



MASTER\_LAST UPDATED 04 February 2014. Washington University School of Medicine in St. Louis Bernard Becker Medical Library.  
This work is licensed under a [Creative Commons Attribution-Noncommercial-Share Alike 3.0 United States License](https://creativecommons.org/licenses/by-nc-sa/3.0/). Questions? Cathy C. Sarli ([sarlic@wustl.edu](mailto:sarlic@wustl.edu))

## THE BECKER LIST: IMPACT INDICATORS

The Becker Medical Library Model for Assessment of Research Impact model is a list of indicators to document evidence of biomedical research impact. The indicators are organized under the following pathways:

- Advancement of Knowledge
- Clinical Implementation
- Community Benefit
- Legislation and Policy
- Economic Benefit

The list is updated on a regular basis.

Please refer to the [Assessing the Impact of Research](https://becker.wustl.edu/impact-assessment) (<https://becker.wustl.edu/impact-assessment>) website for further guidance.



<b>RESEARCH OUTPUTS AND ACTIVITIES</b>	<b>Research Outputs and Activities</b> are products and/or activities resulting from basic or clinical biomedical research.
<b>Indicators</b>	<b>Examples</b>
<b>Biological Materials</b>	Biological material identified or developed as a result of the research study.
<b>Books or Book Chapters</b>	Books or book chapters resulting from the research study.
<b>Collaborations</b>	<p>Collaborative relationships resulting from the research study. Collaborative relationships can be classified in a number of ways:</p> <ul style="list-style-type: none"><li>• Type of collaboration?<ul style="list-style-type: none"><li>○ Number of collaborations</li><li>○ Number of departments or disciplines represented</li><li>○ Number of institutions represented</li><li>○ Duration</li></ul></li><li>• Type of partner?<ul style="list-style-type: none"><li>○ Community</li><li>○ Private/Foundation</li><li>○ Industry</li><li>○ University</li><li>○ Government</li></ul></li><li>• Geographic location of the partner?<ul style="list-style-type: none"><li>○ Domestic (within the United States).</li><li>○ International (outside the United States).</li></ul></li><li>• Type of partnership?<ul style="list-style-type: none"><li>○ Multidisciplinary (Researchers from different disciplines work independently on a research study to address a research issue).</li><li>○ Transdisciplinary (Researchers from different disciplines collaborate on a research study using a shared framework to address a research issue).</li><li>○ Interdisciplinary (Researchers from different disciplines collaborate on a project using their discipline-specific perspective to address a research issue).</li></ul></li></ul> <p>[See: Stokols D, et al. <a href="#">The science of team science: overview of the field and introduction to the supplement</a>. Am J Prev Med. 2008 Aug;35(2 Suppl):S77-89.]</p>



<b>RESEARCH OUTPUTS AND ACTIVITIES</b>	<b>Research Outputs and Activities</b> are products and/or activities resulting from basic or clinical biomedical research.
<b>Indicators</b>	<b>Examples</b>
<b>Conferences or Meetings or Symposia or Lectures</b>	Conference papers resulting from the research study. Conference posters resulting from the research study. Panel discussions resulting from the research study. Presentations submitted by members of a research study in response to a Call for Papers issued by organizers of a meeting or conference. Presentations given by members of a research study in response to a written invitation issued by organizers of a meeting or conference. Lecture provided by research investigators. Supplemental materials provided by research investigators. Meetings or symposia are organized and held by research investigators.
<b>Data (public or restricted)</b>	Research data generated by the research study. Research data is deposited into a shared repository. Metadata from research data is shared with other parties. Supplemental materials are deposited into a shared repository.
<b>Databases or Repositories</b>	Database or repository resulting from the research study.
<b>Diagnostic Techniques and Procedures</b>	Diagnostic application for identification of a disease, disorder or condition developed as a result of the research study. Screening tool for identification of a disease, disorder or condition developed as a result of the research study.
<b>Funding</b>	Research study invited to submit a funding application from a funding body. Research study secures funding.
<b>Gray Literature Materials</b>	Non peer-reviewed journal articles or report or other publication resulting from the research study. Trade publications resulting from the research study. Supplemental materials that supplement a publication (published or unpublished). Slides, videos or other materials resulting from the research study.



<b>RESEARCH OUTPUTS AND ACTIVITIES</b>	Research Outputs and Activities are products and/or activities resulting from basic or clinical biomedical research.
<b>Indicators</b>	Examples
<b>Invention Disclosures</b>	Invention disclosures reported to the university/organization as a result of the research study. License agreements or patents may be executed for inventions deemed to be of potential commercial value. Examples of inventions are: <ul style="list-style-type: none"> <li>• Diagnostic product</li> <li>• Therapeutic product</li> <li>• Measurement instrument</li> <li>• Computer software</li> </ul>
<b>License Agreements</b>	License agreement executed for invention or intellectual property generated by the research study.
<b>Measurement Instruments</b>	Measurement instrument developed as a result of the research study.
<b>Media Releases, Appearances or Interviews</b>	News releases issued by the research study or affiliate organization. Media appearances or interviews involving the research investigators. Research study is profiled in a publication published by the institution.
<b>Medical Devices</b>	Medical device or prototype developed as a result of the research study.
<b>Mobile Applications</b>	Mobile application developed by the research study.
<b>Outreach Efforts</b>	Research investigators invited to provide a presentation based on research findings to the public. Research investigators invited to provide a presentation at a non-professional conference. Research investigators meet with policy-makers and other stakeholders to review research findings. Number of attendees at outreach visits. Other types of outreach activities.
<b>Patents</b>	Patent executed for invention generated by the research study.
<b>Peer-Reviewed Journal Articles</b>	Peer-reviewed journal articles resulting from the research study.
<b>Pharmaceutical Preparations</b>	Potential new drug identified as a result of the research study.
<b>Research Methodologies</b>	Algorithm resulting from the research study. Conceptual framework resulting from the research study. Scientific analysis method resulting from the research study. New approach for researching a disease, disorder or condition resulting from the research study. Novel use of technology resulting from the research study. Theoretical construct resulting from the research study.



<b>RESEARCH OUTPUTS AND ACTIVITIES</b>	Research Outputs and Activities are products and/or activities resulting from basic or clinical biomedical research.
<b>Indicators</b>	Examples
<b>Social Media Applications</b>	Social media accounts (Twitter, blogs, Facebook, etc.) utilized by the research study to disseminate results about the research study. Research investigators create a You Tube video about the research study. Research investigators create a Wikipedia or other wiki entry based on the research study.
<b>Software Applications</b>	Software resulting from the research study (alpha or beta).
<b>Trainees or Scholars</b>	Trainees or scholars involved in the research study.
<b>Training Materials</b>	Training materials developed as a result of the research study. Best practices guidance document developed as a result of the research study.
<b>Website of Research Study</b>	Website developed for the research study.



<b>ADVANCEMENT OF KNOWLEDGE</b>	<b>Advancement of Knowledge</b> represents research outputs and/or activities that contribute to the scholarly record.
<b>Indicators</b>	<b>Evidence</b>
<b>Books or Book Chapters</b>	<p>Book or book chapters generated by the research study is noted in a bibliography.</p> <p>Number of libraries that own the book generated by the research study.</p> <p>Book is used as a textbook for higher education.</p> <p>Subsequent editions of the book or book chapters.</p> <p>Book is reviewed by a scholarly journal.</p> <p>Translations of the book.</p> <p>Book awarded prizes such as the PROSE Award or noted by an organization as having made a significant contribution to a field.</p> <p>Book noted on a publisher’s best-seller list.</p> <p>Book or book chapter cited in subsequent publications.</p> <p>Book publicly recommended on Google+.</p> <p>Author invited to present on the topic related to the book or book chapter.</p>
<b>Change in Understanding and Awareness</b>	<p>Research study findings represent a paradigm shift in a field.</p> <p>Research study findings lead to change in understanding a problem.</p> <p>Research study findings expand the knowledge in a field.</p> <p>Research study findings lead to a new approach to disease, disorder or condition.</p>
<b>Citations to Publications</b>	<p>Publications generated by the research study are cited in a subsequent reference including journal articles, books, book chapters, gray literature, dissertations, patents, web sources, and/or data records.</p> <ul style="list-style-type: none"> <li>• Number of first generation citations.</li> <li>• Number of second generation citations.</li> <li>• Countries represented by citations.</li> <li>• Institutions represented by citations.</li> <li>• Languages represented by citations.</li> <li>• Subject foci represented by citations.</li> <li>• Funding acknowledgements represented by citations.</li> <li>• Other research studies represented by citations.</li> </ul> <p>See <b>Publication Metrics</b> for related examples.</p>
<b>Classical Articles</b>	Publication generated by the research study is cited or noted as being a classical article in a field of study.



<b>ADVANCEMENT OF KNOWLEDGE</b>	Advancement of Knowledge represents research outputs and/or activities that contribute to the scholarly record.
<b>Indicators</b>	Evidence
<b>Conferences</b>	<p>Conference theme is organized around the topic related to the research study.</p> <p>Conference panel is created around the topic related to the research study.</p> <p>Research study findings are cited in a presentation.</p>
<b>Collaborations/Partnerships</b>	<p>Research study collaborations that continue after completion of a research study within the university or outside of the university.</p> <p>Research study results in new collaborative relationship after completion of a research study within the university or outside of the university.</p> <p>Research study members are invited to collaborate on a new research study within the university or outside of the university.</p> <p>Collaborative relationships can be classified in a number of ways:</p> <ul style="list-style-type: none"> <li>• Type of collaboration?             <ul style="list-style-type: none"> <li>○ Number of collaborations</li> <li>○ Number of departments or disciplines represented</li> <li>○ Number of institutions represented</li> <li>○ Duration</li> </ul> </li> <li>• Type of partner?             <ul style="list-style-type: none"> <li>○ Community</li> <li>○ Private/Foundation</li> <li>○ Industry</li> <li>○ University</li> <li>○ Government</li> </ul> </li> <li>• Geographic location of the partner?             <ul style="list-style-type: none"> <li>○ Domestic (within the United States).</li> <li>○ International (outside the United States).</li> </ul> </li> <li>• Type of partnership?             <ul style="list-style-type: none"> <li>○ Multidisciplinary (Researchers from different disciplines work independently on a research study to address a research issue).</li> <li>○ Transdisciplinary (Researchers from different disciplines collaborate on a research study using a shared framework to address a research issue).</li> <li>○ Interdisciplinary (Researchers from different disciplines collaborate on a project using their discipline-specific perspective to address a research issue).</li> </ul> </li> </ul>



<b>ADVANCEMENT OF KNOWLEDGE</b>	<b>Advancement of Knowledge</b> represents research outputs and/or activities that contribute to the scholarly record.
Indicators	Evidence
<b>Consensus Development Conferences</b>	Research study cited in a Consensus Development Conference.
<b>Curriculum Guidelines/Materials</b>	Curriculum guideline refers to the research study as being significant or for use as recommended or background readings for more information. Research study findings are cited in teaching materials.
<b>Data</b>	Research data is deposited into a repository. Research data created by the research study are reused and/or cited by other parties.
<b>Gray Literature</b>	Research study findings are noted in a trade publication, government documents, industry reports, public policy documents or other publications. Research study findings are noted by a funding agency.
<b>Licenses</b>	License is granted to outside parties for use of intellectual property or invention generated by the research study. Examples of licenses include: <ul style="list-style-type: none"> <li>• Evaluation and Option Agreement.</li> <li>• Non-Exclusive License Agreement.</li> <li>• Exclusive License Agreement.</li> </ul>
<b>Mass Media</b>	Mass media publication or broadcast refers to the research study. Research investigators are interviewed by the media.
<b>Material Transfer Agreements (MTA)</b>	MTA is granted for transfer of tangible property generated by the research study.
<b>Meta-Analyses</b>	Research study is cited in a meta-analysis.
<b>Institute or Center</b>	New institute or center is formalized as a result of a research study.
<b>Partnership/Collaboration</b>	New partnership or collaboration formed as a result of a research study.
<b>Research Direction</b>	Research study findings lead to new direction and/or area of research.
<b>Research Field or Discipline</b>	Research study findings lead to new field of research or discipline.
<b>Outreach Efforts</b>	Research study investigators receive feedback as a result of an outreach effort.



MASTER\_LAST UPDATED 04 February 2014.

Washington University School of Medicine in St. Louis Bernard Becker Medical Library.

This work is licensed under a [Creative Commons Attribution-NonCommercial-Share Alike 3.0 United States License](https://creativecommons.org/licenses/by-nc-sa/3.0/). Questions? Cathy C. Sarli ([sarlic@wustl.edu](mailto:sarlic@wustl.edu))

<b>ADVANCEMENT OF KNOWLEDGE</b>	Advancement of Knowledge represents research outputs and/or activities that contribute to the scholarly record.
<b>Indicators</b>	Evidence
<b>Pharmaceutical Preparations</b>	Potential new drug shows benefit during pre-clinical development trials. Investigational New Drug (IND) application accepted by FDA.
<b>Proof of Concept (POC)</b>	An experimental scientific method or innovation demonstrates feasibility in a pilot study.
<b>Publication Metrics</b>	<p>Publication generated by the research study accessed/viewed online. (Publications include journal articles, books, book chapters, slides, software, conference papers, data sets, videos, supplemental materials, etc.).</p> <p>Publication generated by the research study downloaded.</p> <p>Publication generated by the research study is assigned a ranking factor by a reviewer based on significance of the research study.</p> <p>Publication generated by the research study is awarded a “Best Paper” award by a publisher.</p> <p>Publication generated by the research study is reviewed by <a href="#">Facultyof1000</a>.</p> <p>Publication generated by the research study is noted as a Breakthrough of the Year in <a href="#">AAA Science Magazine</a>.</p> <p>Publication generated by the research study is noted as a Top Scientific Discovery in <a href="#">Wired</a>.</p> <p>Publication generated by the research study is noted in “Data and Rankings” in <a href="#">Science Watch</a>.</p> <p>Author/s in publication generated by the research study is noted in “Data and Rankings” in <a href="#">Science Watch</a>.</p> <p>Publication generated by the research study is noted as a <a href="#">SciVerse ScienceDirect Top 25</a>.</p> <p>Publication generated by the research study is noted as a Hot Paper in <a href="#">Essential Science Indicators</a>.</p> <p>Publication generated by the research study is noted as a Core Paper in <a href="#">Essential Science Indicators</a>.</p> <p>Publication generated by the research study is noted as a Highly Cited Paper in <a href="#">Essential Science Indicators</a>.</p> <p>Research study itself is referred to in a publication without a reference.</p>
<b>Reprint Requests</b>	Requests for reprints (print or electronic) for journal articles generated by the research study.
<b>Requests for Information</b>	Physicians, policy makers or consumers contact research study investigators for more information on research findings.
<b>Research Methodologies</b>	<p>Research methodologies developed by the research study are used by others. Examples include:</p> <ul style="list-style-type: none"> <li>• Scientific analysis method.</li> <li>• Conceptual framework.</li> <li>• Algorithm.</li> </ul>
<b>Research Practice</b>	Research study leads to change in bench or clinical research practices.



<b>ADVANCEMENT OF KNOWLEDGE</b>	<b>Advancement of Knowledge</b> represents research outputs and/or activities that contribute to the scholarly record.
Indicators	Evidence
<b>Research Studies/Ancillary</b>	Ancillary research study generated as a result of the research study. <ul style="list-style-type: none"> <li>• Dollar amount of the new research study.</li> <li>• Duration of the new research study.</li> <li>• Type of funding sources.</li> <li>• Full time employees.</li> </ul>
<b>Research Studies/New</b>	New research study generated as a result of the research study. New pilot award generated as a result of research study findings. <ul style="list-style-type: none"> <li>• Dollar amount of the new research study.</li> <li>• Duration of the new research study.</li> <li>• Type of funding sources.</li> <li>• Full time employees.</li> </ul>
<b>Research Studies/Renewed</b>	Research study is renewed. <ul style="list-style-type: none"> <li>• Dollar amount of the new research study.</li> <li>• Duration of the new research study.</li> <li>• Type of funding sources.</li> <li>• Full time employees.</li> </ul>
<b>Reviews</b>	Research study cited in a review.
<b>Social Media Applications</b>	Publication generated by the research study is referred to or cited in a blog, tweet, wiki, or other non-traditional mode of dissemination. (Publications include journal articles, books, book chapters, slides, software, conference papers, data sets, videos, supplemental materials, etc.). Publication generated by the research study accessed/viewed online. Publication generated by the research study downloaded. Publication generated by the research study is bookmarked by online reference managers. Comments, notes, recommendations and/or rankings are added by readers to a publication generated by a research study. Video about the research study is viewed or recommended by others. Wiki entry (based on the research study) is publicly edited.
<b>Software Applications</b>	Software applications developed by the research study are used by others.
<b>Subject Headings/Thesauri</b>	New subject heading or thesauri term or phrase resulting or related to the research study is established.
<b>Systematic Reviews</b>	Research study is cited in a systematic review.



<b>ADVANCEMENT OF KNOWLEDGE</b>	<b>Advancement of Knowledge</b> represents research outputs and/or activities that contribute to the scholarly record.
<b>Indicators</b>	<b>Evidence</b>
<b>Trainees/Scholars</b>	For some research studies, trainees or scholars are involved with research. Examples of outcomes related to the training/education received are: <ul style="list-style-type: none"> <li>• Trainees or scholars receive advanced degrees.</li> <li>• Trainees or scholars continue research at different institutions.</li> <li>• Trainees or scholars receive grant award funding for research.</li> <li>• Trainees or scholars engage in translational research.</li> </ul>
<b>Training Materials</b>	Training materials created by the research study are used or adapted by others.
<b>Website of Research Study/ Usage</b>	Some investigators have websites devoted to a research study. Examples of metrics related to the website include: <ul style="list-style-type: none"> <li>• Number of page views.</li> <li>• Number of unique and returning visitors.</li> <li>• Origin of site visitors by country.</li> <li>• Time spent on site.</li> <li>• Requests from the public for more information.</li> <li>• Requests from health care providers and researchers for more information.</li> <li>• Other web-based metrics.</li> </ul>

<b>CLINICAL IMPLEMENTATION</b>	<b>Clinical Implementation</b> is the adoption of research outputs and/or activities in clinical applications.
<b>Indicators</b>	<b>Evidence</b>
<b>Biological Materials</b>	Biological material application generated by the research study shows benefit during clinical trials. Biological material application generated by the research study registered/licensed with FDA. Biological material application generated by the research study used by health care providers and/or consumers.
<b>Clinical Decision Aids</b>	Research study cited in a clinical decision aid. Research study findings are synthesized in consumer health materials.
<b>Clinical Trial Outcomes</b>	Research study efforts results in recruitment and retention of clinical trial participants. Clinical Trial is successful (Phase I, II, III, or IV).
<b>Clinical/Practice Guidelines</b>	Research study cited in a guideline issued by a government agency. Research study cited in a guideline issued by a specialty organization related to the field of study. Research study cited in a guideline issued by a non-government organization. Research study cited in a clinical point-of-care resource.



<b>CLINICAL IMPLEMENTATION</b>	<b>Clinical Implementation</b> is the adoption of research outputs and/or activities in clinical applications.
<b>Indicators</b>	<b>Evidence</b>
<b>Clinically Effective Practice</b>	Research study findings result in a clinically effective approach in the management and treatment of a disease, disorder or condition. Clinicians in the field report change in delivery of healthcare based on findings of research study.
<b>Coding</b>	HCPCS code implemented as a result of the research study. ICD code implemented as a result of the research study. CPT code implemented as a result of the research study.
<b>Continuing Education Materials</b>	Research study findings cited in continuing education materials.
<b>Diagnostic Techniques and Procedures</b>	Research study findings result in a diagnostic application for identification of a disease, disorder or condition. Research study findings result in a screening tool for identification of a disease, disorder or condition.
<b>Disease Prevention/Eradication</b>	Research study findings lead to identification of measures for disease prevention. Research study findings lead to eradication of a disease.
<b>Enhancement of Resources</b>	Research study findings result in enhancement of existing resources and expertise.
<b>Laboratory Techniques and Procedures</b>	Research study findings result in new laboratory methods or procedures.
<b>Measurement Instruments</b>	Measurement instrument generated by the research study is used. <ul style="list-style-type: none"> <li>• Requestor status, individual or organization.</li> <li>• Purpose.</li> <li>• Translations, if applicable.</li> <li>• Adaptations, if applicable.</li> </ul>
<b>Medical Devices</b>	Clinical trial study testing of a medical device generated by the research study. Clinical data generated in support of marketing a medical device, 510(k); Investigational Device Exemption, IDE; or Premarket Approval, (PMA) generated by the research study. Medical device generated by the research study shows benefit during clinical trials. Medical device generated by the research study registered/licensed with FDA. Medical device generated by the research study used by health care providers and/or consumers.
<b>Mobile Applications</b>	Mobile application is developed by the research study is used by health care providers and/or consumers.



<b>CLINICAL IMPLEMENTATION</b>	<b>Clinical Implementation</b> is the adoption of research outputs and/or activities in clinical applications.
Indicators	Evidence
<b>Pharmaceutical Preparations</b>	Drug generated by the research study shows benefit during clinical trials. Drug generated by the research study registered/licensed with FDA. Drug generated by the research study is listed on a drug formulary list. Drug generated by the research study listed on the WHO Model List of Essential Medicines. Drug generated by the research study is prescribed by health care providers.
<b>Quality Measure Guidelines</b>	Research study cited in a guideline issued by a government agency. Research study cited in a guideline issued by a specialty organization related to the field of study. Research study cited in a guideline issued by a non-government organization.
<b>Quality of Life</b>	Research findings result in a treatment or intervention that is judged as being clinically effective. Patients self-report increase in quality of life.
<b>Reporting Requirements</b>	Research study identifies new parameter leading to surveillance and reporting of a disease, disorder or condition.

<b>COMMUNITY BENEFIT</b>	<b>Community Benefit</b> is the enhancement of well-being to the community as a result of research outputs and/or activities.
Indicators	Evidence
<b>Awareness and Identification of Risk Factors</b>	Research study findings lead to public awareness of risk factors of a disease, disorder, condition or behavior. Research study findings lead to identification of risk factors of a disease, disorder, condition or behavior.
<b>Consumer Health Information</b>	Research study findings result in patient decision materials to assist with healthcare decision-making. Research study findings are cited in materials for patients or the public.
<b>Health Care Quality Access and Evaluation</b>	Research study findings result in increased performance, quality, and consistency in the delivery of health care services.
<b>Health Promotion</b>	Research study findings leads to enhancement of health promotion activities among community members.
<b>Lifestyle Intervention</b>	Research study findings leads to identification of a lifestyle intervention.
<b>Measurement Instruments</b>	Measurement instrument generated by the research study used by consumers.
<b>Partnerships</b>	Research study forms partnership with Community or other group to address a community-based need.
<b>Pharmaceutical Preparations</b>	Drug generated by the research study used by consumers.
<b>Private Healthcare Benefit Plans</b>	Research study cited in private insurance benefit plan in support of coverage.
<b>Public Healthcare Benefit Plans</b>	Research study cited in a public insurance benefit plan in support of coverage.
<b>Standard of Care</b>	Research study findings result in clinically effective approach in the standard of care for a disease, disorder or condition.



<b>LEGISLATION AND POLICY</b>	<b>Legislation and Policy</b> represents codification of research outputs and/or activities into public law, guidelines, standards or policy.
<b>Indicators</b>	<b>Evidence</b>
<b>Committee Participation</b>	Research study members invited to serve on advisory boards. Research study members invited to serve on committees for policy development.
<b>Guidelines</b>	Research study cited in development of guidelines issued by organizations.
<b>Legislation/Regulations</b>	Research study cited in enactment of federal, state or local legislation or regulation.
<b>Policy</b>	Research study cited in enactment of federal, state or local policy. Research study cited in enactment of non-governmental policy. Policy-making organizations report that research findings resulted in change in policy.
<b>Standards</b>	Research study cited in enactment of standards such as American National Standards Institute (ANSI) or the International Standard Organization (ISO).
<b>Testimony/Witness</b>	Testimony based on research outputs and/or activity is presented before a legislative body.

<b>ECONOMIC BENEFIT</b>	<b>Economic Benefit</b> represents economic outcomes as a result of research outputs and/or activities.
<b>Indicators</b>	<b>Evidence</b>
<b>Costs Savings</b>	Research study findings result in reduced costs in the delivery of health care services.
<b>Cost-Effectiveness</b>	Research study findings result in a cost-effective intervention for a disease, condition or disorder.
<b>Disease Prevention/Eradication</b>	Research study findings lead to identification of measures for disease prevention. Research study findings lead to eradication of a disease.
<b>Health Resources</b>	Research study findings result in enhancement of existing resources and expertise.
<b>Quantity and Quality of Life</b>	Research findings result in a treatment or intervention that is judged as being clinically effective. Patients self-report increase in quality of life.
<b>Quality of Healthcare Services</b>	Research study findings result in increased performance, quality, and consistency in the delivery of health care services.



<b>ECONOMIC BENEFIT</b>	Economic Benefit represents economic outcomes as a result of research outputs and/or activities.
<b>Indicators</b>	<b>Evidence</b>
<b>License Agreements</b>	Revenue generated from granting of licensing to outside parties for use of intellectual property or invention generated by the research study. Examples of licenses include: <ul style="list-style-type: none"> <li>• Number of licenses granted.</li> <li>• Requestor status, individual or organization.</li> <li>• Purpose.</li> <li>• Translations, if applicable.</li> <li>• Adaptations, if applicable.</li> </ul>
<b>Life Expectancy</b>	Research study findings result in increased life expectancy.
<b>Morbidity and Mortality</b>	Research findings result in reduction of disease burden. Research findings result in reduction of morbidity. Research findings result in reduction of mortality. Research findings results in reduction of prevalence of a disease, disorder or condition. Research findings result in reduction of incidence of a disease, disorder or condition.
<b>Pharmaceutical Preparations</b>	Drug generated by the research study results in a cost-effective means of management of a disease, disorder or condition.
<b>Research Project/Ancillary</b>	Ancillary research study generated as a result of the research study. <ul style="list-style-type: none"> <li>• Dollar amount of the new research study.</li> <li>• Duration of the new research study.</li> <li>• Type of funding sources.</li> <li>• Full time employees.</li> </ul>
<b>Research Projects/New</b>	New funded research studies generated as a result of the research study. <ul style="list-style-type: none"> <li>• Dollar amount of the new research study.</li> <li>• Duration of the new research study.</li> <li>• Type of funding sources.</li> <li>• Full time employees.</li> </ul>
<b>Research Projects/Renewed</b>	Renewed research studies generated as a result of the research study. <ul style="list-style-type: none"> <li>• Dollar amount of the new research study.</li> <li>• Duration of the new research study.</li> <li>• Type of funding sources.</li> <li>• Full time employees.</li> </ul>



<b>ECONOMIC BENEFIT</b>	Economic Benefit represents economic outcomes as a result of research outputs and/or activities.
<b>Indicators</b>	<b>Evidence</b>
<b>Spin-off Company</b>	Spin-off company formed as a result of the research study. <ul style="list-style-type: none"> <li>• Revenue generated.</li> <li>• Duration of spin-off.</li> <li>• Value at termination of spin-off company.</li> <li>• Number of employees hired.</li> </ul>
<b>Start-up Company</b>	Start-up company formed as a result of the research study. <ul style="list-style-type: none"> <li>• Revenue generated.</li> <li>• Number of employees hired.</li> </ul>