Closing the Gap on Medical Imaging Inequality:
Examining Domestic and International Program Characteristics, Goals, and Outcomes Aimed at Increasing Access to Medical Imaging

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Disclosures

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Introduction

Medical imaging inequality has become an increasingly recognized characteristic of healthcare system inequality.

- The World Health Organization estimates that over two thirds of the world does not have access to basic medical imaging.

- 80--90% of diagnostic dilemmas can be solved by basic imaging modalities, namely radiographs and ultrasound.
Introduction

Increasingly, individuals and organizations have taken the lead in addressing the large training and technological void experienced by underserved populations.

This abstract aims to consider programs working to close the gap on medical imaging inequality and draw conclusions on program design, goals, and outcomes.
Materials and Methods

An exhaustive online search through public search engines, society/non-profit organizations websites (for example the Susan G. Komen Breast Cancer foundation), and PubMed was conducted.

Identified programs were examined for organizational characteristics, goals, and reported outcomes.
Results

Domestic Programs
- Mammography
- Miscellaneous

International Programs
Figure 1. A. Distribution of free screening mammogram programs per 1 million residents by state or district. Number of programs for 2017-2018 identified = 373. 1, 2 B. Distribution of programs by regions as defined by the US census bureau.
Domestic Breast Screening Program Characteristics

Figure 2. A. Pie chart demonstrating the percentage of programs targeting underserved populations by ethnicity. B. US 2010-2015 census data on ethnic demographics of the general population

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>% of Pop</th>
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<tbody>
<tr>
<td>Black</td>
<td>12.6%</td>
</tr>
<tr>
<td>Latino</td>
<td>17.1%</td>
</tr>
<tr>
<td>Asian</td>
<td>5.1%</td>
</tr>
<tr>
<td>Other Minority</td>
<td>5.7%</td>
</tr>
<tr>
<td>White (non-Latino)</td>
<td>62.3%</td>
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</table>
Breast Screening Research

Figure 3. Number of breast screening related publications as identified through PubMed involving ‘underserved’, ‘immigrant’ and ‘minority’ populations.
Domestic Programs: Miscellaneous

• Specialty specific usage includes echocardiogram, renal ultrasound, chest radiographs, etc.
• No centralized database describing the types of free clinics available nationally
• In 2010, a study published in JAMA entitled “Free Clinics in the United States: a nationwide survey” estimates 1,007 free clinics operating in US³
  – 8.8% of respondents reported to offering ‘Radiography’ as one of their services
  – 63.4% of ‘Radiography’ services were free of charge
International Radiology Programs and Their Characteristics

Figure 4. Number of active international radiology programs/projects by year

Figure 5. Percentage of international programs/projects with the stated program goals/characteristics
International Radiology in Research

A PubMed literature search conducted for the past 10 years demonstrates no studies focused on outcomes research in terms of capacity building or professional services provided.

• 3 publications identified focused on the integration of international radiology into radiology residency curriculum
• 2 publications identified described experiences in providing professional services and capacity building in developing countries
Conclusions

• Significant interest exists for domestic programs aimed at increasing breast cancer screening rates
  – A healthy body of outcomes research is focused on under-screened populations including the socioeconomically disadvantaged and ethnic minorities.

• International radiology programs have demonstrated a steady increase since 2010 and have focused on medical education and capacity building.
  – There is overall a lack of outcomes research.
Conclusions

With increasing interest about radiologic services for underserved populations domestically and internationally:

• Radiology residency programs should consider ways of incorporating curriculum about socioeconomically disadvantaged populations

• Outcomes research for international programs should be conducted to specifically address measurable benefits of capacity building
References


