International Agency for Research on Cancer

World Health Organization

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KEY PERFORMANCE INDICATORS (KPIs)
FOR THE AGENCY

What are Key Performance Indicators (KPIs)?

1.   *"KPIs represent a set of measures focusing on those aspects of organizational performance that are the most critical for the current and future success of the organization. KPIs are rarely new to an organization. They have either not been recognized or were gathering dust..."* (1).

2.   Individual researchers are assessed and evaluated throughout their careers by various measures such as peer review, external review, etc. KPIs may be interpreted as the application of performance assessment at the institutional level.

3.   KPIs provide data that allow us to evaluate progress towards key institutional objectives or a strategic direction. KPIs are not meant to be all-encompassing—they should be selective and flexible.

4.   The proposed KPIs for IARC will translate the Medium-Term Strategy into specific indicators to measure whether the goals of the strategy are being met. They will be time-limited although of differing duration. All KPIs will inform stakeholders of what they need to know about the continuous process towards the achievement of critical institutional goals. KPIs will also provide a snapshot of strategic objectives at different points in time.

Acceptance of KPIs

5.   The "official" development and implementation of KPIs signals a shift in the Agency's culture and will affect staff at all levels. Rather than being accepted as indicators providing information to assist and measure progress towards strategic institutional goals, there is a risk KPIs may be misinterpreted as another layer of administration, accompanied by more work and pressure to perform.

6.   When researchers and their work are individually assessed, they identify transparency, communication and flexibility as key elements which influence their engagement in the assessment process (2). The same key elements are relevant to ensure the engagement of all Agency staff in the KPI implementation process.

7.   In fact, the introduction of KPIs presents an opportunity to re-engage IARC staff in the *Mission* and *core values* of the Agency. Their introduction also emphasizes the importance of the Medium-Term Strategy. The identification, communication and implementation of the KPIs play an important role in strategic planning, in translating strategy into action, and in evaluating performance (3).

8.   To facilitate wide acceptance of and contribution to the successful achievement of KPIs, the following points should be emphasized:

1.   The development and implementation of KPIs at the Agency necessitates clear communication regarding their role and importance;

2.   Transparency and a participatory process will assist in bringing staff on board;

3.   Performance standards (criterion) for measuring levels of achievement of the KPIs should be communicated early in the process.

Process

9.   There are several possible approaches to the process of implementing KPIs. One involves broad consultation and deliberation by staff. A complementary approach relies upon the input of key personnel involved in specific areas of activity e.g. publications or training, to identify KPIs derived from strategic institutional documents. This group of key personnel is then implicated in the refinement of KPIs, their implementation, communication and measurement of progress towards their achievement. The implementation also of course implies advice from the Scientific Council and adoption by the Governing Council of the Agency.

10.   Communication about the KPI process must address issues such as:

1.   Why KPIs are being introduced;

2.   How KPIs will be developed;

3.   How KPIs will be used;

4.   What KPIs will not be used for (1).

11.   The facilitation of both approaches may be supplemented by external experts, and both approaches must have the process and the planned KPIs validated by the stakeholders.

Identifying appropriate KPIs

12.   "*The key to selecting measures and indicators is asking thoughtful questions about how important accomplishments can be measured in an understandable manner with data that can be collected using a reasonable amount of resources*" (4).

13.   One of the challenges of identifying appropriate KPIs is selecting what to measure. The KPI should provide data that allow us to evaluate progress towards a strategic goal. The priority for IARC is to focus on measures that are linked to our overall mission, core activities and/or the Medium-Term Strategy. KPIs can then be used to set targets and indicate trends along the way.

14.   The following pertinent questions may help to inform the selection of KPIs, their performance standards, the collection of data and subsequent measurement:

1.   Is it related to the mission, core activities or Medium-Term Strategy?

2.   Is it sustainable over a number of years?

3.   Is it qualitative or quantitative?

4.   Is it objective?

5.   Can it be communicated and understood widely?

6.   Are the data for measurement easily available, or will data collection require significant developments, new applications, financial investment or technical support?

7.   Which individuals, groups or sections will be responsible for providing the data to measure specific KPIs?

8.   Is the information upon which the KPI is based verifiable—can the results be replicated? (4;5)

Are the KPIs SMART?

S   Specific

M   Measurable

A   Achievable

R   Relevant, Realistic, Results oriented

T   Time-based (4)

15.   KPIs should be able to provide useful feedback for all interested parties showing progress towards achieving institutional goals. Relevant and specific KPIs may come from a variety of sources. For the Agency, they are ideally based upon the Medium-Term Strategy. The progress towards the achievement of KPIs should be measured at regular intervals. Time may be required for data used in measurements to accrue, and the desired outcome(s) may be designed to be spaced over several years, or achieved by a specified date. KPIs should be SMART, but also simple to understand. Complex KPIs will limit their acceptance and ownership and will reduce the KPIs to tools for expert analysis and commentary. Their introduction to the Agency must therefore be considered as a process over time.

Components of KPIs

16.   Every KPI measure has several components:

    1.   the actual results of the indicator;

    2.   the target for which the indicator is striving (e.g. if the goal is to increase graduation rates from 10% to 20%, then 20% is the target);

    3.   the difference between actual results and target results; and

    4.   signal values, or benchmarks (6).

17.   Benchmarks can be based on past internal performance, or they may be comparative information from similar institutions or goals set. The difficulties with external benchmarks are the requirement of common methodologies, access to original data and the identification of comparator organizations. The Agency therefore prefers to provide its own KPI data to its governing bodies for comparison with past internal performance.

Next Steps

18.   A benefit of strategic planning is that everything does not occur at once. Some flexibility remains inherent to the planning process to be able to respond to emerging priorities. KPIs are never done—they can always be improved. Measures require fine-tuning or even changing if a better measure is developed. Consideration must also be given to existing performance measures which may not be formally called KPIs. These measures may be refined or replaced by the new KPIs.

19.   In summary, appropriate KPIs need to provide sufficient information to assess: the extent to which the Agency has achieved predetermined key or strategic targets, goals or objectives; the trend in performance over time; and the performance relative to predetermined benchmarks. The implementation of KPIs and the subsequent assessment exercises can be effective management tools that present the opportunity to correct or adjust the institutional performance for the better when necessary.

20.   To initiate discussion a number of potential KPIs have been identified (see Annex 1), drawn from the approaches previously taken at the Agency through the Scientific Coordination Office, examination of KPIs from other relevant organizations and from internal discussions both with individuals in different parts of the Agency and at the IARC Senior Leadership Team.

21.   The next step is for the Scientific Council to consider the attached set of potential KPIs. This will be followed by their further refinement through in-house discussion and consultation with Agency staff prior to presentation of a proposal for consideration by the Governing Council in May 2010. It is envisaged that this would be followed by a trial implementation followed by discussion at the Scientific Council in 2011.

Reference List

(1)   Parmenter D (2007). *Key Performance Indicators: Developing, implementing, and using winning KPIs*. Hoboken, NJ, John Wiley & Sons.

(2)   Wooding S, Grant J. (2003). Assessing Research: The Researchers' View. RAND Europe: Cambridge, UK.

(3)   Beard DF (2009). Successful Applications of the Balanced Scorecard in Higher Education. *Journal of Education for Business*, 84(5):275-282.

(4)   The Pennsylvania State University (2008). Developing Strategic Performance Indicators. *Innovation Insights*, (19):1-2.

(5)   McLaughlin G, McLaughlin J, Kennedy-Phillips L (2005). Developing Institutional Indicators: The Role of Institutional Research. *Annual Forum of the Association for Institutional Research*.

(6)   Lyddon JW, McComb BE (2008). Strategic Reporting Tool: Balanced Scorecards in Higher Education. *Journal of Applied Research in the Community College*, 15(2):163-170.

Annex 1 – Potential KPIs – Page 1/6

Research Funding
Attract extra-budgetary research funds
1.1 Total value of competitive peer-reviewed grants
1.2 Total grant expenditure
1.3 Proportion of Participating States awarding IARC funds

Attract research funds that contribute to the Agency's Mission

This indicator is a measure of the success of the institution in securing competitive grant income from major funding bodies. It also provides evidence of international collaboration through calculation of the proportion of total funding assigned to IARC and to partners in competitive peer-reviewed grants. The indicator also measures the breadth of collaboration and involvement of Participating States in extra-budgetary funding of the Agency.

Proposed measures for this indicator: amount of new awards per calendar year split by award to IARC versus total value of award; total grant expenditure per calendar year. The strategy to attract funds and be eligible for funds from Participating States is also reflected.

Definitions:

Target: Extra-budgetary grant expenditure to be 30% of total IARC regular budget. Timeframe: Annual; Source: IGO

Question:

Is IARC eligible to compete for funding from national agencies or other sources from Participating States?

Annex 1 – Potential KPIs – Page 2/6

Publications
Assess the quality and quantity of research outputs
2.1 Number of publications produced (per scientist/researcher)
2.2 Publications ranked within top 20% of their subject categories
2.3 Citation Impact
Institutional
1 or 2 papers selected by each Group
2.4 Multicentre studies and consortia coordinated by IARC

Evidence of Research Productivity and Impact

Common measures of *research productivity and impact* are often described as "bibliometric" comprising publication counts and citations based on refereed publications in reputable journals. Citations are a measure of impact on the disciplines involved.

Proposed measures for this indicator: the total number of articles published from the Agency scientists; the number of articles authored by IARC researchers published in journals ranking in the top 20% in their specialized fields; measure research impact through citations to publications, identifying those that are highly cited - the body of literature of the Agency for the year, or one or two publications per year selected by each group could be followed over a period of time; measure the number of international consortia or multi-centre studies coordinated by the Agency

Definitions:

Target: Increase per year in any of the above measure. Timeframe: annual/five-year; Source: LIB

Researcher: Professional (P) staff on the regular budget whose publication indicates an IARC address

Publication: article OR review published in a peer review journal indexed in *Web of Science*

Subject Category: As defined by *Journal Citation Reports* (*JCR*)

Citation Impact: Research measures the number of citations received per article per year. This could be done on an institutional level (all paper with authorship as defined under researcher and/or by group unit selecting one or two of their key papers per year.

Web of Science (WoS): multidisciplinary database that contains the Science Citation Index, Social Sciences Citation Index and Arts & Humanities Citation Index. It covers over 10 000 journals and its key feature is cited reference searching. The companion database is *Journal Citation Reports (JCR)* which compiles the citation data for journal *Impact Factors*. *WoS* and *JCR* would be the source of data for this indicator.

Annex 1 – Potential KPIs – Page 3/6

Describing the Cancer Burden
Increase the coverage of cancer occurrence data worldwide
3.1 Data from un- and under-represented regions included in CI5C
3.2 Establishment of regional centres of excellence for data production
3.3 Information accessibility, including electronic relating to cancer occurrence

Describing the Cancer Burden

The Agency strategy is to increase the coverage and quality of cancer registration, particularly in low and medium-resource countries through support to cancer registries. The Agency also aims to make its cancer information available to the international community.

Proposed measures for this indicator: the percentage of the population in Africa, Latin America and Asia included in the CI5 volume X; the number of regional centres where the Agency establishes centres of excellence for data production and regional training; access measures to information for GLOBOCAN and CI5, web metrics such as PDF downloads and traffic on publication sites will depend on the selection of a web analytic tool.

Definitions:

Target: increase in coverage of cancer registration. Timeframe: five years; Source: CIN

Annex 1 – Potential KPIs – Page 4/6

Education & Training - Courses
Develop an integrated and expanded programme
4.1 Total number of courses
4.2 Total number of people attending courses
4.3 Courses / training in unrepresented or under-represented areas

Education & Training - Courses

Develop an integrated and expanded programme

The development of an integrated and expanded programme provides the opportunity to educate and train cancer researchers from around the globe. The worldwide mandate of the Agency should be reflected in approaches to achieving this objective that draw on existing strengths, develop new partnerships and use new technologies where appropriate.

Proposed measures for this indicator: Development and teaching of courses; total number of people attending courses by region or sub-region; number of training courses and people attending in areas which are under or un-represented in cancer information availability.

Definitions:

Target: increase in any measure. Timeframe: five years; Source: E&T

Comments:

These measures are based on the vision of the expansion of the training and education programme. The measures cannot be strictly time based, but the outcomes are valid for laying the groundwork for the development of a new generation of cancer researchers. The training can also be seen as a facilitator for describing the cancer burden in that a proportion of the courses will be on cancer registration.

Annex 1 – Potential KPIs – Page 5/6

Education & Training – Students
Strengthen the Fellowship Programme
5.1 PhD students, number and completion rate
5.2 Post doctoral fellows, number
5.3 Percentage post doctoral fellows supported by IARC fellowships
5.4 Destination of students and post doctoral scientists after training

Education & Training – Students

Strengthen the Fellowship Programme

This indicator will be measured by the ability to successfully attract post-doctoral fellows and to obtain extra-budgetary sources of income to fund an expanded Fellowship Programme. Shifting of emphasis from the training of doctoral to post doctoral students should not decrease the *quality* of the educational experience for either group. Doctoral or post-doctoral students, their achievements and their IARC experience will be measured here, with an aim to providing a quality educational and training experience for fellows and students.

Proposed measures for this indicator: number of fellows and doctoral students; PhD percent completion in time; percent of post-doctoral fellows who are supported by IARC fellowships financed from various regular budget and extra-budgetary sources; the destination of IARC fellows in the five years following their stay at IARC.

Definitions:

Target: increase in any measure. Timeframe: five years; Source: E&T

Comments:

The educational experience should be measured in a qualitative evaluation (exit interview, survey). This type process will contribute to the knowledge of the IARC experience from the students' perspective and to the future development and refinement of education and training programmes at the Agency.

In addition, regular and periodic follow up of students and fellows *post*-IARC will provide a picture of the relevance of IARC training for further work in cancer research around the world. It will also provide continued links for future collaboration.

Annex 1 – Potential KPIs – Page 6/6

Information Dissemination
Improved availability and accessibility of IARC information
6.1 Sales of publications through WHO Press
6.2 Electronic availability of key publications
6.3 Measurement of access to publication and database sites

Information Dissemination

Improved availability and accessibility of IARC information

The Agency aims to be the definitive international point of reference for cancer information relevant to its mission. The availability and accessibility of IARC publications in electronic format and the distinct cancer information provided by IARC Groups via the Agency's web site are integral parts of this goal. The focus of this indicator would be the following publications: *Blue Books*, *IARC Monographs*, *IARC Scientific Publications*, as well as cancer information (database) sites such as DEP, P53 etc.

Proposed measures for this indicator: volume of sales of publications through WHO Press; electronic availability of key publications; retrospective electronic formatting and publishing of key publications. Web metrics such as PDF downloads and traffic on publication sites will depend on the selection of a ***web analytic*** tool.

Definitions:

Target: increased sales and access. Timeframe: annual; Source: COM; WHO Press; ITS

Usage data on IARC publication and database web sites will assist in evaluating site effectiveness and site development for optimizing the availability and accessibility of information. A number of **web analytic tools** are available for this purpose, delivered as both traditional packaged software as well as consultant/service applications. It is important that one tool be selected and used across IARC sites in order that comparable data can be gathered for this indicator and for general institutional web site analysis.

Question:

Which web analytic tool should be used?