

Supplementary Materials

DHHS: Access

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Appendix A: Abstract

Many people face barriers that prevent or limit access to needed health and social services. These barriers often result in health disparities. Our goal was to assist the Worcester Department of Health and Human Services in investigating the feasibility of expanding the Stigma Free Worcester mobile application, a Virtual Resource directory of public health and social service resources, to the fourteen largest cities in Massachusetts. We conducted eleven interviews and comparatively analyzed ten virtual resource tools. Based on our research, we identified the core considerations for developing a larger scale Virtual Resource Tool. We used these factors to recommend three potential courses of action that Worcester DHHS could take.

Appendix B: Informed Consent Preamble

We are a group of students from Worcester Polytechnic Institute in Massachusetts. We are working with the Worcester Department of Health and Human Services on a project to investigate the feasibility of expanding a virtual resource tool: the Stigma Free Worcester mobile application, so that it reaches users in the fourteen largest cities of Massachusetts. Involvement in surveys/focus groups, etc. was completely optional and participants may withdraw from the research at any time. Individual responses will remain private and will not be shared with anyone. Feel free to contact our principal investigator Corey Dehner at cdehner@wpi.edu and our faculty advisor Gillian Smith at gmsmith@wpi.edu for any additional questions or information.

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Public Health in Cities	Donald Buglino	All
Necessity of Substance Use Treatment	Cristian Nunez	All
Mental Health	Vincent Mitala	All
Utility of a Virtual Resource	Thomas Strow and Vincent Mitala	All
Project Goal	All	All
Methodology		
Introduction	Thomas Strow	All
Analyze Stigma Free	Donald Buglino	Donald Buglino and Thomas Strow
Comparative Analysis of Similar Resource Repositories	Vincent Mitala, Cristian Nunez	Cristian Nunez and Donald Buglino
Compile Sample Data and Develop Methodological Approach for Compilation	Cristian Nunez	Cristian Nunez
Propose Virtual Resource Tool Features to	Thomas Strow and Vincent Mitala	Vincent Mitala and Thomas Strow

Stakeholders and Develop Recommendations		
Findings		
Purpose and Platform of a VRT	Donald Buglino	Donald Buglino
Approaches to Organizing Resource Directories	Thomas Strow	Thomas Strow
Compiling and Verifying Resources	Cristian Nunez	Cristian Nunez
Expansion	Vincent Mitala	All
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Option 1: Aid in Expansion of 211 Help Steps	Cristian Nunez and Thomas Strow	Donald Buglino
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Appendix E: Resource Comparison Matrix

See Attached Excel Spreadsheet: Appendix A_ Resource Comparison Matrix

Appendix F: Pros/Cons Matrix

See Attached Excel Spreadsheet: Appendix B_ Localized_Centralized Pros_Cons

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See Attached Excel Spreadsheet: Appendix C_ Facilities and Resources

Appendix H: Financial Costs Research

Cost To Publish

iOS App Store	Google Play Store	Website
\$99	\$25	\$10-\$20 per year

Facebook Advertising Costs

Per Click	Per Like	Per Download	Per Thousand Impressions
\$0.97	\$1.07	\$5.47	\$7.19

Google Advertising Costs

Google Search Network	Google Display Network
\$1.00-\$2.00 per click	Less than \$1.00 per click

Advertising on Google Vs. Bing

- Google Display Network
- Google Search Network
- Cost per Click
- Click Through Rate
- Conversion Rate
- Costs to display Ads on Bing and Comparison to Google
 - The majority of Google searches are mobile while Bing is mainly desktop searches. This makes an opportunity for long sale cycle industries.
 - Compared to Bing, Google Ads has higher averages for Click-Through Rate, Cost per Click, Conversion Rate, and Cost perAction which means advertisers

and agencies get more clicks and searches for health, wellness, and medical services.

Bing		Google	Search Network	Display Network
Avg. Click Through Rate	2.90%	Avg. Click Through Rate	3.27%	0.59%
Avg. Cost Per Click	\$1.70	Avg. Cost Per Click	\$2.62	\$0.63
Avg. Conversion Rate	2.55%	Avg. Cost Per Click	3.36%	0.82%
Avg. Cost Per Action	\$42.47	Avg. Cost Per Action	\$78.09	\$72.58

References

- <https://www.websitebuilderexpert.com/building-websites/domain-name-cost/>
- <https://www.appypie.com/faqs/how-much-does-it-cost-to-publish-an-app-on-the-app-store>
- <https://www.webfx.com/blog/marketing/much-cost-advertise-google-adwords/>
- <https://www.webfx.com/social-media/how-much-does-facebook-advertising-cost.html#:~:text=Facebook%20advertising%20costs%2C%20on%20average.%245.47%20per%20download%2C%20on%20average.>
- <https://www.wordstream.com/blog/ws/2017/11/06/bing-ads-performance-benchmarks#:~:text=The%20average%20cost%20per%20click,CPCs%20low%20in%20most%20industries.>
- <https://www.wordstream.com/blog/ws/2016/02/29/google-adwords-industry-benchmarks>

Appendix I: Sample Interview Questions

These interview questions were some of the important questions we asked to public health experts and people with experience developing public health tools.

- Are language barriers a common issue when trying to assist the homeless, or is there a protocol in place to help with this?
 - What are some ways we could better facilitate communication between people with different languages?
- About how many locations with public WiFi are in your city and are easily accessible to everyone?
 - What programs provide cell phones, computers, or access to these for the lower class and homeless populations?
- What makes the app most useful?
 - Are there any specific features?
- Are there any confusing features of the app?
 - Are there any features that don't work as they should?
 - Are there any features you would like to see added to Stigma Free Worcester?
- What information do you think would be useful in the app, example: address, phone number, services offered, hours, insurance policies?
- Would the keeping resources up to date be easier with a website
- Is the infrastructure of the app able to support the addition of such a large amount of resources?
- Do you think other cities would want to adopt the app, or each create their own.
- What features would you add if any to the app?

- How did you verify that the resources were vetted and credible?
- Is it okay if we use the survey that your group used to verify if resources are still in operation to create a similar survey
- We've thought about potential limitations of the app in terms of requiring users to have a smartphone. Do you see this as an issue, or are there existing programs in place that provide Internet access to those without smartphones or computers?
- Would you be more likely to use a virtual tool if it was an app on your phone, a website or both?
- Would you prefer if this virtual tool included resources from all 14 cities, or just Cambridge?
- What people do you think a resource like this would be most useful for in your city? Providers, patients, etc.
- What types of sorting/ search tools would be most useful for you as a provider.
- It is important for the people who use the app to have an up to date resource. Do you have the resources to maintain this type of service, if not could you acquire the resources to maintain?
- Based on your knowledge of updating and maintaining the Stigma Free application, how many people and of what level of expertise do you think would be suited to keep the proposed resource tool updated and maintained properly?
- Who uses 211 HelpSteps the most in your personal experience, Healthcare professionals/outreach workers that are referring individuals or individuals who are in need of social services. Or a combination of both?
- Have you run into any issues or roadblocks in terms of accessibility for any of these potential user populations.

- We read that you continue to manage 211 HelpSteps? Is there a team from the original development that continues to work on it? Has a new team within your organization taken that responsibility. Or is there another organization/ outside hire that is taken on this role.
- Who was responsible for the upkeep/maintenance of the tool 211 HelpSteps?
- If there were a statewide service for providing information on social services, what approach do you think would be most effective and why?
 - a. Centralized dashboard containing the lists of resources from each city.
 - b. Centralized dashboard containing the lists of resources by service offered.
 - c. Local apps/websites (decentralized) containing the list of resources from the associated city.

24. In our research, we identified a number of resources, some of which share identical information, some focused on a specific city or region, others focused on offering assistance to people facing a specific challenge, i.e. housing insecurity or substance abuse.

- a. What do you see as the benefit of having a resource as expansive as 211 Help Steps?
- b. Can you think of a situation where a localized or need-specific resource tool might be considered more useful for someone than a larger centralized tool like 211.
 - i. Can you think of a situation where a localized or need-specific resource tool might be considered more useful for someone than a larger centralized tool like 211.
 - ii. Who do you see as the primary audience for 211 help steps?
 - iii. Do you have statistics/metrics on how often 211 Help Steps usage? (e.g. how often people use it, how many unique users, etc.)