Automating Aspects of Institutional Effectiveness Assessment

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Introduction

To evaluate the Ohio University Heritage College of Osteopathic Medicine's (OU-HCOM) success in meeting its social and academic missions, the Office of Institutional Assessment and Accreditation (OIAA) in collaboration with Ohio University Information Technology Department, developed a web scraper to automate the data search and collection process from the HRSA data warehouse. The purpose of this scraper is to identify alumni who are practicing in medically underserved areas or other environs eligible for federal rural health grants.

This information is essential to determining HCOM's institutional effectiveness in meeting its social mission. It is also invaluable in competitive federal grant proposals for funding that prioritizes programs that train students, and place graduates, in federally designated underserved areas.

This tool has increased the efficiency and accuracy associated with HRSA warehouse data collection and reporting and is available to other osteopathic medical schools free of charge.

Technical Aspects

Automating tasks that traditionally required numerous manpower hours offers many advantages, including enhanced precision and accuracy. Application of computer technology to automate data collection and reporting, particularly of information core to institutional outcomes assessment, is long overdue. Furthermore, it enables labor to be redirected to more fruitful teaching, learning, and assessment elements of the academic enterprise.

The scraper is easy to use and does not require prior experience, specific knowledge or additional training. It was developed using PowerShell language and run with PowerGUI. The tool uses a prepopulated Excel file as an initial data source, and automatically "scrapes" the HRSA warehouse website for data (e.g., health professionals shortage area in primary care – "yes/no"). Using the scraper involves: 1. uploading the input data in Excel format → 2. the scraper processes each address → 3. the output is automatically recorded and saved in the same Excel file.

1. Needs/Rationale

The estimated expected shortage of primary care physicians will be between 14,900 and 35,600 by 2025 (AAMC, 2016, HRSA, 2016).

Recognizing the shortage of primary care physicians, particularly in rural areas, many of the 33 osteopathic medical schools in the U.S. have committed to closing the shortage gap and serving the underserved.

Tracking the schools' progress towards successfully meeting these goals is essential to inform ongoing manpower supply efforts.

All OCOMs Mission Statements

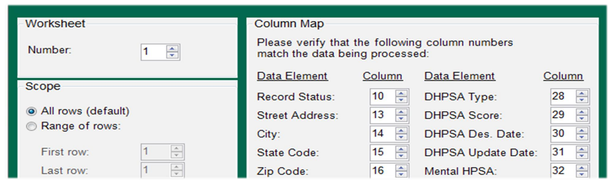
2. Benefits

- **Direct cost savings:** at the minimum wage in Ohio (e.g., $8.25) after replacing manual work: ~$275 per 1000 records. As the number of alumni increases, the cost savings increase. In 2017, the direct cost saving at OU-HCOM increased $1,500 per year
- **Time savings:** over 30 hours of manual labor per 1000 records
- **Opportunity cost:** The efforts directed at manually collecting HRSA data can be re-directed to other valuable projects
- **Improved data accuracy**
- **Improved efficiency**
- **Accommodates grant reporting needs** for agencies aimed at enhancing health access and quality in rural and/or underserved areas
- **Advanced data visualization and reporting:** HRSA data allows creation of interactive maps to visualize a D.O. school's impact in the area and the nation
- **Limitations:** The scraper requires availability of a database containing valid students'/graduates' in training/ practicing addresses (i.e., street, city, zip code, state)

3. Outcomes

HRSA WEB SCRAPER

1



INPUT **OUTPUT**

2

ID	GRAD_ YEAR	RECORD_ STATUS	STREET	CITY	STATE	ZIP_ CODE	COUNTRY	PRIMARY CARE HPSA	MUA/P
123	2015	Active	27100 Chardon Road	Euclid	OH	44143	USA	no	no
234	1980	Active	90 Jackson Pike	Gallipoli	OH	45631	USA	no	no
235	2004	Active	9500 Gilman Drive	La Jolla	CA	92093	USA	no	no
654	2001	Active	234 Goodman Street	Cincinna	OH	45219	USA	no	no
789	1999	Active	1111 6th Ave	Des Moi	IA	50314	USA	no	yes
850	2004	Active	2213 Cherry Street	Toledo	OH	43608	USA	no	yes
185	2016	Active	405 Grand Ave	Dayton	OH	45405	USA	no	yes

SUMMARY

OU-HCOM Practicing Graduates in HPSA/MUA/P in Ohio & in the U.S.

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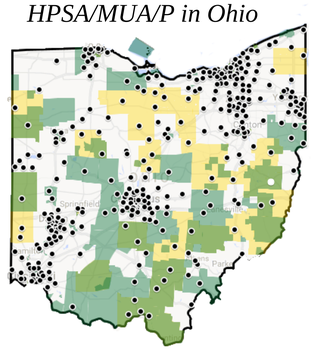
Reporting Year	2014 -2015	2015 - 2016
% Practicing in HPSA/ MUA/P in the U.S.	36%	37%
% Practicing in HPSA/ MUA/P in Ohio	28%	29%
Total Practicing Grads	2540	2642
Total Grads	3250	3386

OU-HCOM Practicing Graduates in HPSA/MUA/P in Ohio



HRSA Web Scraper Access Link

The HRSA web scrapper and detailed instructions are available for download through the following link:
https://www.ohio.edu/medicine/about/offices/assessment-and-accreditation/upload/scraper.htm

IMPORTANT NOTICE: HRSA may change the content/structure of its database without notice which may prevent the scraper from working properly. HCOM periodically tests the scraper and makes appropriate adjustments to accommodate HRSA changes/updates. HCOM does not guarantee the scraper maintenance or other scraper support to the third parties. However, please contact the first author, if you encounter difficulties with the scraper via the email below:
Contact information: Anna Holtzman, **holtzman@ohio.edu**, Medical Education Program Analyst and Evaluator, OU-HCOM Office of Assessment and Accreditation

Conclusion

The mission, vision and goals of osteopathic medical colleges in the U.S. and the national reports by HRSA & AAMC, show that service to communities, particularly those that have the greatest need, is a priority. A tool that enhances the identification of medical trainees and graduates practicing in federally designated underserved areas is invaluable, particularly to the osteopathic medical schools that excel in meeting the social mission of the medical profession. The scraper offers an automated data collection process that yields cost savings, improves efficiency and data accuracy, and advances the quality of data used to determine a college's impact on the health care needs of the region, state and the nation.

References

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