Pilot Study on Access to Care in the Spanish Universal Healthcare System: Gynecology and Cardiology Appointments and Hospitalizations in the Canary Islands

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ABSTRACT

In this paper, we examine characteristics of the Spanish universal healthcare system through data obtained from the Hospital Universitario Nuestra Señora de Candelaria (HUNSC), a public hospital on the Spanish island of Tenerife. We were interested in whether or not the regionalized structure of the Spanish national health care system of 2014 is able to provide timely and affordable access to care for its citizens. The dataset in this study was focused on affordable access to and efficient provision of cardiology and OB/GYN care at the HUNSC on Tenerife. Appointment and hospital admissions data for the month of March 2014 were obtained. Data consisted of Cardiology and Obstetrics/Gynecology (OB/GYN) services as indicated by hospitalization and appointment records. The data fields included home postal codes, wait time in days for medical appointments, reason for hospitalization or consultation, length of time hospitalized, and— for cardiology— discharge status. Records were further analyzed using home postal codes to determine average driving distance and time traveled. The average driving distance and time traveled for cardiology appointments and hospitalizations and for gynecology hospitalizations was approximately 40 kilometers and 40 minutes. Patients who scheduled gynecology specialty appointments traveled an average distance of 49.7 kilometers and 64.5 minutes. Twenty-five percent (25%) of all patient appointments were scheduled within 14 days and 50% occurred within one month. The question of affordable access could not be determined from the data; however, an author's (LC) observation and indirect assessment indicated that Spain's universal healthcare system is affordable. A descriptive analysis of the data as well as personal observations indicate that patients are receiving timely and affordable access to specialty care in these services, as intended.

BACKGROUND

Under the Spanish Constitution of 1978, all citizens were provided the right to health protection; the Spanish government then began the task of creating a universal healthcare system to provide free and equal access to both preventive and curative medicine, as well as rehabilitation services. A newly created Spanish National Institute of Health provided the managerial role in organization of the new national healthcare system.[1] From 1978 to 1986, an important shift occurred from the previous system of primarily private insurance providers and hospitals to a network of national public hospitals supported by taxes. In 1981,

seventeen autonomous sub-national organizational regions ("communities") were created across Spain to decentralize the healthcare services. Each autonomous region were further organized into Health Areas and Basic Health Zones based on demographic, cultural, and epidemiologic factors as well as other criteria. This arrangement was intended to better provide local healthcare services to citizens throughout large regions. On average, each Health Area serves 200,000 to 250,000 people and contains at least one central hospital. This is further divided into Basic Health Zones, each of which serves 5,000 to 25,000 people. Basic Health Zones are intended to deliver primary care services at the local level; the goal being to have a primary care center located within fifteen minutes of any residence. Since establishment of the General Health Services Act in 1986, patients have been free to choose a doctor within their local Health Area.[1]

The General Health Services Act of 1986 created the present National Health System, which defined the range of services required to be publicly funded, providing preventive, curative, and rehabilitative health services for each autonomous region.[1, 2] Spain's national healthcare system is binomial, comprised of both primary care centers and specialty clinics and hospitals. Individuals are strongly encouraged to consult a primary care physician about any new health issue. A primary care team may comprise general practitioners, pediatricians, nurses, and administrative staff, as well as social workers, midwives, and physical therapists. The goal is to provide general medical care with 24-hour accessibility for diagnostic services, minor surgeries, family planning, prenatal and obstetric care, health promotion, and other healthcare services. Specialists are seen through primary referral or emergency care, and in some cases, self-referral.[1] Although delivery of care is free, there often is a co-pay of 40% for pharmaceuticals prescribed to outpatients under the age of 65.[3]

Although Spanish healthcare is universal and is provided for each citizen by the government, a parallel system of private insurers and hospitals remains. Approximately one in six citizens holds private health insurance, which provides additional benefits not covered by the National Health System such as dental care, pharmaceutical coverage, and more direct and quicker access to physicians. The distribution and accessibility of private hospitals varies by region. Many private hospitals also participate in government contracts and provide additional or surge capacity for the public health system – e.g., beds for patients under the care of the public sector.[1,4]

From 2000 to 2011, Spain's average annual growth rate per capita in health expenditure was slightly negative – approximately -0.5%. In 2007, the country spent $2,671 per person on healthcare, or 8.5% of the GDP. After an increase in 2009 at nearly 11% of the GDP, the 2011 spending dropped to approximately $3,000 per person, or 9.3% of GDP. In 2011, outpatient care accounted for 38% of funding, followed by inpatient care (26%), medical goods (21%), long-term care (11%), and collective services (5%).[1,5]

The Canary Islands are designated as one of the seventeen autonomous communities; they consist of seven large islands and six smaller islands, with a total of 2.1 million inhabitants. The population is concentrated on two large islands – Tenerife and Gran Canaria.[3] On the island of Tenerife, HUNSC serves as a main hospital within a previously defined Health Area. The hospital is surrounded by primary care facilities in the Basic Health Zones that make up the defined Health Area. Inside this Health Area there also are various small (private sector) hospitals holding government public contracts; these are frequently used to discharge the less severe inpatients from the main HUNSC. The hospital is located close to a second large public hospital (approximately 2 miles and 8 minutes by public tram), which serves the neighboring Health Area.

HYPOTHESIS AND STUDY DESIGN

We hypothesize that the regionalized structure of the Spanish national health care system of 2014 is able to provide timely and affordable access to specialty and emergency care for the majority of its citizens within an acceptable distance from their homes. As of 2014, no data had yet been compiled regarding waiting periods for specialty care appointments and hospital admissions at HUNSC. Because the HUNSC is a specialty hospital and referral center, rather than a primary care facility, the "15-minutes requirement" for primary care access does not apply, and no equivalent metric had been established. In this pilot study we examined access to and efficient provision of two categories of specialty care – cardiology and OB/GYN services at HUNSC on Tenerife.

METHODS

Institutional Research Board (IRB) exemption

An IRB exemption was received from both Auburn University and HUNSC prior to initiation of data collection. Only aggregate hospital admissions data were accessed for this project, and no questionnaire was used during the data collection; thus no direct interaction with human subjects was required.

Data

Only descriptive data analysis was performed on this pilot study. A subset of appointment and hospital admissions data (for gynecology and cardiology appointments) included all hospitalizations and medical appointments at HUNSC for the month of March 2014. Data elements included type of clinical service (referral appointment versus emergency services), home postal code (in order to determine distance traveled), date of appointment request, date of appointment or admission, and either the presenting complaint (appointments) or the diagnosis (emergency admissions). No personal patient identification

fields (name, age, gender, address) were part of this data set. For appointment data, emergent cases were given a negative or zero wait time because these cases represented unexpected patients that were worked into the schedule on the same day; electronically they were processed differently from routine appointments by the administrative personnel. Because these data points could not provide accurate information and served to skew the data set, they were removed from the admissions appointment dataset. There were 490 such cases within the unprocessed OB/GYN appointment data and 25 cases within the cardiology appointment data.

Downloaded OB/GYN and cardiology data were sorted using Epi InfoTM (release version 3.5.4, Centers for Disease Control and Prevention), then entered and stored using Excel (release version 14.42, Microsoft office). Data within each specialty were sorted by distance and time travelled, reason for visit, and appointment wait time. Cardiology and OB/GYN data included hospitalization and appointment records. Average driving distance was calculated using home and HUNSC postal codes, and time traveled was determined. The averages then were weighted to better reflect the frequency of patients coming from each postal code area. Distance traveled and time required to complete the one-way trip were determined using the Distance Calculator at the website http://www.distancecalculator.globefeed.com.

RESULTS

Appointment Data

I. Cardiology Appointments

Data were analyzed for 225 cardiology appointments during the month of March 2014 (Figure 1). Approximately 25% of patients were seen within 14 days of scheduling an appointment, and 50% were seen within 33 days. The average distance traveled was 24.2 kilometers with an average travel time of 27.5 minutes. Diagnostic and therapeutic indications for cardiology appointments included: heart failure (31.1%), general cardiology evaluation (26.2%), congenital heart disorders (20.9%), and arrhythmias (20.0%).
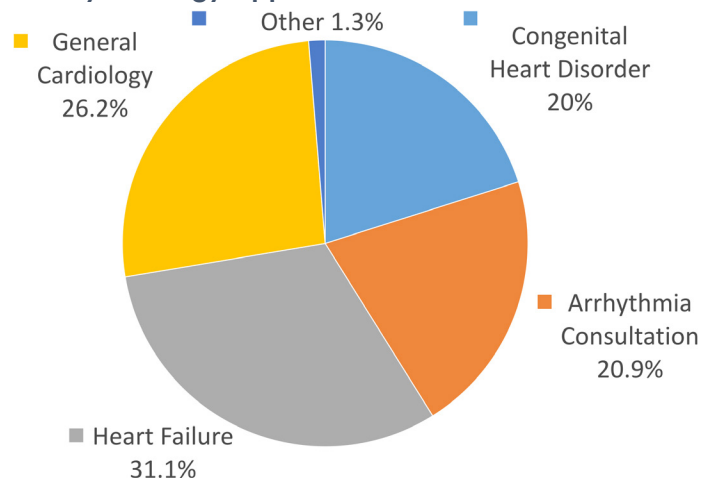
II. Gynecology Appointments

Figure 1: Reasons for Cardiology Consulations

During March 2014, there were 1,995 gynecology patient appointments (Figure 2). Gynecology consultations contained a large number of categories (Figure 3). The most common OB/GYN procedure was for ultrasound examination (28.0% of visits), followed by evaluation of fetal pathology (11.9%), other obstetrical pathology (11.1%), and oncology cases (7.4%). Approximately 25% of patients were seen within 14 days of scheduling an appointment, and 50% within 32 days. The average distance traveled for OB/GYN appointments was calculated as 49.7 kilometers and 64.5 minutes (approximately twice the distance and time compared to cardiology appointments).
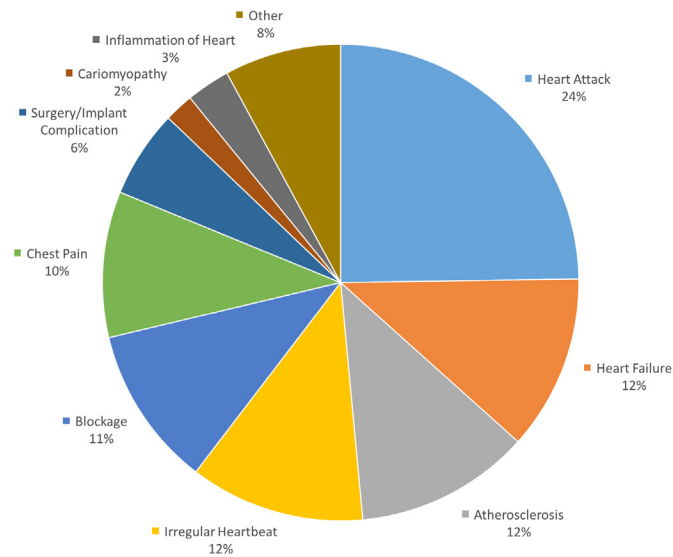

Figure 2: Reasons for Cardiology Hospitalization

Hospitalization Data

I. Cardiology Hospitalizations

Data was obtained for 250 cardiology patients hospitalized during March 2014 (Figure 3). Data included postal code of residence, reason for hospitalization, time (days) of hospitalization, and ultimate destination of the patient, including discharge, hospital transfer, and death. The average distance traveled was 31.4 kilometers with an average travel time of approximately 38 minutes.
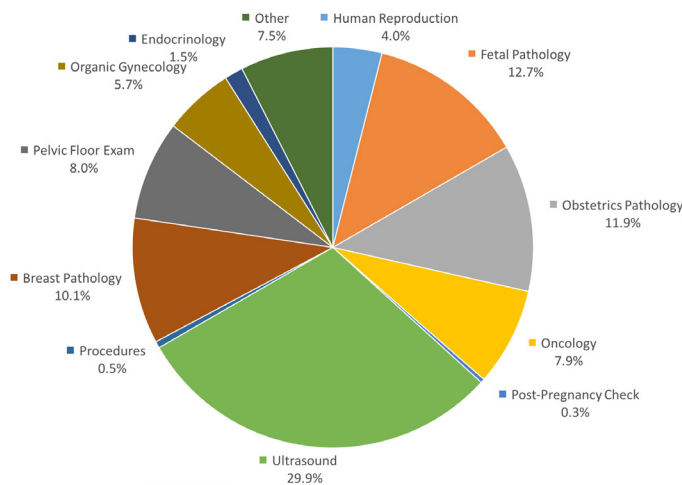

Figure 3: Reasons for Gynecology Consultations

Reasons for emergent cardiac hospitalizations (Figure 3) included heart attack (25%), followed by atherosclerosis (12%), heart failure (12%), and irregular heartbeat (12%). Over 50% of hospitalizations were five days or less, and most cases (80%) were hospitalized less than eight days. Approximately 90% of cardiac patients were ultimately discharged, and 8% were transferred to another hospital; only 2% resulted in patient death.

II. Gynecology Hospitalizations

Data was collected for 373 gynecology appointments and hospitalizations during March 2014 (Figure 4). Data included postal code of residence, reason for appointment or hospitalization, and duration in days of hospitalization events.

Forty percent (40%) of OB/GYN hospitalizations were for deliveries (births), followed by pregnancy complications (29%) and cancers (10%) (Figure 5). Almost 50% of hospitalizations lasted 0-2 days; 95% of cases resolved ≤ eight days. The average distance traveled was 35.1 kilometers, with an average time of approximately 35 minutes. For patient discharge status, approximately 2% elected to leave the hospital prior to medical release and 98% were discharged.
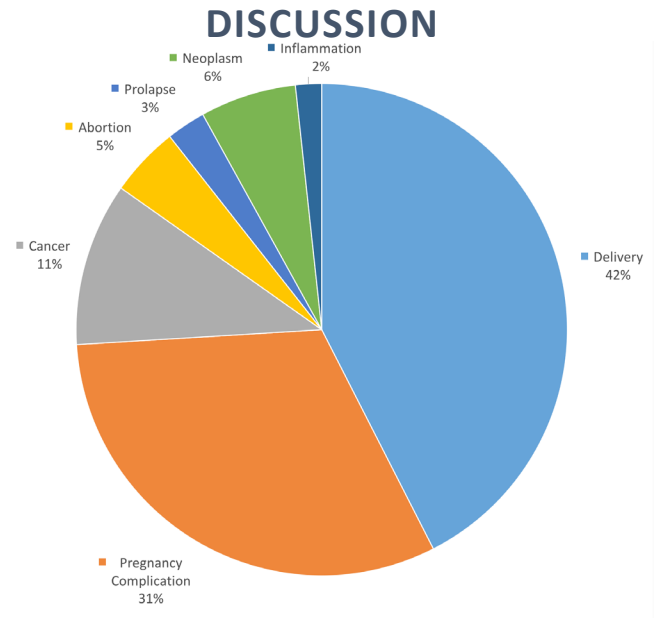
DISCUSSION

Figure 4: Reasons for Gynecology Hospitalization

Spanish healthcare system hospitals serve as referral centers for specialty consultations, surgeries, and emergencies. Patients receive timely primary care services at their local health care facility located within their Basic Health Zone. Because routine care is mostly provided at primary care facilities, HUNSC appointments are for specialty care rather than routine examinations. At HUNSC on the Spanish Canary Island of Tenerife, the average driving distance and time for these two types of specialty care was approximately 40 kilometers and 40 minutes. Patients with gynecology specialty appointments traveled further — 49.7 kilometers and 64.5 minutes. In terms of timeliness, approximately 25% of all patient specialty appointments were scheduled within 14 days and 50% within a month. These wait times do not indicate any lack of access to either primary or emergency care because during the appointment wait time, patients continue to receive care from their primary care doctor

closer to home and have similar access to emergency services. Thus, the seemingly extensive travel distance and time for specialty gynecological appointments does not imply a lack of access to care, but rather substantiates the extent to which local primary care facilities serve as the primary providers of timely and adequate general care.

Primary care facilities also provide prenatal care and classes rather than having the woman travel to the hospital for each check-up. Further, because gynecology is a commonly needed specialty for women, general gynecological care may be provided at public ambulatory clinics. This would explain the larger travel distance and travel time calculated for specialty gynecology appointments and hospitalizations, as women would need to travel further only when specialty care or facilities were required. Of the 373 hospitalized gynecology patients, ~98% were discharged routinely, ~ 2% left voluntarily before medical, and none died.

In contrast, cardiology serves a different patient population with different outcomes. Patients may need to drive farther to seek specialty diagnostic and medical care, explaining the greater travel distance and time for cardiology appointments. Also, life-threatening emergency events requiring advanced medical and surgical support are more frequently encountered. Of the 250 hospitalized cardiology patients within the data set, 90% were discharged, 8% were transferred, and 2% died. The reasons for transfer may include a closer proximity to home or additional required specialty care at another hospital.

Hospitalization travel times for gynecology and cardiology may be slightly skewed and difficult to compare because there were no data on how each patient arrived at the hospital. Actual average travel time may be less for patients arriving by ambulance or other emergency transportation. Patients from neighboring islands may be transferred by medical helicopter rather than taking a ferry or boat, thus decreasing the travel time for the same distance.

How does this compare with the United States? Based on a 2014 U.S. survey of physician appointment wait times, the average appointment wait time to see a cardiologist in the United States was 16.8 days, while the average time to see a gynecologist was 17.3 days 6. This provides a reasonable comparison point between the universal healthcare system in Spain and the United States private healthcare system, suggesting that the average wait time in the Spanish healthcare system may be a few days shorter than in the United States.

This pilot study provides a template that can be used for future studies. Future work could include analysis of the complete dataset for 2014 specialty appointment and hospital admissions data in the Canary Islands to determine whether this limited dataset is truly representative. Not only the OB/GYN and cardiology services, but data for other clinical specialties – as well as average travel time to primary care— should be compared across the 17 autonomous Regions in Spain. Comparing data from Tenerife with specialty appointment and hospitals admission throughout the other 16 autonomous healthcare Regions in Spain would provide further insight into whether Tenerife is an outlier in terms of access to healthcare services or if such distances and percentages hold true throughout the country. It is likely that regional differences in geography and population density across the healthcare Regions would affect proximity and timeliness of access to primary care. Further research into the Spanish healthcare system could include a count of gynecology ambulatory centers, number of total births versus percent of babies born in hospitals, number of primary care centers throughout the island, and a comparison to the statistics of the other two hospitals on the island.

Of interest also would be a parallel study comparing the Spanish data to that of a local American hospital and state of comparable size to provide critical insight between the differing healthcare systems. These studies could include a comparison of travel distances and times, reasons for appointments/hospitalizations, and average hospitalization duration. Further investigation of cardiology discharge status statistics could be compared to those for the United States and other countries to suggest quality and success of care for various cardiac hospitalizations. The final step would be to compare and contrast the Spanish universal healthcare system with several other universal healthcare systems across the globe.

CONCLUSION

In Spain, the General Health Services Act of 1986 provides the framework for a national public healthcare system for all citizens. The results of this study suggest that, in addition to being able to access primary care (including OB/GYN services), patients receive specialty care appointments at referral centers within an appropriate time frame based on the urgency of their medical conditions. Patients are able to access advanced care facilities on an urgent basis, and have a high rate of discharge when hospitalized for cardiac and OB/GYN conditions. Objective data analysis and broad conclusions concerning access to timely and affordable care within the Spanish universal healthcare system are beyond the scope of our dataset; however, our observations and limited indirect assessment indicated that Spain's universal healthcare system appears to be affordable as well as generally accessible in the Canary Islands, fulfilling the promises of the 1978 Spanish Constitution.

ACKNOWLEDGMENTS

REFERENCES

1. Borkan, J., Eaton, C. B., Novillo-Ortiz, D., Corte, P. R., & Jadad, A. R. (2010). Renewing primary care: lessons learned from the Spanish health care system. *Health Affairs, 29*(8), 1432-1441.

2. Reverte-Cejudo, D., & Sánchez-Bayle, M. (1999). Devolving health services to Spain's autonomous regions. *British Medical Journal, 318*(7192), 1204-1205.

3. Curvo, S. D. (2013). Reduction of health inequalities in Tenerife, Canary Islands, by means of health promotion.

4. Lopez-Casasnovas, G., Costa-Font, J., Planas, I. (2005). Diversity and regional inequalities in the Spanish 'system of health care'. *Health Economics. 14*(S1), S221-S235.

5. OECD. (2013), *Health at a Glance 2013: OECD Indicators.* Retrieved from http://dx.doi.org/10.1787/health_glance-2013-en

6. Merritt Hawkins. (2014), *2014 Survey: Physician Appointment Wait Times and Medicaid and Medicare Acceptance Rates.* Retrieved from http://www.merritthawkins.com