Presenter Disclosures

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(1) The following personal financial relationships with commercial interests relevant to this presentation existed during the past 12 months:

NO

(2) My presentation will include discussion of "off-label" use of the following:

NO

The University of Texas School of Health Information Sciences at Houston

[Innovators in Biomedical Informatics]

Evaluation of 2-1-1 enrollment for emergency preparedness and response in the Gulf Coast Region of Texas

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Abstract

This paper discusses an informatics-facilitated program evaluation that help vulnerable people for self registration to 2-1-1 system. This is part of a large project "HealthQuilt" which is an evaluation of the Harris County catchment area using emerging Web-based technologies. Geo-informatics were used to identify need for 2-1-1 enrollment and clinics locations . Attribute and boundary data were presented by overlay those layers to see how it aligns with need to 2-1-1 registration. The results show geographically diverse distributions of 2-1-1 registrants by ZIP code in relation to collaborating clinics in greater Houston. The lessons learned may provide a valuable reference for other jurisdictions with similar needs in implementing informatics in public health preparedness for vulnerable populations.

Introduction

- Early emergency preparedness and response should be explored.
- Information for preparing for Emergency preparedness level and awareness of people need to be identified
- Lack of data for people to enroll to 2-1-1 registration system especially, vulnerable people

Purposes

- To explore where the current enrollment stands
- To identify needs populations in the Gulf Coast region of Texas and the number of clinics that are collaborators in the HealthQuilt project
- To recommend strategies for improving enrollment

Method

- Level of special needs population were evaluated
- Two type of data were collected for geographic references:
  - ***Attribute*** data included registrants , clinics, and level of special needs population and geographic boundary such as state county and zip codes.
  - ***Spatial boundary*** data were represented by zip codes and GIS software was used to map data
  - Map were exported to KML files and overlay with open web map services

Data analysis

- To identify the utilization of 2-1-1 system for recommending additional efforts for recruitment
  - to map data by geocoding
  - To show the number of registrants by zip code
  - Overlay data by different level of geographic aggregation

Results

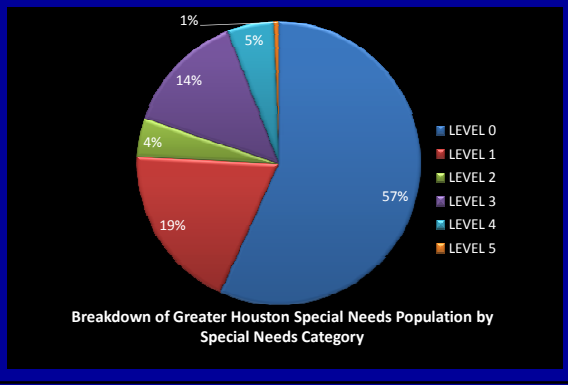
- There are 2762 people who enrolled ,Maximum =104 people in 77093 , Minimum=0

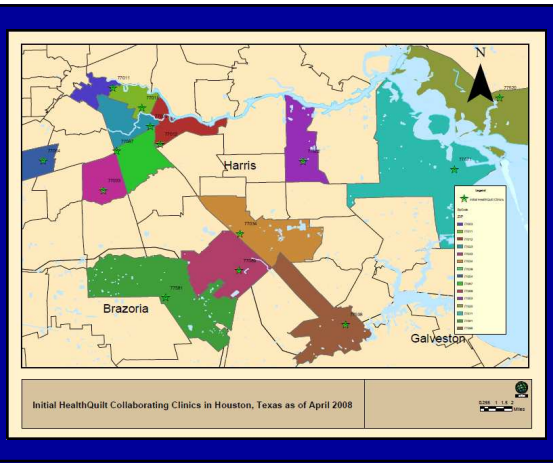
77016 (NE Houston)	104
77093(NE Houston)	98
77020 (Houston)	93
77036(SW Houston)	89
77026 (Houston)	88
77550 (Galveston)	0
77551(Galveston)	0
77554(Galveston, Jamaica Beach, Tiki Island)	0
77617(Gilchrist)	0
77623(High island)	0

Results

- There 5 level of registrants
  - Level 1 is a person dependent on others (n=318)
  - Level 2=a person who is blind, hearing impaired, deaf or amputation (n=42)
  - Level 3=a person needing assistant with medical care administrator (n=178)
  - Level 4=a person outside an institutional facility care setting (n=39)
  - Level 5=a person in institutional setting (n=9)

Results





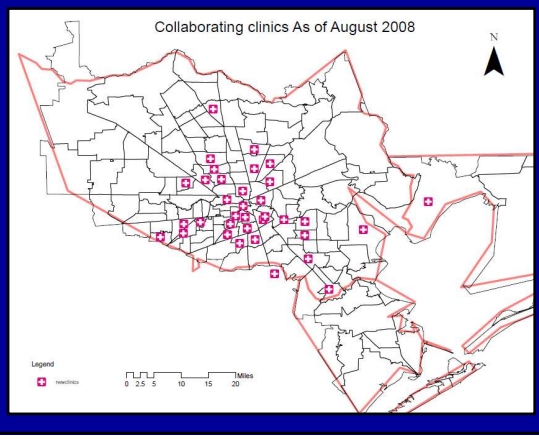
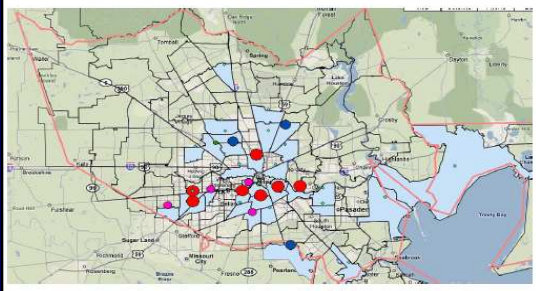


Figure 3: Number of Registrants by Clinic Location



For complete figure, please refer to http://healthquilt.healthinformaticsthai.com/maps/

Discussion and Conclusion

- The study shows the potential of web-based GIS to map the number of special needs population in Gulf Coast region of Texas .
- The results show that there are different level of population the enroll to 2-1-1 system and in some areas need to be recruited more special needs population.
- The limitation of this study is a size of map files should not be larger than 3 MB.

Future development

- Migrate data into enterprise server such as open source map server ,a complete Web Map Script package.
- Its support for display and querying of hundreds of raster, vector, and database formats and its ability to run on various operating systems

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