HexaGroup

Marketing Performance. Period.

Case Study

St. Luke's Episcopal Health Charities

Through interactive design and application development, HexaGroup helped St. Luke's Episcopal Health Charities address health needs in underserved areas.

Background

The St. Luke's Episcopal Health Charities' interactive mapping tool was first launched in 1998. Originally called the Community Health Information System (CHIS), its overarching goal was to provide researchers, residents and organizations access to health related data reflecting the overall health and well being of their communities within the Greater Houston Area. The original interface was ambitious and effectively connected a wide audience with information vital to developing action plans to address identified health needs in underserved areas and then monitor the results of their actions.

In March 2011, the Charities launched the next generation of its cutting-edge public health informatics tool. Built by HexaGroup, the latest incarnation is a one-of-a-kind comprehensive Web-based interactive geo-spatial database of clinic information, vital statistics, and disease incidence and mortality data for the Greater Houston Area. Covering the entire 57-county area of the Episcopal Diocese of Texas, the latest CHIS also features a service navigator interface, which provides faster connection between non-profit service providers and the underserved population of the target area.

Objectives & Challenges

The Charities had an ambitious list of goals for the new mapping interface when they began discussing the next implementation with HexaGroup's technology team. The overarching objective was improved access for all of their target populations: Researchers had to get the "meat and potatoes" of what they were looking for in succinct reports that could be easily downloaded and used in their analysis; people searching for health services had to easily find what they were looking for; professional health navigators needed to efficiently connect patients to services. And, everyone needed access to it a variety of browsers including MS Internet Explorer, Mozilla Firefox, Apple Safari, and Google Chrome.

2013 Communicators Awards

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https://goo.gl/utpC4V

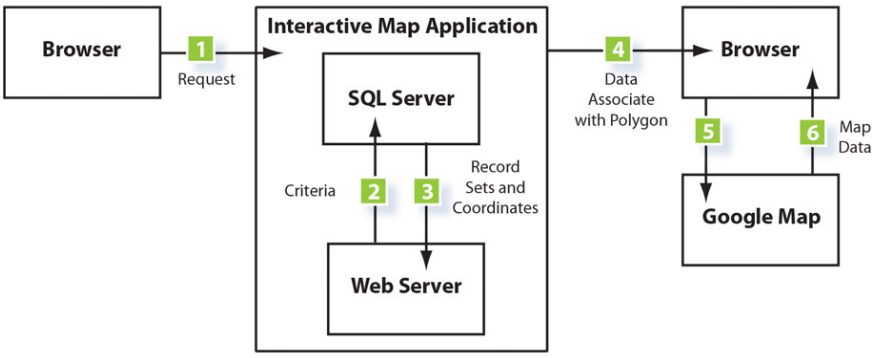
See the Research Informed Grant Making and Breast Cancer Video:

https://goo.gl/KDvUrm

The mapping interface required rethinking. The original design of the mapping tool assumed all users would be best served via a mapping interface for both the collection of data as well as the identification of suitable clinics for patients seeking services. The portal worked well for PC-based researchers using MS Internet Explorer, but individuals seeking services had more trouble. Barriers to health services are often the same barriers to technology and the target population had limited access to computers unless through their local library. Professional health navigators were the connecting point between patients and clinics, but the mapping portal limited their search and they very quickly developed "back door" methods to access clinic lists that they would then print and mail to the patients.

The back-end of the application also needed to be streamlined so that each clinic's information could be regularly updated easily and efficiently with few glitches. And the original multiple databases housing all of the data needed to be analyzed and synthesized into a single database flexible enough to expand for future data types. The term "prodigious undertaking" doesn't begin to describe the complexity of the task laid before the team!

Solution



HexaGroup's custom technology team developed the latest version of the System using Google Mapping for a variety of reasons. Compatibility was a real driver: No third party implementation is necessary to install and access the map. It's a low-cost choice. The Google based solution is free, supported by SSL protocol and includes a very extensive set of APIs. It's ideal for mobile support with access on Google Android-enabled devices and Apple devices (iPhone and iPad) and there are opportunities to integrate with future Google-developed innovative tools, such as Google Public Data Explorer.

There were four core challenges for the HexaGroup technical team: Polygon loading time, data consolidation and standardization, application usability, and real-time data calculation.

Polygon loading time

There are 4404 polygons of census tracts and 2884 zip code polygons to load in the user's browser. They cannot be loaded all at once – the user experience would be unacceptable. The HexaGroup solution was to constrain loading to the given viewing area. The solution detects the coordinates of the upper left and lower right corners and then displays/calculates only those polygons within the proscribed area.

Consolidation and standardization of data

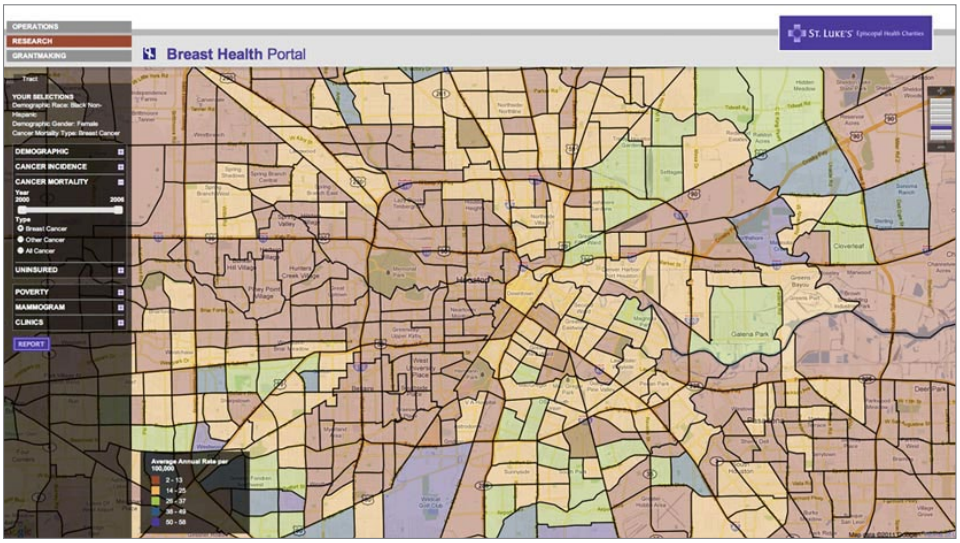
The original implementation drew information from 12 separate databases. The new version required consolidation down to a single database, which required a massive reorganization. HexaGroup database experts stored a majority of the data definition and field types in the database to allow scalability and developed a data definition and format for future data to be imported without reprogramming.

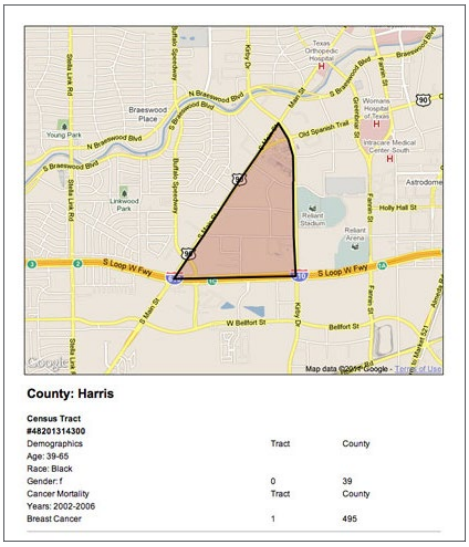
Usability, interactivity, presentation

Users expected to click on a given polygon and immediately access data, which is Windows-like behavior in a Web environment. This level of interactivity is a real trick with Web technology where interactivity is limited and users are presented with forms which are then used to produce a map, rather than the other way around. HexaGroup solved this by providing an "add to report" button on the hover state, which allows the user to add a polygon to their "cart." The team also provided a hover effect when the checkboxes are rolled over to show selected polygons and in the future will allow users to actually drag a given polygon into a basket. HexaGroup is pushing Ajax technology to its limit to improve the user experience.

On-the-fly calculations

The tracts vary widely in population density, which means comparing relative incidence rates from one to another requires a complex set of calculations. Those calculations take time, which then eats into the user experience. Calculating relative radius for identified clinics was also an issue. In the beta version, HexaGroup solved both by using the ASP.NET data caching method. The next version will have the ability to save frequently used reports to minimize the amount of calculation time used by the system. The stand-alone application will calculate all of the different permutations and save them in the database.





Results

The System is accessed via two specialized portals that filter specific categories of information, based on the particular research area: Breast Health Portal and Project Safety Net. They are accessed by researchers, policy makers, community planners, and non-profits who conduct research and develop health programs benefiting underserved populations. This technology aids underserved populations seeking healthcare services, service providers and non-profits seeking funding for expansion and researchers interested in health disparities.

The resulting interface allows researchers to query data "on-the-fly" based on predetermined criteria. Users can then dynamically generate maps and customized reports depicting demographics and disease in selected populations.

The data accessed by the application includes Census 2000, Census 2010, cancer incidence from the Texas Cancer Registry (TX Dept. of State Health Services), death data from Texas Vital Statistics, clinic locations for free and low-cost health services and mammogram capacity as reported by all agencies offering low-cost mammography screening in the study region.

The portals also feature a new navigator interface where professional health navigators can search for clinics within a proscribed radius to a given zip code depending on selected parameters. They can then select favorites and load them into a "basket" for printout, greatly reducing the amount of paper used in the process as well as the amount of excess information sent to the patient.

The portals continue to go through refinements including expansion of the navigator interface, improvements in lay-visitor experiences and changes to the database to accommodate 2010 Federal Census Data.

The positive response to the new portals has been overwhelming. HexaGroup co-presented a paper on the system at the URISA GIS in Public Health Conference.

HexaGroup also produced a video explaining how the Charities' overall strategy of Research Informed Grantmaking affects the health of its community. The video addresses the role of the portals in the Charities' strategy and looks specifically at how underserved women dealing with breast cancer in the Greater Houston Area have benefitted from the Charities' work.

Proven Methodology. Amplified Results.

At HexaGroup, performance is in our DNA. We've spent the last two decades honing a six-step marketing methodology that balances proven best practices with each client's unique objectives. Armed with in-depth knowledge of the energy, technology and professional service sectors, our team hits the ground running to achieve your KPIs.

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- Market Trends
- Digital Strategy Planning

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