percent of all physician visits, 47 percent of all hospital stays, 34 percent of all prescriptions, 34 percent of all physical therapy patients, and 90 percent of all nursing home stays.[xxviii]
- 7.7 million people will have Alzheimer's disease in 2030, up from 4.9 million in 2008[xxix]

While many older adults with chronic conditions remain independent and active, others decline into frailty and dependence. Chronic conditions are often worsened by the high prevalence of depression and other behavioral health disorders in the elderly that are often underdiagnosed and undertreated[xxx].

Variation in condition severity, available treatments and resources available to elderly individuals may lead to widely divergent outcomes and, consequently, the need for care and health resources. For example, the common diseases of the elderly require lifestyle changes and preventative action. Without these action the conditions worsen and demand increasing health system resources for care. A lack of follow-up care and coordination of caregiver roles and the patient's inability to maintain the proper health regimen also increase the complications of disease.

Older adults need a variety of resources to help them manage chronic conditions, especially when several chronic conditions are present, a common occurrence. Medical help for treatment of chronic disease conditions is available to many older adults through Medicare and historically custodial care is provided through Medicaid for those with limited financial resources. The care resources needed to manage chronic conditions in day-to-day life are not as readily available. In order to balance behavioral changes, medications, and symptom relief strategies, older adults need knowledge about what to do, the belief that they can achieve success, and family to help. When elders do not have family members close by, additional financial resources may be needed to acquire assistance.

The current health care system is already overwhelmed by demands for geriatric care. Those specializing in the care of older adults cannot meet the current demand let alone the projected needs for eldercare.

- More than one million additional direct-care workers will be needed by 2018, according to the latest employment projections [xxxi]
- There are only 7,029 certified geriatricians practicing in the U.S. -- roughly half the number currently needed, and falling[xxxii]
- Approximately 55,000 social workers are currently needed in long-term care. By 2050, this number will nearly double to approximately 109,000 (DHHS, 2006). While nearly 75% of licensed social workers work with older adults in some capacity, many have not received training or education in gerontology (NASW, 2006a). In 2009–2010, only 2.8% of BSW graduates and 6.7% of MSW graduates completed a specialization in aging, or an average of 5% across all social work graduates (CSWE, 2011)[xxxiii]
- By 2020, the nursing workforce is expected to drop 20 percent below projected requirements[xxxiv]
- In 2010, physical therapists and physical therapist assistants had demonstrated vacancy rates of 18.6% and 16.6%, respectively, in skilled nursing facility settings across the U.S. [xxxv]
- Only 3 percent of practicing psychologists devote the majority of their practice to older adults and the current median age of practicing psychologists is 55[xxxvi]
- In 2001, there were about 2,600 geriatric psychiatrists. In 2005, that number was reduced to 2,100, less than half of the 5,000 that are needed to provide adequate care for the current population of older adults[xxxvii]

Older adults and their families face many financial issues in acquiring treatments and resources to support health. Financial resources can be quickly drained by paying for inpatient, specialty care or multiple prescriptions for chronic conditions.

As adults age, some need help only with daily activities, such as cleaning, cooking, or personal care, in order to remain in their own homes. Unfortunately, Medicare does not reimburse for this type of care, so older individuals who need this "custodial" help must pay for it out-of-pocket or rely on unpaid caregivers, often family members or other support persons. With the changing demographics fewer family caregivers are available to help care for elderly individuals. Tarrant County residents have identified income issues related to health care, prescriptions, transportation and other factors to be some of their highest priority concerns for the future.[xxxviii] Many of these same concerns were echoed in the community forums conducted by HMA in Tarrant County.

Significant recent reductions in hospital length of stay have produced a number of other consequences for families caring for acutely and chronically ill elders. Families need increasing support to help navigate the complicated financial and emotional demands of caring for elderly individuals. The increasing number without family supports are even more at risk of isolation financial loss and worsening health. The health issues of the elderly often intersect with cost concerns, family support issues and public infrastructure limitations to present immense challenges to comprehensive and effective health care.

JPS Geriatric Services

JPS offers a variety of services to meet the needs of the elderly in the system. But providing these services is not entirely without controversy. Other health systems in the Fort Worth area have made it clear they feel JPS services should be directed to the uninsured and Medicaid populations and that JPS should not compete with them for Medicare patients. On the other hand, many elderly have difficulty with access to health care. By providing care for a segment of elderly, JPS can provide some of these needed services and, through proper insurance remuneration, keep the system more financially healthy. Current JPS initiatives in Geriatric care include the following:

1. JPS Magnolia Health Center provides a multi-disciplinary team of geriatric doctors, nurse practitioners, nurses, social workers, pharmacists and others to provide care for those over 60 years of age. While the JPS Magnolia Center has many existing facilities and services specifically for geriatric patients, due to the facility's location and parking, it is still not an ideal location for elder patients. The Magnolia Center is located on the fourth floor of the building and does not have immediate parking outside of the building. The distance from transportation to the point of services poses a health risk for patients who are prone to falls and further complicates access to care for patients with mobility impairments or who are visually impaired.
2. JPS Home Visits provides care to qualified elderly in assisted living, independent living, or retirement communities.
3. Inpatient Geriatric Consultation Services are available for patients over 64 years in the hospital or emergency department. Services include a complete clinical evaluation of medical, psychological, social and functional status as well as cognitive evaluation and assistance with managing medication. Home transitions can also be facilitated.
4. The Care Transitions for Long-Term Care Team works to develop partnerships between JPS and skilled nursing facilities in Tarrant County.

5. The HELP program is an evidence-based patient program that provides an opportunity to tap the skills of volunteers. HELP connects trained volunteers with patients in the hospital who would benefit from a little extra attention during their stay in the hospital.
6. GT-55 Program Support for geriatric trauma.

JPS offers a fellowship in Geriatric Medicine. Under the auspices of the Family Medicine Residency Program, up to four family physicians and/or general internists can undertake a one year fellowship leading to a Certification of Added Qualifications in Geriatric Medicine. Fellows work in a wide variety of settings serving in academic and clinical roles. The fellowship is a one year interdisciplinary program. The fellows train under current national leaders in geriatric medicine in a variety of locations enabling the fellow to care for the full spectrum of geriatric patients. Fellows provide care to an ethnically, culturally and socioeconomically diverse population of elders. Opportunities to provide team-based interdisciplinary care in coordination with Family Medicine Residents, mid-level practitioners and medical students abound.

Despite these programs and services there still exists a substantial gap in care for elderly at JPS. Gaps in care are most evident in chronic disease management. The staff, resources and expertise to manage chronic disease must be built programmatically. For example, disease management programs are excellent mechanisms to build multidisciplinary care resources teams and processes for care coordination for the sickest of elderly patients. The recent initiation of the JPS Disease Management program in Diabetes Mellitus, in coordination with the Joslin Diabetes Center, is a good example of a targeted new resource for a high-need patients. These programs use evidence-based processes of care to help mitigate complications and provide comprehensive care for many common diseases. These programs will help prepare many physicians, nurses and other staff to help provide evidence-based and comprehensive care for many elderly with Diabetes Mellitus.

There is a need for other disease management programs which can lay the foundation for development of multidisciplinary care teams needed in geriatric care. This care management capability is an important educational issue, not just for MDs, but for nurses, behavioral health professionals, social workers and others. The focus of care management should be on improving quality of life and addressing functional limitations in the elderly. The goal should be to keep elderly persons living independently in their homes. A parallel strategy to promote independence in the elderly would be to increase care provision in community and ambulatory settings, like the Magnolia Health Center, close to seniors' homes.

Recommendations for Geriatric Care at JPS and in Tarrant County

1. Develop disease management programs that include interdisciplinary team building and use evidence-based processes of care;
2. Develop resources in care management capability including health information system technology, team building and outreach to community resources;
3. Increase training in geriatric care issues and approaches for the entire spectrum of the JPS work force;

4. Consider increasing the size or scope of educational programs directed to geriatric professionals such as geriatric physician specialists, geriatric nurse practitioners, social workers and others;
5. Conduct a system-wide review of JPS health care to assess for elderly care issues that can encourage access to care and quality of life. This review should include a special focus on ambulatory facilities in communities with high proportion of elderly residents;
6. Work with nursing and other professions to increase skills and capabilities in providing for smooth transitions of care (i.e. from hospital to home, assisted living to hospital, hospital to nursing facility, etc.);
7. Increase system focus on obtaining Advance Directives from JPS patients;
8. Create a task force to review and advise JPS and Tarrant County periodically on issues of the care of the elderly and health system accommodation; and
9. Integrate geriatric care across all areas.

Cancer Care

Nationally, more cancer patients are surviving and living longer with advancements in cancer care. More hospitals are creating new cancer centers that have coordinated care with multispecialty teams of care (primary care, specialty care, pharmacy, cancer rehabilitation services). Cancer care is moving from the inpatient setting to patient-centered outpatient centers. With advancements in genetic targeted therapies, treatment plans are becoming more personalized. As reported earlier, there will be increasing shortages of specialty care providers to provide specialized cancer care.

As the Tarrant County population grows and ages, there will be increasing needs for cancer care services. The CHNA indicated greater need for cancer screening prevention with Tarrant County reporting lower than state and national rates for breast and cervical cancer screening. Colorectal screening although higher than national rates, was lower than state rates. Tarrant County currently provides cancer care for low and uninsured patients through the following resources: (1) Tarrant County Indigent Care Program, (2) FQHCs, (3) JPS Connection, (4) UTSW Moncrief Cancer Center, (5) Veterans Medical Center, (6) Breast and Cervical Cancer Services (BCCS) Program and (7) Bridge Breast Center.

JPS will continue to be responsible for the care of the safety-net population of Tarrant County and is well-positioned to be a major provider of future cancer care needs for this population. The cancer center is recognized for providing quality cancer care and is an Accredited Cancer Care Center with diagnostic and pharmacy services. The cancer center provides infusion and radiation treatment services in a kind and caring environment. Multidisciplinary teams (Hope Team) located in the center provide comprehensive cancer care. Representatives from the Cancer Society and Moncrief Cancer Center are located within the cancer center to provide additional healthcare and social needs.

The future needs of the JPS population will outgrow the current facility. JPS will need to consider expanding the current site, building additional cancer services in the community and developing new partnerships with Moncrief Cancer Center and others to provide additional cancer needs for the safety net population.

Additional recommendations include:

- Continue to build robust care coordination and management programs that extend across continuum of care and services that include transitions of care, post-cancer care and end-of-life care.
- Educate communities of cancer prevention services and importance of screening.
- Partner with community and public health programs to provide education and cancer screening.
- Continue to use electronic health record (EPIC) to track and monitor cancer screening and care and expand sharing of information throughout the county.

Appendix 12: Infant Mortality Rate in Tarrant County

Definitions

Infant Mortality—Death of a baby before the first birthday
Infant Mortality Rate (IMR)—Number of deaths that occurred for every 1000 live births

Facts

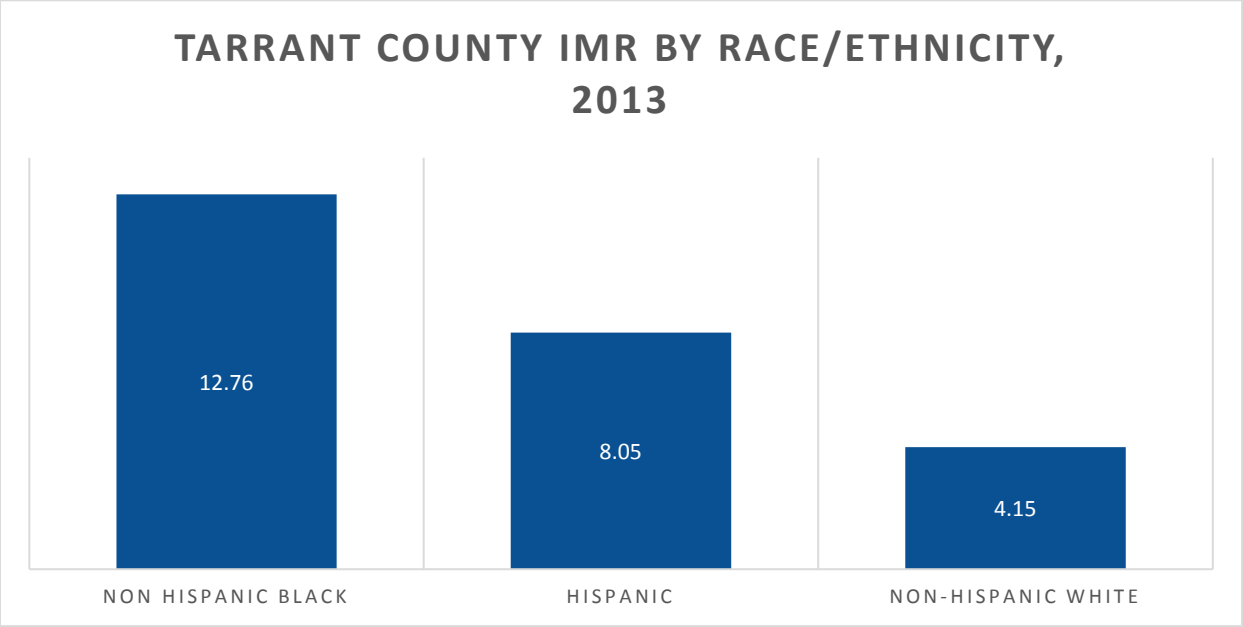
- Nationally, infant mortality rate has declined over past 30 years.[xxxix]
- Racial disparities in IMR remain.[xlxli]
    - The infant mortality rate for infants born to well-educated African American women (Non-Hispanic Black mothers with college degrees) is significantly higher than infants born to Hispanic and Non-Hispanic White women with less than a high school education (10.0 vs. 8.5 and 6.4).[xlii]
    - Babies born to African American woman are at greater risk of dying before their first birthday even when prenatal care was initiated early.
- In 2013 Tarrant County had the **highest** infant mortality rate among Texas counties with 10,000 or more live births.[xliiixliv]
- Preventable infant deaths continue.

Table 1: Infant Mortality Rates, 2013

Infant Mortality Rates			
National	**Texas**	**Tarrant County**	**Fort Worth**
5.96	5.82	7.11	8.59

Source: Tarrant County.

Table 2: Tarrant County IMR by Race/Ethnicity, 2013



Source: Tarrant County. 2013 Tarrant County Infant Mortality Summary.

Table 3: Causes of Infant Mortality

Causes of Infant Mortality	
National	**Tarrant County**
1. Preterm birth (<37 weeks gestation)	1. Preterm birth (<37 weeks gestation)
2. Maternal complications of pregnancy	2. Late entrance into prenatal care (48% of women enter pregnancy after first trimester)
3. Sudden Infant Death Syndrome	3. Sudden Infant Death Syndrome
4. Birth Defects	
5. Injuries (Suffocation)	

Source: Tarrant County. 2013 Tarrant County Infant Mortality Summary.

Tarrant County

The 2015 Tarrant County Infant Mortality Review Care Team reported maternal weight (underweight and obesity) as the largest risk factor contributing to IMR and contributed to 67% of infant deaths in 2012.

How is Tarrant County Responding to this issue?

Tarrant County has a large number of community, faith and business leaders, health organizations and government agencies committed to lowering the infant mortality rate. The County has established a Tarrant County Infant Mortality Network that receives recommendations from the Tarrant County Infant Mortality Review Care Team. Current recommendations include (1) providing education and training to hospital chaplains, (2) promoting safe sleep programs in the community, and (3) reproductive life programs for women and men.

Other county programs working to combat infant mortality include:

- **One Key Question** – This is a grant that Tarrant County Public Health received from the State of Texas to implement a systems change addressing infant mortality. JPS is working with the Health Centers for Women and the providers to implement 'One Key Question', asking all women of child bearing age at their well women exam if they are planning to expand their family in the next year. Depending on the response, the provider will have additional items to discuss and the appropriate patient education will be pulled into their after visit summary.[xlv]
- **Healthy Texas Women** – Grant from the State of Texas to provide coverage for women 15-44.[xlvi]
- **Safe Infant Sleep Initiative** – This initiative is led by Cook Children's Center for the Prevention of Child Maltreatment and increases safe sleep environment awareness
- **Prenatal Education Jail Program** – This program provides prenatal education to pregnant inmates at the Tarrant County Jail and provides hand-off of care once pregnant mothers are released.
- **JPS DSRIP projects** – These projects include initiatives focused on breastfeeding, Centering Pregnancy and Preconception/Inter-conception.
- **Healthy Start and March of Dimes** – JPS partners with both programs.

Areas of Risk and Interventions

Below are identified areas of risk for infant mortality and some evidence-based programs that are being used to address infant mortality.

Social

1. Socio-economic Disparities
   - ❑ Home visiting services (depression, domestic violence, substance abuse, mental health)
   - ❑ Connect communities with housing, transportation, education and job resources
2. Maternal Health/Prematurity
   - ❑ Preconception health programs- peer education
   - ❑ Identify high risk neighborhoods and provide enhanced care management services for both pregnant and non-pregnant women to improve health status and future birth outcomes
   - ❑ Use community health workers who live in the neighborhoods to assist with outreach and help connect pregnant women to health care and other community resources
3. Maternal Care
   - ❑ Centering Pregnancy- evidence based health care delivery model that integrates maternal health care assessment, education and support.
   - ❑ Reduce unnecessary scheduled early deliveries (36-39 weeks gestation)
   - ❑ Improve the administration of Progesterone (17P) to women at risk for preterm babies.
   - ❑ Smoking cessation programs
4. Newborn Care
   - ❑ Improved discharge planning from neonatal intensive care
   - ❑ Identification of high risk babies for care management
5. Infant/Child Health
   - ❑ Infant Safe Sleep Education
     - o Set up model nursery in hospital that demonstrates home safety
   - ❑ Breastfeeding – Lactation consultants
   - ❑ Immunizations
   - ❑ Home visiting programs to assure safe environment
   - ❑ Injury prevention education

Recommendations

1. Develop and enhance partnerships and population health programs in Tarrant County to address social and health disparities of high risk populations.
2. Identify perinatal regions that develop population specific programs around infant mortality.
3. Improve integrations between the many county IMR programs and initiatives.

4. Develop common goals and metrics between public health, community organizations and primary care to improve IMR.
5. Work to reduce racial and economic inequities and health disparities by developing policies to reduce poverty, improve access to housing, employment and healthcare services.

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[i] Data Resource Center for Child & Adolescent Health. 2012.

[ii] Ibid.

[iii] Ibid.

[iv] Fetal Infant Mortality Review. Tarrant County. 2008-2012.

[v] Substance Abuse and Mental Health Services Administration, Results from the 2011 National Survey on Drug Use and Health: Mental Health Findings, *NSDUH Series H-45, HHS Publication No*. (SMA) 12-4725. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2012.

[vi] Wang PS, Lane M, Olfson M, Pincus HA, Wells KB, Kessler RC: Twelve-month use of mental health services in the United States: results from the national comorbidity survey replication. *Archives of General Psychiatry.* 2005;62(6):629-640.

[vii] Wang PS, Demler O, Kessler RC: Adequacy of treatment for serious mental illness in the United States." *American Journal of Public Health.* 2002;92(1):92-98.

[viii] Melek S, Norris D, Paulus J: Economic impact of integrated medical-behavioral health: implications for psychiatry, Milliman *American Psychiatric Association Report,* Feb 2013.

[ix] Hogg Foundation for Mental Health. (November 2016). A guide to understanding mental health systems and services in Texas. Retrieved from www.hogg.utexas.edu

[x] Hogg Foundation for Mental Health. (November 2016). A guide to understanding mental health systems and services in Texas. Retrieved from www.hogg.utexas.edu

[xi] Hogg Foundation for Mental Health. (November 2016). A guide to understanding mental health systems and services in Texas. Retrieved from www.hogg.utexas.edu

[xii] Hogg Foundation for Mental Health. (November 2016). A guide to understanding mental health systems and services in Texas. Retrieved from www.hogg.utexas.edu

[xiii] JPS Department of Psychiatry. (2017). JPS Behavioral Health Quality Overview

[xiv] JPS Health Network. (2017). DSRIP Project Snapshot

[xv] Torrey F, Entsminger K, Geller J, Stanley J, Jaffe DJ: The Shortage of Public Hospital Beds for the Mentally Ill, Treatment Advocacy Center (TAC) white paper, 2008

[xvi] Interview with Torrey Fuller MD, Treatment Advocacy Center – 12/16/2016

[xvii] Interview Dan Sewell, MD, President of the American Association of Geriatric Psychiatry – 12/20/2016

[xviii] Interview Gregory Fritz, MD, President American Association of Child and Adolescent Psychiatry - 12/22/2016

[xix] Bastiampillai T, Sharfstein SS, Allison S. Increase in US Suicide Rates and the Critical Decline in Psychiatric Beds. JAMA. 2016;316(24):2591-2592. doi:10.1001/jama.2016.16989

[xx] Torrey, E. F., Fuller, D. A., Geller, J., Jacobs, C., & Ragosta, K. (2012). No room at the inn: Trends and consequences of closing public psychiatric hospitals. Arlington, VA: Treatment Advocacy Center.

[xxi] Texas Health and Human Services Commission. [Online]. https://www.dshs.texas.gov/mhsa/SB1507/SB-1507.aspx

[xxii] Texas Health and Human Services Commission. [Online]. http://www.dshs.texas.gov/legislative/2015/Rider83-state-hospital-long-term-plan.pdf

[xxiii] Texas Department of State Health Services Regulatory Services, Health Facility Information Report 12/20/16

[xxiv] Addressing the Needs of Older Adults in Tarrant County. The Center for Health Development. Texas A&M Health Sciences Center School of Rural Public Health. May, 2009

[xxv] Eldercare Workforce Alliance. www.eldercareworkfroce.org/research/issue-briefs/

[xxvi] Chronic Conditions: Making the Case for Ongoing Care. February 2010. Robert Wood Johnson Foundation

[xxvii] Alzheimers Association. Alzheimers Disease Facts and Figures. 2010

[xxviii] IOM report. Retooling for an Aging America: Building the Health Care Workforce

[xxix] Alzheimers Association. Alzheimers Disease Facts and Figures 2010

[xxx] Addressing the Needs of Older Adults in Tarrant County. ibid

[xxxi] PHI Fact Sheet: Who are Direct Care Workers. [Online]. DirectCareClearingHouse.org

[xxxii] American Geriatric Society. Projected Need for Geriatricians. 2009.

[xxxiii] CSWE. Why Recruit Students to Gerontological Social Work.

[xxxiv] American Nursing Association. [Online]. www.nursingworld.org/nursingshortage.

[xxxv] American Physical Therapy Association Research Department. 2010 Practice Profile Survey

[xxxvi] American Psychological Association. [Online] www.apa,org/pi/aging

[xxxvii] American Association of Geriatric Psychiatrists. [Online] www.aagpga.org/advocacy/agenda

[xxxviii] Addressing the Needs of Older Adults in Tarrant County. Ibid
[xxxix] MacDorman M.F., Mathews T.J. NCHS Data Brief: Recent Trends in Infant Mortality in the United States. April 2017. [Online]. http://www.cdc.gov/nchs/data/databriefs/db09.htm.
[xl] 2015 Annual Report. America's Health Rankings. United Health Foundation. April 2017. [Online]. http://www.americashealthrankings.org/explore/2015-annual-report/measure/IMR/state/ALL.
[xli] MacDorman MF, Mathews TJ. Understanding racial and ethnic disparities in US infant mortality rates. NCHS data brief no. 74. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2011. [Online]. https://www.cdc.gov/nchs/data/databriefs/db74.pdf.
[xlii] Moerbe, Micky M. Tarrant County Public Health. Tarrant County Infant Mortality: Data to Action. Sept. 2016. [Online]. http://www.tarrantfatherhood.org/uploads/2/0/5/0/20505242/2016.09.16_mmoerbe_im_in_tc_data_to_action_ih_summit.pdf.
[xliii] Tarrant County. Tarrant County Infant Mortality 2013. April 2017. [Online]. http://access.tarrantcounty.com/content/dam/main/public-health/PH%20DOCUMENTS/Epi/Infant%20Mortality%20Reports/2013_TC_IM_Summary_Updated.pdf.
[xliv] Tarrant County. 2013 Tarrant County Infant Mortality Summary. April 2017. [Online]. http://access.tarrantcounty.com/en/public-health/epidemiology-and-health-information/health-data-and-information/infant-mortality/infant-mortality-reports---summaries.html and http://access.tarrantcounty.com/content/dam/main/public-health/PH%20DOCUMENTS/Epi/Infant%20Mortality%20Reports/2013_TC_IM_Summary_Updated.pdf.
[xlv] Oregon Foundation for Reproductive Health. One Key Question. April 2017. [Online]. http://www.onekeyquestion.org/.
[xlvi] Texas Health and Human Services Commission. Healthy Texas Women. April 2017. [Online]. https://www.healthytexaswomen.org/.