UMC Utrecht

Guide for reviewers/evaluators that use the UMC Utrecht indicators for impact

"We need less research, better research, and research done for the right reasons."
Doug Altman. The scandal of poor medical research. BMJ, 1994

"It has been estimated that 85% of research is wasted, usually because it asks the wrong questions, is badly designed, not published or poorly reported."
The Lancet series 'Increasing value, reducing waste', 2014

The purpose of this new evaluative framework is to move away from output-based, summative evaluation and steer in the direction of process-based or formative evaluation. This follows from the view that scientific research in the UMC Utrecht should be evaluated on societal impact and not just on scientific excellence. It means that an evaluation should not just focus on output or 'deliverables' or other scientific end-products. The evaluation should also appreciate how research aims to create societal impact.

In the evaluation it should be recognized that creating impact is always 'work in progress' and that the organization of research is always in state of flux. Also, it should be recognized that creating impact may take longer than the scope of the evaluation. This justifies, even requires, an evaluative approach that values the efforts to organize research in such a way as to maximize impact.

This brings structure and process of scientific efforts to the fore. Because even if we recognize that impact may take a long time to occur, we can still identify the factors that increase the chances of research having impact. In our view, these factors come down to: research should address important and relevant questions; stakeholders should be involved in identifying these questions and in making 'the next step'; and methods and infrastructure should be state of the art.

The current evaluative framework aims to show how well research programs (or research themes or research groups) are organized to create impact. The categories (structure, process, outcomes) with associated goals and suggested indicators contain many elements that are well-known from previous evaluations. However, the structure provided here aims to stimulate dialogue about how to improve the structure and process to create impact instead of holding researchers accountable by quantifying research output. We believe the overarching question evaluators/reviewers should keep in mind is "why are you doing this research" instead of "what have you measurably produced".

On behalf of the committee 'Indicators for impact',
Marieke Schuurmans, professor of Nursing Science, UMC Utrecht
Rinze Benedictus, Research Office staff advisor, UMC Utrecht
Utrecht, May 2016

Format Impact indicator evaluation pilot. The period under review is 2013-2015. Indicators should reflect the situation in that period.

	Category	Goals	Suggested indicators (the unit of assessment is free to add relevant, local indicators)	Unit of assessment: {unit name and program}
1. Structure	1.1 Leadership & culture	- The unit of assessment shows responsible leadership and is characterized by a culture that gives leeway to all group members to fully and visibly exploit their talents - Leadership responsibilities are shared among staff members - The unit of assessment fosters a culture where lessons are learned from successful and less successful projects - The research culture in the unit of assessment is characterized by a high regard for internal, external and interdisciplinary collaboration	a. Talent management is based on assessments and/or portfolio management and/or 360 degrees feedback cycles b. Description of how leadership responsibilities are shared among staff members c. Leadership stimulates activities to enhance visibility of all group members d. Demonstrable, structural evaluation of projects and identification of risk and success factors	EXAMPLES a. Managers/supervisors in our unit use 360 degrees feedback cycles to inform the annual assessment interview ('beoordelingsgesprek'). b. In our unit, staff members have different responsibilities, for instance with regard to organizing research meetings, participate in teaching, etc. The different responsibilities are clear for all members of the team. c. Invited lectureships are distributed amongst group members involved in the research line, if applicable. Authorship is based on actual contributions, the department head is not automatically last author on all papers from the department. d. Both successful and less successful projects are internally evaluated and the lessons learned are discussed during departmental meetings
	1.2 Collaborations with stakeholders	The unit of assessment collaborates with a wide range of stakeholders: patients; patient organizations; public and/or private parties; (international) research groups	a. Description of stakeholders b. Overview of meetings held with stakeholders c. Demonstrable interest of stakeholders: staff exchange; shared publications; public-private partnerships; shared IP; memberships of advisory councils or other manifestations of collaborations with public parties	EXAMPLES a. In our unit we collaborate with patient organizations X, Y and Z, with company C and with international scientific partners Lab1, Lab2 and Lab3. b. Representatives from patient organizations X and Y talk four times a year with researchers from group G. Representative from patient organization Z is member of the research program advisory board that meets once a year. Our scientific and industrial partners we meet regularly in user committees. c. We published together with international group G a number of papers, there is also a visiting professor from that group. Researchers from our unit are part of the advisory board of patient organization X. Our researchers also participated in formulating a research agenda

				with patient organization Y.
	1.3 Continuity & infrastructure	▪ The unit of assessment has ample access to research facilities and both continuity and potential growth ('critical mass') is sufficiently secured	a. Description of own infrastructure and other resources b. Description of financial situation and expected developments c. Description of staff composition and expected developments	EXAMPLES a. Our lab possesses machine X, with support from technicians. b. Research is currently funded by grants c. Information about staff composition will be provided centrally by the Research Office # of scientific staff; Post-docs; PhD students; Total research staff Support staff; Visiting fellows; Total staff -The newly instated professor that starts next year will bring funding for a postdoc and two PhDs -We expect that the current number of PhD students will fall in the next years as we focus on other type of grants

	Category	Goals	Suggested indicators	
2. Process	2.1 Setting research priorities	▪ The unit of assessment has a mission and the mission-derived targets guide the work of those working within the unit of assessment ▪ The research and research-related activities of the unit of assessment are inspired by questions that all staff members find important and relevant ▪ Stakeholders are involved in setting research priorities	a. Provide the mission, a text that answers the question why the unit does what it does b. Description of the questions that are being pursued and how the answers will help us further. The questions might for example relate to an "unmet medical need"; relate to a biomedical or healthcare problem; or might involve a new and promising technology or research method; etc	EXAMPLES a. Through internationally recognized and societally well-embedded research our unit adds to the improvement of the health of patients with diseases X, Y and Z. b. The disease burden of diseases X, Y and Z in terms of 'quality adjusted life years' is not very high, but the unique UMC Utrecht
	2.2 Posing the right questions	▪ How research questions relate to existing knowledge is well described and this knowledge is transparently incorporated in the choices made ▪ Stakeholders are involved in formulating the main research questions	a. Demonstrate how the main research question fits in with existing knowledge, for example by referring to (systematic) reviews; to (multidisciplinary) roadmaps or to research agendas b. Describe which stakeholders were involved, and how, in formulating research questions	EXAMPLES a. Together with patient organizations, funders and research institutes a 'research agenda' or roadmap has been developed for this field. Our unit brings its specific expertise to this agenda. b. Our research program annually meets with patient representatives from the diseases we study to discuss our research lines. For several grants we involved
	2.3 Incorporation of next steps	▪ Part of every research project is a section for 'the next step' that describes what to do when the project delivers positive results ▪ The stakeholders needed to make 'the next step' are known and committed ▪ The dissemination of results is (also) aimed at translation to possible users	a. Possible users of research findings are demonstrably involved in the project, e.g. other (clinical) research groups, general practitioners, nurses, small and medium enterprises, pharmaceutical and medtech companies, etc b. Presence of a dedicated 'business developer' or other demonstrable support for innovation and valorization c. Funding from companies, charities, patient organizations, health insurers; etc d. Membership of (guideline) committees, policy panels; lectures for policy makers and other stakeholders; publications in "grey literature"; coverage in general media; etc	EXAMPLES a. In project X we have collaborations with multiple stakeholders b. In our unit there is a dedicated business developer that helps researchers make connections with industry. c. In our unit we rely on a diversity of funders, in cases we combine public-private funds to strengthen our valorisation efforts. d. In our unit we emphasize the importance of dissemination to a broad range of possible users, for each project there is a combination of strategies such as described in d. We published recent results in professional literature and gave lectures for a professional society.
	2.4 Design, conduct, analysis	▪ The research questions are feasible and are pursued using optimal and efficient design ▪ Statistical expertise is incorporated in design and analysis of studies ▪ Analyses are transparent	a. Description of statistical and methodological support b. Number of DEC and METC applications; c. If available: include results from JCI research tracers	EXAMPLES a. In our unit we have structural collaboration with statisticians and/or methodologist, they are involved in all projects. b. If available, provide the number of DEC and

		▪ Research, especially by junior researchers, is adequately supervised	d. If applicable: include results from ISO9001 audits.	METC applications the unit has c. If available, link to the intranet website where the report can be found.
	2.5 Regulation and management	▪ The unit of assessment promotes open data and reproducibility	a. Availability of datamanagement plans b. Publication of raw data; or the availability of data for external use c. Pre-registration of protocols (both in pre-clinical and clinical research); d. Reproduced publications and/or reproduction efforts; e. Clinical trial registration and publication	EXAMPLES a. Projects in our unit have a datamanagement plan (indicate where they are stored) b. Our unit stimulates and enables the publication of raw research data (if available, provide link to example and and stores data in an organized way to enable re-use by external researchers. c. Our unit stimulates the registration of protocols for clinical trials, also for preclinical research (if available, provide link to example). d. Research of our unit has been reproduced by international colleagues (if available, provide reference). Our unit engages in reproducing important findings in our field (if available, provide reference). e. All clinical trials that are instigated from our unit are registered and the results are always published (if available, provide reference).

3. Outcomes (based on Standard Evaluation Protol 2015-2021)	3.1 Research products for peers	Describe the three most important research products for peers, consisting of key publications other forms of research output, such as scientific/scholarly books, instruments, infrastructure, intellectual property, datasets, software tools or designs that the unit has developed; number of dissertations	EXAMPLES - Key publications - Researchers from our unit set up a patient cohort - Researchers developed a bioinformatics tool
	3.2 Research products for societal target groups	Provide the three most important examples of research products for societal target groups, e.g. reports (for example for policymaking); articles in professional journals for non-academic readers; other outputs (instruments, infrastructure, intellectual property, datasets, software tools or designs that the unit has developed) for societal target groups; or outreach activities, for example lectures for general audiences and exhibitions.	EXAMPLES - Researcher X co-wrote a policy report used by the government - Research Y created a dataset availble to other researcher - Researcher Z was invited on a television show to explain his/her research or as an expert in the field
	3.3 Use of research products by peers	Provide the three most important examples on how research products are being used, e.g. in terms of citations for selected articles; the use of datasets, software tools, etc. by peers; use of research facilities by peers	EXAMPLES -One of our papers from last year (plus reference), gathered X citations or downloads -Colleagues from a foreign research institute used our assay or our dataset
	3.4 Use of research products by societal groups	Provide the three most important examples of use of research products by societal groups, e.g. implementation of new treatments/acceptance as standard of care (also by health insurers); incorporation of products in guidelines; use of research facilities by societal parties; projects in cooperation with societal parties; contract research	EXAMPLES -Provisionary reimbursement of new treatment by Zorginstituut -Professional society changes treatment guideline based on research by our unit
	3.5 Marks of recognition from peers	Provide the three most important examples of recognition from peers, e.g. science awards/scholarly prizes; research grants awarded to individuals; invited lectures; membership of scientific committees, editorial boards, etc.	EXAMPLES -Researcher X received a prize from a scientific society -Researcher Y received a prestigious personal grant from a national funder
	3.6 Marks of recognition from societal groups	Provide the three most important examples of marks of recognition from societal groups, e.g. public prizes, appointments/positions paid for by societal parties, membership of civil society advisory bodies; valorisation funding	EXAMPLES -Prof. X advises the minister of Health about health care policy -Associate professor Y is member of the Health Council -Researcher Z received a prize from patient organization X