

Glossary of Terms

Term	Definition
Advancement of Knowledge	Advancement of knowledge represents research outputs and/or activities that contribute to the scholarly record.
Advisory Committees	Advisory Committees are defined by the National Library of Medicine as groups set up to advise governmental bodies, societies, or other institutions on policy.
Algorithm	An algorithm is defined by the National Library of Medicine as a procedure consisting of a sequence of algebraic formulas and/or logical steps to calculate or determine a given task.
Biological Factors	The National Library of Medicine defines biological factors as endogenously-synthesized compounds that may influence biological phenomena or represent quantifiable biomarkers. Biological factors are a variety of extracellular substances that are not otherwise classified under enzymes, hormones, or hormone antagonists. Included in this definition are antigens, biological markers, blood coagulation factor inhibitors, blood coagulation factors, chemotactic factors, inflammation mediators, intercellular signaling peptides and proteins, pheromones, pigments, and biological toxins.
Biologics	Biologics are biological and related products including blood, vaccines, allergenics, tissues, and cellular and gene therapies. Biologics, in contrast to drugs that are chemically synthesized, are derived from living sources (such as humans, animals, and microorganisms), are not easily identified or characterized, and many are manufactured using biotechnology according to the Center for Biologics Evaluation and Research (CBER), a Center within the Food and Drug Administration.
Book/Book Chapter	See Publications.
Cells and Biological Entities	Cells are defined by the National Library of Medicine as the fundamental, structural, and functional units or subunits of living organisms. Included in this group are transformed, hybrid, and tumor cell lines, as well as stem cells, among others. The term “biological entity” is a broad term. Biological entities for this purpose include biological materials typically described as an “organism” as well as non-living entities such as viruses. An organism may be defined as an individual that is capable of carrying out all of life’s functions, such as growth, homeostasis, and reproduction. Included in this group are animal disease models.
Citations	<p>Citations are works that cite a publication generated by research study. The most common publication type generated by a research study is a peer-reviewed journal article which summarizes research findings and may refer to research data, databases, software or algorithms or other outputs. Knowing how research findings are used by other scholars and researchers can be helpful in the following ways:</p> <ul style="list-style-type: none"> • Identify similar research projects • Identify possible collaborators • Discover ways that the research findings are being used • Duplication of research findings • Confirmation of research findings • Correction of research findings

	<ul style="list-style-type: none"> • Improvement of research findings • Repudiation of research findings • Extension of research (different human populations, different animal models/species, etc.) • Proper attribution/credit of research findings • Quantify return on research funding • Justification for future request for funding • Demonstration of research impact <p>There are a number of resources that provide for searching of citations to publications. Some examples are CINAHL Plus, Google Scholar, Inspec, Web of Knowledge, PsycINFO, ScienceDirect, Scopus, and Yahoo.</p>
Classical Articles	The National Library of Medicine defines classical articles as works consisting of a current presentation of a previously printed seminal article marking a milestone in the history of medicine or science. Classical Articles can be located in PubMed using the Advanced Search option and filtering by Type of Article.
Clinical Decision Support Decision Aids	Clinical Decision Support Decision Aids refers to materials that are designed for patients, or people facing healthcare decisions. Decision aids often include evidence-based information about interventions and therapeutic options.
Clinical Implementation	Clinical implementation is the application or adoption of research outputs in clinical applications.
Clinical Trials	Clinical Trials are defined by the National Library of Medicine as pre-planned studies of the safety, efficacy, or optimum dosage schedule (if appropriate) of one or more diagnostic, therapeutic, or prophylactic drugs, devices, or techniques selected according to predetermined criteria of eligibility and observed for predefined evidence of favorable and unfavorable effects. For more information on Clinical Trials, please see Understanding Clinical Trials from ClinicalTrials.gov.
Clinical/Practice Guidelines	<p>Clinical or practice guidelines are defined by the National Library of Medicine as works consisting of a set of directions or principles to assist the health care practitioner with patient care decisions about appropriate diagnostic, therapeutic, or other clinical procedures for specific clinical circumstances. Practice guidelines may be developed by government agencies at any level, institutions, organizations such as professional societies or governing boards, or by the convening of expert panels. They can provide a foundation for assessing and evaluating the quality and effectiveness of health care in terms of measuring improved health, reduction of variation in services or procedures performed, and reduction of variation in outcomes of health care delivered. Clinical or practice guidelines usually cite references from a research study whose findings were used to support the recommendations as noted in the guideline.</p> <p>There are specific resources that contain only clinical or practice guidelines and these can be searched using a variety of search queries. However, review of the literature can be helpful in locating evidence of clinical implementation from research study findings noted in practice guidelines. For example, a literature review using the query, “Ocular Hypertension Treatment Study” resulted in an article from a trade publication that provided information as to a practice guideline. As noted in the article:</p>

“There’s no question that measuring central corneal thickness is about to go mainstream, as a result of the Ocular Hypertension Treatment Study (OHTS) . . . corneal thickness emerged as such a powerful predictor that the OHTS study group recommended that Eye M.D.s consider checking the central corneal thickness of all ocular hypertensive patients. The Academy [American Academy of Ophthalmology] followed suit, and in a rare, midcycle revision of its Preferred Practice Pattern guidelines, endorsed pachymetry for POAG suspects.” (Source: Karmel, Miriam. Pachymetry Comes of Age. Eye Net. February 2003).

Clinical/Practice Guidelines: Government

One example of a clinical/practice guideline related to glaucoma issued by a government agency is the [U.S. Preventive Services Task Force \(USPSTF\) Screening for Glaucoma: Recommendation Statement](#). Evidence used to support the recommendations is noted in the Major Recommendations section.

Examples of other governmental agencies that issue clinical guidelines:

- [Centers for Disease Control](#)
- [National Institutes of Health](#)
- [VA/DoD](#) (Department of Veterans Affairs)

Clinical/Practice Guidelines: Specialty Organizations

In addition to government agencies, medical specialty societies or professional organizations that focus on a specific area of health care also produce clinical and practice guidelines. Medical specialty society guidelines are usually found on the website of the issuing organization.

For example, the [American Academy of Ophthalmology](#) issues [Preferred Practice Guidelines](#). Preferred Practice Patterns (PPPs) are designed to identify characteristics and components of quality eye care. Developed by a panel of experts (the Quality of Care and Knowledge Base Development Secretariat and the PPP Committee) and based on the best available scientific data, PPPs provide guidance for the pattern of practice, not for the care of a particular individual. Guidelines are developed by the Academy without any external financial support. One example of a Preferred Practice Guideline is the [Primary Open-Angle Glaucoma Suspect Preferred Practice Pattern Guideline](#), 2005. The record for the AAO guideline in the [National Guidelines Clearinghouse](#) includes a section for evidence supporting the recommendations which lists references to published literature.

The screenshot shows the National Guideline Clearinghouse website. The main content area displays a guideline for "Primary open-angle glaucoma suspect." The page is structured with a left-hand navigation menu and a main content area. The main content area includes sections for "Brief Summary", "GUIDELINE TITLE", "BIBLIOGRAPHIC SOURCE(S)", "GUIDELINE STATUS", and "RECOMMENDATIONS". A red callout box highlights a link: "Click on Evidence Supporting the Recommendations to view references that support the recommendations as noted in the guideline." The link is located under the "RECOMMENDATIONS" section.

Another example of a clinical guideline issued by a specialty organization is the [American Optometric Association](#) (AOA) which issues [Optometric Clinical Practice Guidelines](#). Optometric Clinical Practice Guidelines (OCPGs) are recommendations for patient care which are developed through a formal process. They combine the best available current scientific evidence and research with expert clinical opinion to recommend appropriate steps in the diagnosis, management, and treatment of patients with various eye and vision conditions. Each of the optometric practice guidelines has been developed by a consensus panel of optometrists who were selected for their knowledge and experience in that area. The guidelines have gone through extensive review processes within AOA and represent a broad consensus on guidelines for current optometric care.

Examples of specialty society or professional organizations that issue clinical guidelines:

- [American College of Physicians](#)
- [American Speech, Language and Hearing Association](#)
- [American Academy of Pediatrics](#)

Guidelines are also produced by vendors or organizations not affiliated with a governmental agency or specialty organization. One example of this type of guideline is the Evidence-Based Care Sheets produced by [Current Index to Nursing and Allied Health Information](#) (CINAHL). The CINAHL Evidence-Based Care Sheets include a list of references used to support the guidelines.

Clinical/Practice Guidelines: Other

	<p>Guidelines are also produced by vendors or organizations not affiliated with a governmental agency or specialty organization. One example of this type of guideline is the Evidence-Based Care Sheets produced by Current Index to Nursing and Allied Health Information (CINAHL). The CINAHL Evidence-Based Care Sheets include a list of references used to support the guidelines.</p> <p>Review of clinical or practice guidelines are required to locate evidence that findings from a research study were used as support for implementation of a guideline. Review of the literature can also be helpful in locating evidence of clinical implementation from research study findings noted in clinical or practice guidelines. Contact with policy-makers may be required in order to confirm that findings from a research study resulted in a new or revised clinical or practice guidelines.</p>
Clinically Effective Practice	<p>Some research studies generate outputs that result in a clinically effective approach in the management or treatment of a disease, disorder or condition. In some instances, health care providers report a change in healthcare delivery based on a finding from a research study.</p>
Coding	<p>There are several major medical coding systems used in the United States for use of classifying services, diagnoses, diseases, procedures, products, drugs, supplies and medical devices/equipment related to health care. The two primary systems are the Health Care Procedure Coding System (HCPCS) and the International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM).</p> <p>Health Care Procedure Coding System (HCPCS)</p> <p>The Health Care Procedure Coding System (HCPCS) is used to report hospital outpatient and physician services and consists of two levels.</p> <ul style="list-style-type: none"> • Level I Current Procedure Terminology codes (CPT) • Level II National Codes <p>HCPCS Level I Current Procedure Terminology codes (CPT)</p> <p>Level I of HCPCS consists of Current Procedural Terminology (CPT) codes which are published by the American Medical Association (AMA) and updated/revised annually. The purpose of the CPT coding system is to provide uniform language that accurately describes medical, surgical, and diagnostic services. CPT codes are associated with a code for classification of diseases, called an ICD-9 Code, (International Classification of Diseases, 9th Revision, Clinical Modification). The relationship between an ICD-9 code and a CPT code is that the diagnosis supports the medical necessity of the procedure. See ICD-9-CM section.</p> <p>There are three categories of CPT codes:</p>

Category I

Category I codes are the five-digit numeric codes included in the main body of CPT. These codes represent procedures that are consistent with contemporary medical practice and are widely performed. Codes assigned to this category have met certain criteria including:

- Procedure or service approved by the Food and Drug Administration (FDA)
- Procedure or service commonly performed by health care professionals nationwide
- Procedure or service's clinical efficacy is proven and documented

Category II

Category II codes are supplemental tracking codes that are intended to be used for performance measurement. In compliance with ongoing changes being made because of HIPAA regulations, these codes provide a method for reporting performance measures.

Category III

Category III codes represent temporary codes for new and emerging technologies. They have been created to allow for data collection and utilization tracking for new procedures or services. Category III codes are different from Category I CPT codes in that they identify services that may not be performed by many health care professionals across the country, do not have FDA approval, nor does the service/procedure have proven clinical efficacy. To be eligible for a Category III code, the procedure or service must be involved in ongoing or planned research. The rationale behind these codes is to help researchers track emerging technology and services to substantiate widespread usage and clinical efficacy.

The Code Process

Adding, modifying, or deleting of CPT codes is performed by a review process involving a CPT Editorial Panel and a CPT Advisory Panel. Each proposed coding change must be supported by peer-reviewed literature. CPT Codes, Category I, are reviewed annually with an update issued in the fall of each year with the new codes taking effect in January. CPT Codes, Category I vaccine product codes, Category II and Category III, are released twice a year in January and July with a six month period for implementation.

Each proposed CPT code must be supported by peer-reviewed literature. Location of documentation to support the use of a particular research study as support for a new CPT code is difficult as the reports from the review process are not publicly

available. What is helpful is reviewing the literature, especially from trade publications, to locate evidence that findings from a research study were used to support the implementation of new CPT codes. In some instances, contact with policy-makers may be required in order to confirm that findings from a research study resulted in a new CPT code.

HCPCS Level I Additional Resources:

- [CPT Code Information and Education](#)
- [CPT Process](#)

For example, review of the literature and confirmation with policy-makers revealed that the findings from the [Ocular Hypertension Treatment Study](#) (OHTS) resulted in the creation of a new CPT Code, Category III for corneal pachymetry, with follow-up to a CPT Category I code within four years.

Prior to 2002, a CPT code specific to pachymetry did not exist. Pachymetry was assigned as a Category III code (CPT 0025T, Determination of corneal thickness, with interpretation and report, bilateral), effective as of January 2002. As of January 2004, a Category I code, (CPT 76514, Ophthalmic ultrasound, echography, diagnostic; corneal pachymetry, unilateral or bilateral, determination of corneal thickness), was assigned. The move from a category III to a category I is evidence that a pachymetry, a “new and emerging technology,” demonstrated clinical efficacy.

According to the CPT Assistant: Authoritative Coding Information:

Corneal pachymetry (the measurement of corneal thickness) is an essential tool for glaucoma diagnosis and management because measurement of IOP is affected by the thickness of the cornea . . . The determination of an accurate IOP improves the diagnosis, screening and management of patients with glaucoma and OHT.

(Source: “CPT Assistant: Authoritative Coding Information.” The American Medical Association, July 2004)

HCPCS Level II National Codes

According to the [Centers for Medicare and Medicaid Services](#), Level II of the HCPCS is a standardized coding system that is used primarily to identify products, supplies, and services not included in the CPT codes, such as ambulance services and durable medical equipment, prosthetics, orthotics, and supplies (DMEPOS) when used outside a physician’s office.

Recommendations for new or revised HCPCS are submitted to the CMS HCPCS Workgroup from public and private sectors. The final decision is made by CMS. New or revised codes are effective as of January 1 of each year and changes are noted in the

annual HCPCS [release](#).

HCPCS Level II Additional Resources:

- [HCPCS codes](#)
- [HCPCS Quarterly Updates](#)
- [Innovators' Guide to Navigating CMS](#) (describes the process for determination of HCPCS codes)

International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM)

ICD-9-CM is used by health care providers for uniform classification of diagnoses and procedures. A diagnosis or procedure coded in the ICD-9-CM supports the medical necessity of a medical procedure or service in a CPT code. The National Center for Health Statistics (NCHS) is responsible for classification of diagnoses and the Centers for Medicare and Medicaid Services (CMS) are responsible for the classification of procedures.

Proposals for new or revised ICD-9-CM procedure codes are submitted to the ICD-9-CM [Coordination and Maintenance Committee](#) from public and private sectors. Proposals for a new code should include a description of the code being requested, and rationale for why the new code is needed. Supporting references and literature may also be submitted. Public meetings are held to discuss the proposals with final decisions made by the Director of NCHS and the Administrator of CMS. New or revised codes are effective as of October 1 of each year and changes are noted in official code revision packages referred to as addenda.

ICD-9-CM Additional Resources:

- [Overview of ICD-9-CM](#)
- [Innovators' Guide to Navigating CMS](#) (describes the process for determination of ICD-9-CM codes)
- [Process for Requesting New/Revised ICD-9-CM Procedure Codes](#)

Review of the literature and personal and anecdotal knowledge of research study investigators who may know of efforts by policy-makers to recommend new or revised medical codes is helpful in order to track implementation of new or revised medical codes based on findings from a research study. What is especially helpful is reviewing the literature, especially from trade publications, to locate evidence that findings from a research study were used to support the implementation of new or revised medical codes. Documentation used to support implementation of new or revised codes is difficult to locate and in some instances, may not be publicly available. Contact with policy-makers may be required in order to confirm that findings from a research study resulted in a new or revised medical code.

Collaborations	Collaboration is defined by Merriam-Webster as to work jointly with others especially in an intellectual endeavor.
Community Benefit	Community benefit is the enhancement of community health outcomes as a result of research outputs. Did the research study findings result in enhancement of quality of life? Did the research study findings produce a clinically effective intervention for a disease, condition or disorder? Did the research study findings result in increased performance, quality, and consistency in the delivery of health care services?
Conferences or Meetings or Symposia	Conferences or Meetings or Symposia are defined by the National Library of Medicine as conventions or formal meetings usually attended by delegates representing a special field of interest.
Conferences or Meetings or Symposia or Lectures	Conferences are defined by the National Library of Medicine as conventions or formal meetings usually attended by delegates representing a special field of interest.
Consensus Development Conferences	<p>Consensus Development Conferences are defined by the National Library of Medicine as presentations of summary statements representing the majority agreement of physicians, scientists, and other professionals convening for the purpose of reaching a consensus – often with findings and recommendations – on a subject of interest. The Consensus Development Conference, consisting of participants representing the scientific and lay viewpoints, is a significant means of evaluating current medical thought and reflects the latest advances in research for the respective field being addressed. Groups and organizations issue Consensus Development Conferences as does the National Institutes for Health through its NIH Consensus Development Program. These conferences result in a report that includes references to research studies used to support or refute a consensus or finding based on the evidence.</p> <p>An example of a non-NIH Consensus Development Conference is “A Panel Assessment of Glaucoma Management: Modification of Existing RAND-like Methodology for Consensus in Ophthalmology” Part I: Methodology and Design and Part II: Results and Interpretation, published in the American Journal of Ophthalmology. The purpose of this Consensus Development Conference was to examine ways to improve existing methodology to reach appropriate consensus in the treatment of primary, open angle glaucoma.</p> <p>Consensus Development Conferences can be located in PubMed using the Advanced Search option and filtering by Type of Article.</p>
Consumer Health Information Materials	Consumer Health Information is defined by the National Library of Medicine as information intended for potential users of medical and healthcare services. There is an emphasis on self-care and preventive approaches as well as information for community-wide dissemination and use.
Continuing Education Materials	Continuing Education programs are defined by the National Library of Medicine as educational programs designed to inform individuals of recent advances in their particular field of interest. They do not lead to any formal advanced standing. Some continuing education materials include references to research studies to promote understanding of diagnosis, treatment and therapies for a condition, and as part of recommended and/or background readings in the literature.

	<p>One example of a research study noted in continuing education material is from the Optometric Study Center issued by the Review of Optometry. Current modules are listed and expired modules are archived on the Review of Optometry website. In July 2007, the Review of Optometry issued a module titled, 13th Annual Glaucoma Report: Calculate the Risk Factors For Glaucoma which noted the clinical significance of the Ocular Hypertension Treatment Study (OHTS), citing:</p> <p>. . . the Ocular Hypertension Treatment Study (OHTS) and other studies published during the last decade have fundamentally changed how we diagnose and manage glaucoma, and have helped us to identify such risks. In past years, we diagnosed open-angle glaucoma based on elevated intraocular pressure (IOP), visible optic nerve damage and correlated visual field loss. These studies, however, offer a better understanding about how glaucoma manifests itself, what early changes occur in the optic nerve and how those changes affect visual fields. In other words, these studies have helped us identify some of the varied risk factors associated with glaucoma.</p> <p>Check the website of the specialty society or professional organization for continuing education materials for the specific medical specialty of the disease, condition or disorder. Review of continuing education materials is required to locate evidence that findings from a research study were used as support to promote understanding of diagnosis, treatment and therapies for a condition, and as part of recommended and/or background readings in the literature. Contact with policy-makers may be required in order to confirm that findings from a research study resulted in new or revised continuing education materials.</p>
Cost Effectiveness	Cost Effectiveness is a means of comparing alternative ways to achieve a specific set of results using Cost-Benefit Analysis.
Cost Savings	Cost Savings is defined by the National Library of Medicine reductions in all or any portion of the costs of providing goods or services. Savings may be incurred by the provider or the consumer.
Curriculum Guidelines/Materials	<p>Curriculum materials are resources that enhance a particular program of study within a formal educational setting. Creation of curriculum materials is usually developed using guidelines that are issued by an educational organization or by an organization devoted to a specialized area of medicine or research. Some guidelines for curriculum materials include a listing of core competencies and skills that should be taught as well as essential areas of knowledge required to meet the standards of a particular program of study. Many curriculum guidelines refer to research studies as being significant or for use as recommended or background readings for more information.</p> <p>An example of a curriculum guideline issued by an organization devoted to a specialized area of medicine or research is the International Council on Ophthalmology (ICO). ICO provides guidelines for curriculum for the education of ophthalmologists, Principles and Guidelines for the Curriculum for Education of the Ophthalmic Specialist.</p>

Principles and Guidelines of a Curriculum for Education of the Ophthalmic Specialist

**Presented By:
International Task Force on Resident and Specialist Education in Ophthalmology**

**On Behalf of:
The International Council of Ophthalmology (ICO)**

Trainees at all levels of training should be able to describe the key features and apply in clinical practice the results of evidence-based medicine in ophthalmology, including, but not limited to, the results of the following clinical trials (see Appendix 1 for full references)

*The Herpetic Eye Disease Study (HEDS)
The Fluorouracil Filtering Surgery Study (FFSS)
The Normal Tension Glaucoma Study
The Ocular Hypertension Study (OHTS)
The Glaucoma Laser Trial (GLT)
The Optic Neuritis Treatment Trial (ONTT)
The Ischemic Optic Neuropathy Decompression Trial (IONDT)
Studies of the Ocular Complications of AIDS (SOCA)
Branch Vein Occlusion Studies (BVOS)
Macular Photocoagulation Study (MPS)
Age-Related Eye Disease Study (AREDS)
Verteporfin in Photodynamic Therapy (VIP) Study*

Principles and Guidelines for the Curriculum for Education of the Ophthalmic Specialist.

The ICO also issued an appendix to Principles and Guidelines for the Curriculum for Education of the Ophthalmic Specialist, [Glaucoma: Ocular Hypertension Treatment Study \(OHTS\)](#). The appendix outlines recommended readings and background readings related to the Ocular Hypertension Treatment Study.

Data (public or restricted)

Data is defined by the [National Institutes of Health](#) as recorded factual material commonly accepted in the scientific community as necessary to validate research findings. Research data includes any numerical, descriptive or visual information on any type of file as generated by the research study and may be publicly available or restricted.

Some research investigators opt to make their research data publicly available while others are required to share research data as a condition of a grant award or journal policy. The National Institutes of Health (NIH) [Data Sharing Policy](#) requires that as of 2003, any NIH application seeking \$500,000 or more in direct costs in a single year is expected to include a plan for data sharing or state why data sharing is not possible. The Howard Hughes Medical Institute's [Policy on Sharing Publication-Related Materials, Data and Software](#) stipulates that upon publication of their work, investigators are expected to make materials, data and databases, and software integral to their publication freely available for research use by other scientists and to handle requests expeditiously. [PLoS](#) journals require that data integral to a manuscript be publicly available without restriction, provided that appropriate attribution is given and that the data can be shared.

Research data can be housed on research laboratory websites; publicly available repositories such as the Database of Genotypes and Phenotypes ([dbGaP](#)) or the [Gene Expression Omnibus Datasets](#); journal websites, or other repositories. The research data (stored as SAS datasets) generated by the [Ocular Hypertension Treatment Study](#) (OHTS) are housed on institutional servers and

	will be made public after the publications from the main study are completed.
Database	A database is defined by the National Library of Medicine as a work consisting of a structured file of information or a set of logically related data stored and retrieved using computer-based means.
Databases or Repositories	A Database is defined by the National Library of Medicine as a work consisting of a structured file of information or a set of logically related data stored and retrieved using computer-based means.
Diagnostic Techniques and Procedures	Diagnostic Techniques and Procedures are defined by the National Library of Medicine as methods, procedures, and tests performed to diagnose disease, disordered function, or disability.
Diagnostic Techniques and Procedures	Diagnostic Techniques and Procedures are defined by the National Library of Medicine as methods, procedures, and tests performed to diagnose disease, disordered function, or disability.
Diffusion	<p>Diffusion represents translation of research outputs and activities that result in research impact. Diffusion is manifested in a variety of indicators that are categorized in pathways that represent specific areas where research impact can be identified. Pathways are flexible and fluid, and there may be overlap of indicators between pathways. Pathways of Diffusion as Noted on the Becker Model:</p> <ul style="list-style-type: none"> • Advancement of Knowledge • Clinical Implementation • Community Benefit • Legislation and Policy • Economic Benefit
Disease Prevention/Eradication	Disease Prevention/Eradication is defined by the National Library of Medicine as the termination of all transmission of infection by global extermination of the infectious agent through surveillance and containment.
Economic Benefit	Economic benefit represents economic outcomes as a result of research outputs and/or activities.
Gray Literature Materials	Gray literature refers to materials that are not published using typical means of publication such as journal articles or books. While not formally published or disseminated, gray literature is an important source of information as it is produced by researchers in a specific field and can contain relevant resources for a research topic.
Guidelines	The National Library of Medicine defines guidelines as a comprehensive guide to problems and approaches in any field of activity. Guidelines may be developed by government agencies at any level, institutions, professional societies, governing boards, or by convening expert panels.
Health Care Quality, Access, and Evaluation	The National Library of Medicine defines Health Care Quality, Access, and Evaluation as a concept concerned with all aspects of the quality, accessibility, and appraisal of health care and health care delivery.
Health Promotion	Health Promotion is defined by the National Library of Medicine as encouraging consumer behaviors most likely to optimize health potentials (physical and psychosocial) through health information, preventive programs, and access to medical care.
Health Resources	Health Resources is defined by the National Library of Medicine as manpower, facilities, revenue, equipment, and supplies to produce requisite health care and services.

Indicators	Indicators are specific, concrete examples that demonstrate research impact.
Invention Disclosures	Invention disclosures are disclosures of a possible discovery or creation of a new material (either a new manufactured product or a new composition or matter), a new process, a new use for an existing material, or any improvements of any of these, reported to the university/organization before public release.
Laboratory Techniques and Procedures	The National Library of Medicine defines Laboratory Techniques and Procedures as methods, procedures, and tests performed in the laboratory with an intended application to the diagnosis of disease or understanding of physiological functioning. The techniques include examination of microbiological, cytological, chemical, and biochemical specimens, normal and pathological.
Legislation	The National Library of Medicine defines legislation as bills, laws, statutes, ordinances, or government regulations.
Legislation and Policy Enactment	Legislation and policy enactment represents codification of research outputs and/or activities into public law, guidelines, standards or policy. How did research outputs or activities influence or result in enactment of public law, guidelines, standards or policy? Did the research outputs or activities result in a new policy or standard? Did testimony from a research scientist before a legislative body result in enactment of legislation?
License Agreements	A license is defined by Washington University as a contract which awards to a party other than the owner(s) of the intellectual property the right to make, use, sell or import products or services based on the owner's intellectual property. If an output generated by a research study can be used or applied in future research, a license for use of the output by another organization or investigator can be issued to allow for use by organizations or researchers.
Life Expectancy	The National Library of Medicine defines Life Expectancy as representing the number of years, based on known statistics, to which any person of a given age may reasonably expect to live.
Mass Media	<p>Mass media publications are non peer-reviewed publications or consumer oriented publications that discuss, highlight or provide a summary of the findings of the research study. Mass media examples include newspapers, magazines, trade publications, consumer health websites, etc. These mass media publications are not issued by the research study investigators or the affiliate institution.</p> <p>For example, an article in the trade publication Optometric Management, "OHTS One Year Later" by J. James Thimons, outlined the significance of a study, the Ocular Hypertension Treatment Study (OHTS):</p> <p>The OHTS was the first major study to proactively assess the role of CCT in the diagnosis and decision for therapy . . . OHTS has shown itself to be one of the most important publications in the field of glaucoma in recent years. The data it has generated are simply the beginning of the knowledge that we will derive. Clinicians who manage patients who have glaucoma need to stay abreast of the many areas in which the OHTS study will affect the care of our patients in the future.</p> <p>Research conducted at Washington University has been featured in many mass media publications, such as:</p> <ul style="list-style-type: none"> • The New York Times:

- [“Hazards: Beware of Bumpers in Baby’s Crib, Study Says”](#)
- Time Magazine:
 - [“Missing Memories”](#)
- Newsweek:
 - [“Storing Up Smarts for a Rainy Day”](#)
- CNN.com
 - [“Estrogen: A surprise treatment for metastatic breast cancer”](#)

Mass media publications such as those produced using television or radio will be very difficult to locate, if at all. However, some research studies that are affiliated with a large academic or research centers have offices related to public affairs that track references to a particular study in mass media outlets including television and radio. Consult the campus office responsible for media matters such as the [Office of Public Affairs](#) at Washington University or its equivalent. Some offices offer a media releases archive that can be searched.

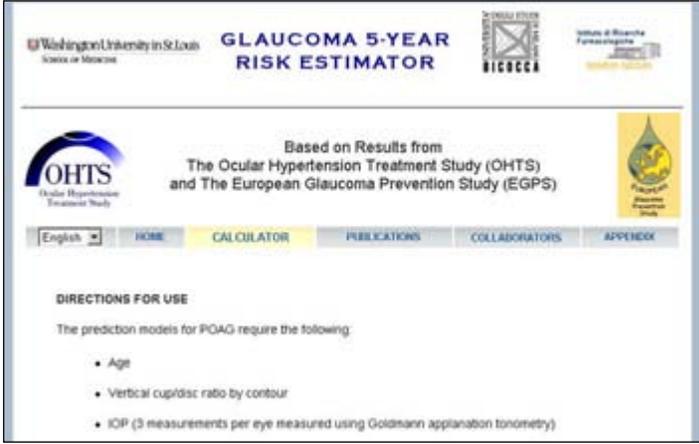
Check the websites of major organizations devoted to a specialized area of medicine or research for trade publications. These include organizations with a focus on consumer health. Trade publications are usually issued by an organization devoted to a specialized area of medicine or research and serve an intermediary role between research and practice by synthesizing research findings for clinicians and providing information on practice management. Many of these trade publications are freely available without a subscription. Check the websites of professional organizations devoted to a specialized area of medicine or research for trade publications. As with peer-reviewed literature, searching will require comprehensive review of the literature to locate evidence of knowledge transfer.

Another source of current updates on a research project is the funding source for the research project. For example, the [National Eye Institute](#) (NEI), which supported the [Ocular Hypertension Treatment Study](#) (OHTS) study, issued several updates on the findings from OHTS. The NEI [Clinical Studies Database](#) contains a listing of past and currently funded projects and also includes select publications associated with the research study. Check with the funding source of the research study to locate media communications that provided information on the research study.

Newspaper archives for local or national papers are also recommended. For example, the St. Louis Post-Dispatch offers a free search of the [St. Louis Post-Dispatch Archives](#) from 1998 to the present. The [New York Times](#) also offers a free search of its [Articles Archives](#) for articles from 1981 to the present.

Material Transfer Agreements (MTA)

Material Transfer Agreements (MTA) are defined by [Washington University](#) as a contract that covers the transfer of proprietary tangible property such as biological materials. Such contracts may cover materials coming into the University from academic or industrial sources, or may cover materials going out from the University to academic or industrial recipients. Negotiated terms of such agreements may cover the use of the original materials, progeny materials produced by self-replication of the original

	sample, and modifications of the original materials.
Measurement Instruments	<p>Measurement instruments are defined by the Health and Psychosocial Instruments Database (HaPI) as questionnaires, psychological tests, health status indicators, genetic tests, interview schedules, checklists, index measures, coding schemes/manuals, inventories, rating scales, projective techniques, and vignettes/scenarios. One way to assess use of a measurement instrument by health care providers and/or consumers is whether the instrument is noted on a database. Some measurement instruments are also published by major organizations and others are made available by healthcare companies.</p> <p>An example of a measurement instrument is the Glaucoma 5-Year Risk Estimator, developed by the Ocular Hypertension Treatment Study (OHTS), for assessing the risk of developing primary open angle glaucoma.</p> 
Media Releases, Appearances or Interviews	<p>Some large academic or research centers routinely issue media releases in concert with the investigators of a research study to announce new findings or updates from studies. Records of media releases are usually maintained by the office that is responsible for issuing media releases. Other examples of media releases are interviews or appearances.</p> <p>An example of a media release is "Model can predict risk of glaucoma in patients with elevated eye pressure," produced by Washington University School of Medicine announcing the new Glaucoma Risk Calculator tool developed by the Ocular Hypertension Treatment Study (OHTS).</p>



	
Medical Devices	<p>Medical devices are defined by the National Library of Medicine as expendable and nonexpendable equipment, supplies, apparatus, and instruments that are used in diagnostic, surgical, therapeutic, scientific, and experimental procedures. Some research studies result in the development of a new or improved medical device or prototype. If a medical device moves beyond the pre-clinical testing phase, it is ready for testing on humans using clinical trial studies. If a medical device has successfully completed the clinical trial process, FDA approval can be secured. Once approval is secured, the medical device can be used by health care providers and/or consumers.</p> <p>Review of the literature and personal and anecdotal knowledge of research study investigators is recommended in order to track medical devices that have demonstrated efficacy in clinical studies or those that are currently in use in clinical applications for treatment of a disease, condition or disorder. Particularly helpful is a review of the literature, especially from trade publications, to locate evidence that medical devices are being used in clinical settings.</p>
Meta-Analyses	<p>Meta-analyses are defined by the National Library of Medicine as works consisting of studies using a quantitative method of combining the results of independent studies (usually drawn from the published literature) and synthesizing summaries and conclusions which may be used to evaluate therapeutic effectiveness, plan new studies, etc. A meta-analysis may be subject to author bias. Meta-Analyses are not the same as a review or a systematic review. See Reviews and Systematic Reviews for more information.</p>
Mobile Applications	<p>Mobile applications are downloadable software programs designed for handheld devices that provide user interfaces for a variety of purposes. Some mobile apps are designed for medical applications such as calculators, physician reference tools, patient education tools, and testing tools. Two out of every three physicians utilizes a personal digital assistant or smartphone, and it is estimated that 81% of physicians will be using these devices in their practices by 2012. [Source: Manhattan Research, LLC. Physicians in 2012: The Outlook for On Demand, Mobile, and Social Digital Media.</p> <p>http://www.manhattanresearch.com/products/Research_Modules/Physician/physicians-2012-mobile-social-media.aspx</p>
Morbidity	<p>Morbidity is defined by the National Library of Medicine as the proportion of patients with a particular disease during a given year per given unit of population.</p>
Mortality	<p>Mortality is defined by the National Library of Medicine as deaths reported in a given population.</p>
Outcomes	<p>Outcomes assessment for health care is defined by the National Library of Medicine as evaluation undertaken to assess the</p>

	quality and effectiveness of health care as measured by the attainment of a specified end result or outcome. Measures include parameters such as improved health, lowered morbidity or mortality, and improvement of abnormal states.
Outreach Efforts	A common practice among research investigators is to visit (formal or informal) other researchers, clinicians, regulatory officials or policy-makers (government, industry, or academic) not involved with the project to discuss the research project and findings. These visits do not involve gathering of data. There may also be potential clinical trial participants and/or clinical trial participants in attendance.
Patents	<p>According to the United States Patent and Trademark Office, a patent for an invention is a grant of property rights by the U.S. Government through the U.S. Patent and Trademark Office. The patent grant excludes others from making, using, or selling the invention in the United States. A patent may be obtained by “. . . any person who invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof.”</p> <p>There are three major types of patents granted:</p> <ol style="list-style-type: none"> 1. Utility patents may be granted to anyone who invents or discovers any new and useful process, machine, article of manufacture, or composition of matter, or any new and useful improvement thereof. 2. Design patents may be granted to anyone who invents a new, original, and ornamental design for an article of manufacture. 3. Plant patents may be granted to anyone who invents or discovers and asexually reproduces any distinct and new variety of plant.
Peer-Reviewed Journal Articles	See Publications.
Pharmaceutical Preparations	<p>Pharmaceutical preparations are defined by the National Library of Medicine as drugs intended for human or veterinary use, presented in their finished dosage form. Pharmaceutical preparations can be considered as biological material applications when they reflect an approach based on understanding of details at the molecular level. If a drug has successfully completed the clinical trial process, FDA approval can be secured. Once approval is secured, the drug can be used by health care providers and/or consumers. Review of the literature and personal and anecdotal knowledge of research study investigators is recommended in order to track drugs that have demonstrated efficacy in clinical studies or those that are currently in use in clinical applications for treatment of a disease, condition or disorder. Particularly helpful is a review of the literature, especially from trade publications, to locate evidence that drugs are being used by health care providers and consumers</p> <p>A resource that may be helpful is the RePORT Expenditures and Results (RePORTER) database. RePORTER is a database on federally funded biomedical research projects conducted at universities, hospitals, and other research institutions supported by the Department of Health and Human Services (DHHS). RePORTER provides additional query fields, hit lists that can be sorted and downloaded to Excel, NIH funding for each project (expenditures), and the publications and patents that have acknowledged support from each project (results). RePORTER also provides links to PubMed Central, PubMed, and the U.S. Patent & Trademark</p>

	<p>Office Patent Full Text and Image Database for more information on research results. Some bench studies for pharmaceutical preparations funded by DHHS may be noted in the RePORTER database.</p> <p>Some research studies result in the development of a new drug. According to the FDA, each new drug requires an average of 10-15 years of testing and review, with most drugs not moving on to the clinical trial phase. If a drug developed during a pre-clinical (bench) study shows promise, the next step is a series of clinical trial studies, starting with a Phase I clinical trial to determine if the drug is safe for humans.</p>
Policy	<p>The National Library of Medicine defines policy as a course or method of action selected, usually by a government, to guide and determine present and future decisions. Policy can also be developed by non-governmental organizations.</p>
Private Healthcare Benefit Plan	<p>Private insurance companies provide benefit plans that outline what medical expenses are allowable under the plan. Many of these plans include specific coverage documents for certain procedures, drugs, interventions or technology used for healthcare. These specific coverage documents, often called coverage position or statements, often include documentation in support of a particular coverage position.</p> <p>For example, Cigna offers an index of coverage policies which includes corneal pachymetry. Within the coverage position for Corneal Pachymetry, findings from the Ocular Hypertension Treatment Study (OHTS) were noted in support of coverage for corneal pachymetry for diagnosed or suspected glaucoma and other indications (but not as a routine glaucoma screening). Review of the literature is helpful in locating private healthcare coverage positions that note documentation from research study findings, especially trade publications.</p>
Proof of Concept (POC)	<p>Proof of concept or a proof of principle is defined by Wikipedia as a realization of a certain method or idea(s) to demonstrate its feasibility, or a demonstration in principle, whose purpose is to verify that some concept or theory that has the potential of being used. A proof-of-concept is usually small and may or may not be complete.</p>
Public Healthcare Benefit Plan	<p>The Centers for Medicare & Medicaid Services (CMS) provides public healthcare coverage for items and services for over 43 million beneficiaries. The vast majority of coverage is provided on a local level, through local coverage determinations (LCD). However, in certain cases, Medicare deems it appropriate to develop a national coverage determination (NCD) for an item or service to be applied on a national basis for all Medicare beneficiaries meeting the criteria for coverage.</p> <p>Public Insurance – National Coverage Determinations</p> <p>National Coverage Determinations (NCDs) are issued by CMS to provide guidance to assist providers in submitting correct claims for payment. NCDs apply to all Medicare jurisdictions. The impetus for NCD development can come from different sectors, such as provider groups and beneficiary advocate groups, often working through legislative channels.</p> <p>NCD Additional Resources:</p>

	<ul style="list-style-type: none"> • What is a NCD? • Overview of NCD • Innovators' Guide to Navigating CMS (describes the process for determination of NCDs) • Overview of NCD and LCD <p>Public Insurance – Local Coverage Determinations</p> <p>LCDs are contractor-developed coverage policies, pertaining to services or items not addressed in National Coverage Determinations (NCDs) or program manuals. Local Coverage Determinations (LCD) provides guidance to assist providers in submitting correct claims for payment, and contain coding and utilization guidelines. Some of the important issues addressed in a LCD are:</p> <ul style="list-style-type: none"> • Which services are covered and reimbursable • How to properly code the services provided • Documentation requirements • Utilization guidelines • ICD-9 Codes that support or do not support medical necessity <p>LCD Additional Resources:</p> <ul style="list-style-type: none"> • What is a LCD? • Listing of LCDs • Innovators' Guide to Navigating CMS (describes the process for determination of LCDs) • Overview of NCD and LCD <p>For example, some LCDs include references that serve as the basis for decision of coverage. For example, one LCD for Corneal Pachymetry notes two publications (Gordon and Brandt) from the Ocular Hypertension Treatment Study (OHTS) as support for coverage of pachymetry as well as a trade publication (Parrish) article that summarizes the OHTS findings.</p> <p>Review of NCDs and LCDs is required to locate evidence that findings from a research study were used as support for implementation of a coverage decision. Review of the literature can also be helpful in locating evidence of clinical implementation from research study findings noted in NCDs AND LCDs.</p>
Publication Metrics	<p>Publication metrics are unique to publications (usually journal articles) that are available in electronic format. Many journal publishers and digital repositories have tools that allow for tracking of use of a particular publication. Some journals and digital repositories also offer additional use features such as ranking compared to other publications, number of times printed, number</p>

	<p>of times emailed, number of times downloaded, whether it was reviewed, and if the work has been cited by another publication. Features vary among publishers and digital repositories with each using different methods and software for assessment. Results from a publisher and a digital repository for the same publication may vary. Assessment of publication use statistics is contingent upon the vendor/source of the online content. Two sources of online content include digital repositories and journal publishers.</p> <p>One example of a journal publisher that provides article level statistics is Public Library of Science (PLOS). Article-Level Metrics from PLOS include:</p> <ul style="list-style-type: none"> • Article usage statistics - HTML page views, PDF downloads and XML downloads • Citations from the scholarly literature – currently from Web of Science, PubMed Central, Scopus and CrossRef • Social bookmarks - currently from CiteULike and Connotea • Comments – left by readers of each article • Notes – left by readers of each article • Blog posts – aggregated from Nature Blogs, Bloglines and ResearchBlogging. • Ratings – left by readers of each article <p>Another form of article level publication metrics are rankings per significance by various resources such as Faculty of 1000, Essential Science Indicators, ScienceDirect Top 25, and Science Watch.</p>
Publications	<p>Publications include journal articles in peer-reviewed journals, research monographs such as technical reports, newsletters, articles in trade publications, books, and book chapters, with peer-reviewed journal articles being the most common means of research output. Some research studies also provide supplemental (unpublished) materials such as specimens, images or slides related to journal articles; with some studies posting supplemental materials on the website of the research study.</p>
Quality Measure Guideline	<p>According to the National Quality Measures Clearinghouse, a quality measure is a mechanism that enables users to quantify the quality of a selected aspect of care by comparing it to a criterion. Quality measure guidelines usually cite references from a research study whose findings were used to support the recommendations as noted in the guideline. Quality measure guidelines can be issued by governmental agencies, medical specialty society or professional organizations or by other sources such as a not-for-profit organization.</p> <p>Quality Measure Guidelines – Governmental Agency</p> <p>An example of a governmental agency that issues quality measure guidelines is the Centers for Medicare and Medicaid Services.</p> <p>Additional Resources:</p>

- [CMS Quality Measures Development Overview](#)

Quality Measure Guidelines – Specialty Organizations

In addition to government agencies, medical specialty society or professional organizations that focus on a specific area of health care also produce quality measure guidelines. Medical specialty society guidelines are usually found on the website of the issuing organization but many are also noted in the [National Quality Measures Clearinghouse](#) database.

One example of a specialty organization that issues quality measure guidelines is the [Physician Consortium for Performance Improvement](#) (American Medical Association). The American Medical Association (AMA)-convened Physician Consortium for Performance Improvement (PCPI) is committed to enhancing quality of care and patient safety by taking the lead in the development, testing, and maintenance of evidence-based clinical performance measures and measurement resources for physicians.

Quality Measure Guidelines – Other

Guidelines are also produced by organizations not affiliated with a governmental or specialty organization. These guidelines are usually found on the website of the issuing organization but many are also noted in the [National Quality Measures Clearinghouse](#) database.

National Committee for Quality Assurance

The [National Committee for Quality Assurance](#) (NCQA), a nonprofit organization that sets voluntary coverage standards for healthcare organizations, uses the [Health Plan Employer Data and Information Set](#) (HEDIS) to measure health-plan performance. HEDIS is the most widely used “report card” system comparing health care plans across different dimensions of performance.

Development of a HEDIS measure includes conducting an extensive literature review of the proposed measure “to find supporting documentation of the importance, scientific soundness and feasibility.”

Additional Resources:

- [HEDIS Measure Development Process](#)
- [Desirable Attributes of HEDIS](#)
- [HEDIS Life Cycle](#)

Quality of Life	Quality of life is a broad term that is defined by the National Library of Medicine as a generic concept reflecting concern with the modification and enhancement of life attributes, e.g., physical, political, moral and social environment; the overall condition of a human life.
Reprint Requests	Some journals provide reprints of journal article publications in print format for authors to disseminate to their colleagues or to others upon request. Other journals allow authors to disseminate a specific number of reprints in electronic format (PDFs) via email.
Research Impact	<ul style="list-style-type: none"> • Research impact “describes the effects and outcomes, in terms of value and benefit,” as a result of research outputs. (See the Primary Health Care Research & Information Service’s “Understanding and Measuring Research Impact”). Examples of impact outcomes include indicators that demonstrate: <ul style="list-style-type: none"> • Research productivity • Scientific impact • Collaboration patterns • Publication practices • Extent of interdisciplinary research • Citation impact • Contribution to the knowledge base • Change in understanding of a disease, disorder or condition • Implementation of policy or legislation • Change in clinical or research practice • Enhancement of community health • Economic benefits
Research Methodologies	Methodology is defined by Merriam-Webster as a body of methods, a particular procedure or set of procedures. The concept of research methodologies includes conceptual frameworks, scientific analysis methods, and algorithms.
Research Output and Activities	Research outputs and activities are products and/or activities resulting from basic or clinical biomedical research.
Research Studies/Ancillary	<p>There are instances where the knowledge gained as a result of a research study allows for additional research studies that expand on the research findings in related or ancillary areas. For example, the Ocular Hypertension Treatment Study (OHTS), identified a number of possible risk factors related to development of primary open angle glaucoma. As a result of the OHTS findings, seven ancillary research studies that expanded on these findings were identified.</p> <p>Identification of ancillary research studies that expand on research generated by a previous study is largely contingent on the personal and anecdotal knowledge of the investigators. Knowledge of other investigators working in similar areas of scientific research is recommended in order to learn of new research projects that expand on a previous research project, especially so for</p>

	<p>bench studies.</p> <p>One possible means of locating ancillary studies is to locate similar studies and find any supporting documentation that acknowledges the contributions of a particular research study.</p>
Research Studies/New	<p>Just as there are instances where knowledge gained from a research study results in future research studies that expand on the original research findings, there are studies that focus on previously unexplored areas that were identified as a result of the original research study. For example, the Ocular Hypertension Treatment Study (OHTS) was the first research study to demonstrate that lowering eye pressure can delay and possibly prevent primary open-angle glaucoma. As a result of the OHTS finding, one new research study that focused on eye pressure was identified. Identification of new research studies that expand on research generated by a previous study is largely contingent on the personal and anecdotal knowledge of the investigators. Knowledge of other investigators working in similar areas of scientific research is recommended in order to learn of new research projects that expand on a new findings from a research project, especially so for bench studies.</p>
Research Studies/Renewed	<p>Renewed research studies are studies that receive continued funding support.</p>
Reviews	<p>A review is defined by EMBASE as a publication of a significant review of original research, usually with an extensive bibliography. Reviews serve as evidence of knowledge transfer in that they add to the body of knowledge about a given disease, disorder, or condition. Reviews can also be very helpful in determining whether a finding from a research study has resulted in clinical applications. Reviews are not the same as a meta-analysis or a systematic review. See Meta-Analyses and Systematic Reviews for more information.</p> <p>One example of a review is a work devoted to highlights of discoveries/advancements in a field of study. An article published in Archives of Ophthalmology, "The 100 most frequently cited articles in ophthalmology journals" by Ohba, et al., outlined a series of top cited papers published in ophthalmology journals, one of which was an article from the Ocular Hypertension Treatment Study. While citation counts alone do not denote significance, the article outlined the advancements in the field of ophthalmology based on the top cited articles.</p> <p>Another review is "Application of new ophthalmic technology in the pediatric patient: Pediatrics and strabismus," published in Current Opinion in Ophthalmology:</p> <p>In adult patients, measurement of the central corneal thickness (CCT) has become standard of care for patients with known or suspected glaucoma. In the Ocular Hypertension Treatment Study [2], the CCT was found to be a strong predictor for the development of glaucoma, with patients having corneas thinner than 555 µm having a three times greater risk than those with thicker corneas . . . it has become the standard of care to perform pachymetry measurements on all children with or suspected of having glaucoma. [Source: Hutcheson, Kelly A. Application of new ophthalmic technology in the pediatric patient: Pediatrics and strabismus. Current Opinion in Ophthalmology, September 2007;18(5):384-391.]</p>

Risk Factors	Risk Factors are defined by the National Library of Medicine as an aspect of personal behavior or lifestyle, environmental exposure, or inborn or inherited characteristic, which, on the basis of epidemiologic evidence, is known to be associated with a health-related condition considered important to prevent.
Social Media	Social media communications are alternative and informal means of disseminating information that is primarily web-based and involves the use of different software and media types. Social media types include Twitter, blogs, Facebook, etc.
Software Applications	Software is defined by the National Library of Medicine as sequential operating instructions for a particular problem or function to be run on a digital computer.
Spin-Off Company	A Spin-Off Company is the creation of a company based on the research findings (intellectual property) of a research study.
Standard of Care	Standard of Care is defined by the National Library of Medicine as the minimum acceptable patient care, based on statutes, court decisions, policies, or professional guidelines.
Standards	Wikipedia defines standards as a formal document that establishes uniform engineering or technical criteria, methods, processes and practices.
Start-Up Company	A Start-Up Company is the creation of a company funded by a university for the purpose of testing new technologies to determine commercialization feasibility
Subject Headings/Thesauri	<p>Subject headings and thesauri are examples of specific and precise terms or descriptors created by a publisher/vendor or agency for a particular subject.</p> <p>One example of subject headings produced by an agency is the National Library of Medicine which is responsible for Medical Subject Headings (MeSH). Staff at the National Library of Medicine revise and update MeSH annually based on new terms as they appear in the scientific literature or in emerging areas of research, and from other sources. The National Library of Medicine also encourages submission of suggestions for new terms.</p> <p>An example of a thesaurus produced by a publisher/vendor is Elsevier's Life Science Thesaurus, EMTREE. EMTREE has a record of updating drug terminology in response to the needs of user groups with hundreds of new terms added to EMTREE each year. Some recent terms added to EMTREE are micro RNA (2004), small interfering RNA (2004), nanomaterial (2007) and molecular therapy agent (2007).</p> <p>If a research study resulted in a new term or phrase, then it may be added to a list of subject headings and/or a thesaurus. If so, the publisher/vendor or agency can be contacted to obtain documentation of what sources were used to justify adding the new term or phrase.</p> <p>Examples of medical subject headings and thesauri include:</p> <ul style="list-style-type: none"> • CINAHL Subject Headings

	<ul style="list-style-type: none"> • EMTREE Thesaurus • Library of Congress Subject Headings (LCSH) • Medical Subject Headings (MeSH) • PsycINFO Thesaurus
Systematic Reviews	<p>According to the Cochrane Library, a systematic review identifies an intervention for a specific disease or other problem in health care, and determines whether or not this intervention works. To do this authors locate, appraise and synthesize evidence from as many relevant scientific studies as possible. They summarize conclusions about effectiveness, and provide a unique collation of the known evidence on a given topic, so that others can easily review the primary studies for any intervention.</p> <p>Systematic reviews differ from other types of review in that they adhere to a strict design in order to make them more comprehensive, thus minimizing the chance of bias, and ensuring their reliability. Rather than reflecting the views of the authors, or being based on a partial selection of the literature, (as is the case with many articles and reviews that are not explicitly systematic), they contain all known references to trials on a particular intervention and a comprehensive summary of the available evidence. The reviews are therefore also valuable sources of information for those receiving care, as well as for decision makers and researchers. Systematic Reviews are not the same as a meta-analysis or a review. See Meta-Analyses and Reviews for more information.</p>
Testimony/Witness	The National Library of Medicine defines testimony as the presentation of pertinent data by one with special skill or knowledge representing mastery of a particular subject.
Training Materials	Training materials include materials or guidance created for a specific population group related to a topic. One example of guidance generated from ergonomic-based research studies is guidance on best practices for carpenters to avoid injury resulting from repetitive motion or lifting.
Website of Research Study	<p>It is common for research institutions to develop websites for research projects and studies. Some large multi-centered clinical studies have a centralized website, with links to each center location. Investigators from bench studies may have a laboratory website devoted to a number of current research projects along with links to publications and related resources. There are several means of tracking use of the website such as number of page views, origin of site visitors by country, number of unique visitors. Another means of assessing knowledge transfer is to document the number of requests for more information from the public and from health care providers/researchers.</p> <p>For example, the Ocular Hypertension Treatment Study (OHTS) created a website that includes links to publications, a risk calculator, conference abstracts, clinical information and related resources.</p> <p>Examples of metrics for usage of a website include:</p> <ul style="list-style-type: none"> • Returning Visitors • First Time Visitors

- Unique Visitors
- Page Loads
- Origin of Site Visitors by Country
- Visitor Length

Another form of assessment related to a website is to track the number of requests received from consumers and/or health care providers and researchers for more information. Documentation by research study investigators of requests for more information is recommended.