Determining promising locations for Team Impact new offices

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Abstract: Our team’s client is Team Impact, a local non-profit organization that matches children with chronic illnesses with college sports teams to improve the children’s quality of life. Team Impact’s leadership team has asked us to determine promising locations for opening new offices based on four criteria: accessibility to colleges with athletic programs, accessibility to health care facilities caring for children with chronic illnesses, potential donor base, and proximity to Fortune 1000 companies’ headquarters for the purpose of attracting corporate sponsorships.

Research: We consulted Data Planet to find shapefiles for the total number of households by county to demonstrate relative sizes of potential donor bases. We downloaded complete lists of colleges and hospitals from RefUSA and cleaned the hospital data by removing all rows that did not contain the words “hospital” or “medical center” and that had disqualifying words like “surgical,” “women,” and “department.” Only entries for main campuses of colleges and universities were included in the final data set, excluding entries for junior colleges, community colleges, graduate schools, etc. Lastly, we collected data for headquarters of Fortune 1000 companies in all 50 states.

Use of ArcGIS: Maps for every state are color-coded by U.S. region; the same colors and regions are reflected in a scoring tool (from which the table to the right). The intensity of color corresponds to the concentration of total households by county. Layered on top of state shapefiles are XY data files of colleges, hospitals, and Fortune 1000 companies. Layering all of this data in a single map reveals promising clusters, both in predictable and in surprising locations.

Client Deliverables: In addition to 50 ArcGIS maps, we will deliver a scoring tool to our client for our final presentation in May. The maps and scoring tool complement each other, as the maps reveal clusters while the scoring tool illuminates differences in gross volumes among criteria. Our client has provided us with a weight for each criterion based on its importance for organizational expansion. Final scores for each state are weighted averages of criteria weights and scores, and regional scores are averages of the total scores of all the states in a region.

Results: The Mid-Atlantic has the highest regional score based on scoring tool calculations, while the South Central and West Mountain regions have the lowest. Massachusetts contributes strongly to the high regional score of New England, and Boston was a strong choice for Team Impact’s first office given the visual evidence that the area possesses the characteristics Team Impact desires. As we complete the rest of our maps and scoring tool, we will be able to identify the biggest clusters, the states with the highest individual scores, and the regions with the highest scores, all of which will factor into Team Impact’s final decision about the next locations in which to open additional offices.