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# BIENNIAL REPORT ON IARC EDUCATION AND TRAINING ACTIVITIES 2022–2023

**Learning and Capacity Building Branch (LCB)**
**(Branch Head: Ms Anouk Berger)**

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## A. Introduction and structure

1. Education and training in cancer research is one of the statutory functions of the Agency. For nearly six decades, IARC's Education and Training programme has made a substantial contribution to the development of capacity building for cancer research in many countries with special emphasis on low- and middle-income countries (LMICs), through the training of cancer researchers, in particular in the fields of cancer epidemiology and mechanisms of carcinogenesis.

2. The Education and Training (ETR) Group was initially established by the former Director in 2010 to enhance strategic developments in capacity building for cancer research and to create a focal point for all related activities across the Agency. A new professional position was created to lead the Group. With the restructuring linked to the implementation of the IARC Medium-Term Strategy 2021–2025, the ETR Group became a Branch within the IARC Knowledge Mobilization Pillar IV and was renamed Learning and Capacity Building (LCB). Since then, the LCB Head has functioned as co-coordinator of Pillar IV and has been a member of the IARC Senior Advisory Team on Management (SAT).

3. In addition to the Education and Training Officer leading LCB, two regular budget (RB)-funded Senior Programme Assistants manage the fellowship and courses programmes, with support from a Branch Secretary and in close collaboration with the Fellowship Scientific Officer, Scientific Directors of the Summer School modules, as well as all colleagues supervising Early Career Scientists (ECS) and/or developing learning events/resources. In October 2017, following the retirement of the Head of the Laboratory Services and Biobank (LSB), a Project Assistant moved from LSB to LCB (ETR at the time) to work specifically on an EU-funded project aiming at building biobanking capacity. This position was maintained on extrabudgetary resources throughout several biennia, to implement the eLearning strategy and related activities. In view of the international move of the position's incumbent, and to avoid a disruption of key related activities, a Learning and Capacity-Building projects coordinator and manager consultancy was offered to her until July 2024. In 2022–2023, and as per the continued increase in activities, the following short-term positions were maintained or created on extrabudgetary resources.

- Project Assistant to manage the HEAP EU-funded project and work on dissemination activities of other projects;
- Multimedia & e-Learning Assistant to work closely with the above-mentioned staff and the Training Project Assistant;
- Two clerical-secretarial positions in the first semester of 2023, to support the activities of the IARC Research Training and Fellowship Programme, including the testing of the future Business Management System, as well as the IARC Summer School 2023.

4. In view of the exponential increase of activities, to support the Branch Head and to sustain both Programmes, a Professional position was requested for the 2024–2025 IARC budget, to manage and further develop a portfolio of projects of the IARC Courses Programme, in particular the evolvement of IARC Learning, the running of core IARC courses with partners and the development of regional learning centres. Due to budget constraints, the position won't be funded on the regular budget. Incoming extrabudgetary resources obtained through collaborations with IARC scientific Branches may contribute to partly support the opening of the position in 2024.

5. The current LCB organigramme is shown in Appendix 1.

6. The LCB activities and new initiatives have followed the strategy presented and discussed during the 49th Session of the Scientific Council in January 2013 (see Document SC/49/7). Driven by the research priorities and training mandate of the Agency, the strategy has guided the evolution of IARC Education and Training activities towards the increasing use of eLearning tools, close liaison from LCB with IARC scientific Branches for advice and coordination, as well as developing partnerships with external organizations sharing the same dedication to capacity building to leverage additional support to training initiatives.

7. Suggestions from the previous review by the Scientific Council were considered while shaping the activities of the programme, such as, setting-up a mentoring programme, continue and expand the offer of webinars, or evaluate the outcomes of courses.

8. The report presents the key achievements of the IARC's Education and Training programme in 2022–2023.

9. It should be noted that whereas LCB oversees activities of the Agency in these matters, several initiatives are led by the scientific Branches.

## B. IARC Research Training and Fellowship Programme

### a) Objectives

10. The main objective of the Research Training and Fellowship Programme is to provide opportunities to researchers at different levels of their career (collectively referred to as Early Career and Visiting Scientists [ECVS]) to get trained at IARC in fields of research closely associated with the Agency's mission and research activities, as well as the participation in collaborative research projects. ECVS are supported either by project funds from IARC Branches or by IARC Fellowships.

11. The specific aims of the Programme are as follows:

- To provide postdoctoral scientists, from any country, with training at IARC in those aspects of cancer research related to IARC's mission, to build a new generation of cancer researchers and reinforce cancer research worldwide, especially in LMICs.
- To contribute to pre-doctoral training within specific agreements with Lyon universities or other institutions at national or international level.
- To attract top international cancer researchers to spend various periods of time as Visiting Scientists contributing to the Agency's programmes and to making IARC an ideal environment for education, training and exchange.
- To develop new opportunities for further professional development for ECS and other public health professionals in order to support and promote the development of cancer research and prevention, especially in LMICs.
- To ensure the quality of the training/hosting environment for trainees, students, postdoctoral and visiting scientists.

### b) Activities and results

12. As presented in Table 1 of Appendix 2, a total of 296 ECVS from 66 different countries were hosted at IARC during the biennium. This represents a 16.5% increase compared with the 2020–2021 biennium, which is directly related to increased mobility resulting from the lifting of travel and entry restrictions

imposed during the COVID-19 pandemic, as well as the end of the perturbations related to the move to the new building. An overall comparison of the 2022–2023 figures with those for the 2018–2019 biennium shows that the number of ECVS joining IARC is back to pre-pandemic levels. There is however a significant increase for postdoctoral scientists (34.5%), which can be explained by the success of scientific teams with their competitive funding applications, as well as the refocus on strategic target audiences, namely postdoctoral scientists and visiting scientists. A comparison between the numbers of ECVS arrivals in 2023 alone and pre-pandemic years (average of 2028 and 2029) shows an overall increase of 12%, indicating that one may expect even more arrivals in the next biennium.

13. As presented in Figure 1 of Appendix 2, during the biennium approximately 75% of ECVS came from IARC Participating States and approximately 45% from LMICs (55% for postdoctoral scientists). The vast majority of ECVS from non-Participating States were from LMICs (85%). Approximately 18% of the total arrivals (mostly students) are from our host country, France, alone, thanks to collaborations with local universities for the hosting of students.

- **Quality of the training/hosting environment**

14. With the growing demand for training opportunities at IARC, a crucial objective of the Agency has been to continue to strengthen the Programme in all its dimensions (policy, procedures, training experience), thus consolidating the quality of the training and environment.

15. LCB is responsible for administrative procedures relating to ECVS arrival, hosting and departure from IARC. As one person's stay can be extended one or several times, the total volume of agreements handled by LCB each year (new + extensions) was approximately 200, with related relocation/administrative support.

16. Given the continued increasing administrative burden on LCB, the system set up to streamline administrative procedures through e-workflows and launched at the end of 2021 was further implemented, with related documentation produced and briefings organized. An induction online tool for newcomers was also set up, listing the various resources that are expected to be read/completed/watched within the first month following arrival of a new ECVS. Finally, LCB has been involved throughout the biennium in the design/configuration of the future IARC Business Management System (BMS) developed with WHO. The IARC Research Training and Fellowship Programme and related contractual modalities being unique in WHO, the continuous input of the LCB Fellowship Assistant Fellowship has been particularly important, to make sure that required features will be available.

17. Relationships between LCB and other key contacts involved in the administration of ECVS at IARC continued to be strengthened during the reporting period. In particular, regular meetings were set-up with the following stakeholders to review common issues and identify opportunities for improvement of the programme: Human Resources Officer (HRO), Relocation Assistant, Staff Physician, Director of Administration and Finance (DAF) and his Office. LCB launched and has been coordinating a Working Group to review elements related to onboarding of personnel (e.g. planning the revision of the IARC Welcome Pack, solution regarding warrants for apartments, identification of banks, internal briefing sessions, etc.).

18. The improvements of the terms and conditions under which ECVS undertake activities while at the Agency, summarized in the Handbook of the Programme published in November 2017, based on the recommendations of the 2016–2017 "Internal Working Group (WG) on ECS Supervision and Policy", have been monitored by LCB, in close collaboration with the above-mentioned key players. Those

enhancements included the possibility for ECVS to have two-year duration training periods (funding permitting), to be named on grants as co-PI (under certain circumstances as PI), and to have 16 weeks of maternity leave. Stipends of postdoctoral scientists were increased. Annual and sick leave conditions were also clarified. During the reporting period, the following further enhancements were made: stipends for doctoral students and postdoctoral scientists revised; rules pertaining to outside activities (especially teaching), as well as extended sick leave clarified.

19. The IARC Postdoctoral Charter, launched in September 2011 to allow a more structured approach to postdoctoral training at IARC, was extensively revised during the reporting period. Based on the evaluation of the charter conducted in former years, an internal working group was set-up at the end of 2021 to review recommendations and suggest additional areas for improvement. Besides LCB members in charge of the IARC Training and Fellowship Programme, the working group was composed of three postdoctoral scientists, six IARC scientists with experience in supervision at the postdoctoral level (including former postdoctoral scientists), the IARC Fellowship Scientific Officer, the Human Resource Officer and the Human Resource Training Assistant. All IARC Branches were represented. The work took place in 2022 through sub working groups, comments were consolidated, and documents edited by IARC's editor. The result was presented to and endorsed by the Senior Advisory Team (SAT). Changes have been implemented from mid-2023 onwards, as follows. The charter (main document and Annex 1 – In Practice), which was extensively revised and clarified, is now signed by the supervisor when submitting the request for hosting a new postdoctoral scientist in the e-workflow (i.e. attaching the signed document), and this version is sent to the postdoctoral scientist with the letter of agreement for signature. The Annex 2 of the document describing courses and other continuing development opportunities was updated according to the current offer. Annex 3 (career development in relation to research and training) is now structured in three sections: (1) a main document that gives grounds for the upcoming discussions between the postdoctoral scientist and the supervisor, (2) an "Annual Planning and Self-Reflection Tool" that should help postdoctoral scientists to self-reflect on where they are and where they would like to be heading to, and therefore to be better prepared for the meeting with the supervisor, and finally (3) an online form, where the outcome of the annual meetings is summarized. An assignment was set up in iLearn so that automatic reminders are sent to the postdoctoral scientist and supervisor after onboarding and at regular intervals. The revised IARC Postdoctoral Charter is available here.

20. As advised by the above-described Working Group, and as an additional product of this collective effort, a supervisory good practice framework targeting all IARC personnel's supervisors is being developed and should be rolled out early 2024.

21. In addition, and as part of the IARC Postdoctoral Charter, entrance and exit interviews have been conducted with all postdoctoral scientists. Entrance interviews (~4–6 months after arrival) are an excellent opportunity to discuss potential issues and provide support as needed. Exit interviews allow identification of lines of improvement for the programme and/or feedback on planned activities, as described above. Based on the feedback received during those exit interviews, intermediate meetings have been also offered as an additional support option. Similar meetings are offered to doctoral students.

22. LCB recognized that there was also a need for support from ECS on non-scientific matters. Despite being able to ask for assistance by any of the individual focal points identified, including LCB, HRO or the Staff Physician, a need was identified for additional help to provide coordinated support in case of difficult situations (e.g. conflict, long-term sick leave impact, etc.). The Workplace Well-being Initiative (WWIn), that had been on hold since the departure of the former Staff Physician, was reinitiated in October 2023.

The WWIn team gathers information on difficult situations, analyses them, and makes recommendations to address them, as well as prevent future similar occurrences. Permanent members of the WWIn team are HRO, the IARC Staff Physician, the Head of LCB, in their capacity as the head of the IARC Training and Fellowship Programme, as well as an occupational health psychologist from the WHO Medical Services. Other stakeholders will be involved as appropriate: IARC focal points for the implementation of the WHO/IARC policy on "Preventing and Addressing Abusive Conduct", other key players engaged in the promotion of IARC values, wellbeing, health in the workplace and harmonious work environment (e.g. Occupational Health and Safety Committee, Equity and Diversity Advisory Group, Ethics Officer, etc.), as well as WHO focal points (such as the Office of the Ombudsman (OMB), WHO Staff Counsellor, WHO Clinical Psychologist, WHO Office of Compliance, Risk Management and Ethics).

23. Based on the recommendations of previous reviews, additional support for career development continued to be provided. The importance of the supervisor's guidance on the project(s), but also on career prospects is clearly mentioned in the Handbook, as an essential element of a successful doctoral or postdoctoral experience. More specifically, the supervisor's role in such matters is stressed in the revised IARC Postdoctoral Charter, with relevant associated tools (cf. above). The "job application clinic" available through the Career Prospects Portal continued to be offered by LCB. As a complement to enhancing the skills of supervisors to discuss career aspiration with the ECS under their supervision, and as recommended by the Scientific Council, the mentoring programme launched in 2021 continued to be implemented. Based on the initial needs assessment, the programme targets all IARC personnel and aims at providing a platform to share knowledge, skills, network, information and perspectives to enhance personal and professional growth. A list of volunteer mentors identified among IARC colleagues is available through the Career Prospects Portal, together with guidance and tools to set-up mentoring relationships. In view of the limited available resources, a group of volunteers representing the variety of IARC personnel and led by LCB Head has been implementing the initiative. It must be noted that this is not enough to sustain the development and monitoring of the programme and a dedicated person should be appointed to manage the programme. For example, an evaluation of the pilot phase was planned in 2023 but could not be finalized due to competing priorities of the Working Group members.

24. As a complement to the experience and competence acquired through the scientific projects and as part of the IARC Postdoctoral Fellowship Charter, LCB continued to develop the programme of internal generic skills courses. The close collaboration with HRO was pursued within the framework of the IARC Staff Learning and Development Framework developed in 2015. More than 40 instructor-led training courses were offered in 2022–2023 that were attended by more than 300 participants (Table 2 of Appendix 2). Because of the preparation for the move to the new IARC building and the period of transition after the move, the courses offered were mostly held online until the second half of 2023. In addition, ECVS accessed more than 80 online learning resources from the WHO/IARC ilearn learning platform.

25. The Agency continued to support the IARC Early Career Scientists' Association (ECSA), which was created in 2013. ECSA is open to all students/postdoctoral scientists at IARC and works in collaboration with LCB to promote opportunities for training, career development, social activities, and regular dialogue between ECS, and with LCB and IARC management. Coordination meetings have taken place between LCB and ECSA. Among other activities, ECSA organizes its annual Scientific Day to showcase the work of IARC students and postdoctoral scientists, career panels and workshops for professional development, as well as social and networking activities.

26. Relations with universities have been further strengthened in order for IARC to be recognized as a host institute for PhD students. At the local level, IARC supported the setup of a new doctoral school focusing on cancer, "Ecole Doctorale Cancérologie Biologie Santé" (CanBioS), which was launched in Summer 2023. IARC is serving on the Executive Board, as well as in the Scientific Committee. All new IARC doctoral students registered in Lyon University will be attached to CanBios, which will progressively become the unique Lyon doctoral school for IARC. This will facilitate the coordination/administrative processes, as well as the setup of joint generic courses that were suspended during the pandemic and the move to the new building. At the international level, additional students have been hosted at IARC through the agreement that was signed with the Italian Istituto Superiore di Sanità (ISS) for the joint supervision/hosting of PhD students. The Memorandum of Understanding (MoU) with Jiaotong University Shanghai was extended, to facilitate the hosting of ECVS.

- **IARC Postdoctoral Fellowships**

27. As presented in Table 3 of Appendix 2, the Agency awarded seven Fellowship extensions in 2022, six funded by the IARC RB and one by the Terry Fox Foundation. No new Fellowships were awarded that year as the 2021 Call was suspended due to budgetary constraints.

28. In order to maintain an effective programme while pursuing alternative funding, the Agency had restricted the award of IARC Fellowships to candidates from LMICs during previous biennia. This measure is of particular importance as the focus on LMICs is central to the mission of IARC, especially regarding education and training.

29. Budget decisions in May 2023 had an impact on the total number of two-year fellowships funded on the RB, which decreased from seven to six, for the 2022 Call. Consequently, and to maintain the opportunities for the best candidates, (i) one candidate who had been awarded another competitive one-year fellowship, which could not be postponed, was only awarded by IARC a one-year fellowship, and (ii) the remaining funding was combined with available extrabudgetary funding at the host Branch level to award a two-year fellowship to the first candidate on the waiting list.

30. In addition, as part of efforts to identify complementary sources of funding for the programme, negotiations with Children with Cancer UK led to a renewed agreement enabling the award of two fellowships to scientists who will carry out research on paediatric cancers or cancer in teenagers and young adults.

31. Overall, the Agency awarded nine IARC Postdoctoral Fellowships to candidates from LMICs for projects in line with the IARC MTS 2021–2025. These awards were granted after a selection process among 36 applications, 24 of which were eligible to be considered, and 17 recommended for final selection.

32. In 2022–2023, a modest research return Grant of €10 000 was also awarded to one Fellow from LMICs, contributing to establish their research activity in their own country. A new, simplified procedure was set up, based on the recommendations of the Fellowship Selection Committee. A specific call will now be launched every year in June, with a deadline in September and a review of proposals carried out by internal members of the Fellowship Selection Committee.

33. As mentioned above, in view of IARC budgetary constraints, the call for IARC Postdoctoral Fellowships was not launched in 2023 and no new IARC Fellowship will be awarded in 2024 (only extensions). Maintaining the same level of funding as previous years is critical for the IARC Fellowships Programme to keep on training future generations of cancer researchers, in particular from LMICs.

In collaboration with the Resource Mobilization and Grant Office, fund raising efforts continued. This led in 2022 to a new partnership with Children with Cancer UK and the award of two fellowships as reported above. Unfortunately, some former or potential partners were hit by the COVID-19 pandemic and could not extend/confirm their support to the Programme. Based on the confirmed eligibility of IARC to apply for EC MSCA COFUND calls under the Horizon Europe, a proposal was submitted in February 2022 but not granted. LCB is considering applying again early 2024.

34. The Scientific Council members are kindly requested to share their experience so that LCB can explore additional potential funding support avenues for IARC Postdoctoral Fellowships.

- **IARC Visiting Scientists Award**

35. As described in the IARC Director's report to the Governing Council (Document GC/63/3) and in the IARC Medium-Term Strategy 2021-2025 (Document GC/63/6A), it was decided in 2020 to discontinue the IARC Senior Visiting Scientist Award. In view of the limited resources of the Agency and of the capacity building mission of the Agency, it was indeed considered more cost efficient to convert this award into several shorter awards targeting mid-career scientists from LMICs and/or Participating States, to develop collaborative research projects with IARC, as well as to contribute to enhance their career prospects and build the capacity of their instruction through longer term collaborations initiated/strengthened via the Fellowship.

36. As per the Governing Council Resolution GC/64/R4 in May 2022 allowing for the use of the Special Account for Undesignated Voluntary Contributions to fund the award, the one 12-month Senior Scientists Award was converted into more shorter-term Mid-career Visiting Scientist Awards.

37. The 2022 Call led to the award of three fellowships. The duration is of nine, five and six months, according to the specificities and needs of the project. The selection was made among fifteen applications, nine of which deemed eligible to be considered and recommended for final selection.

- **IARC short-term Fellowships**

38. Because of shortage of funding on the side of the Union for International Cancer Control (UICC), the UICC-IARC Development Fellowship set-up in 2012 and enabling a selected number of participants of the IARC Summer School to return to IARC for a period of one month for further training and collaborative work, was not offered during the Summer School 2023. However several course participants applied to the generic UICC call over the Summer 2023 and some obtained support.

### c) Conclusion and future perspectives

39. The IARC Research Training and Fellowship Programme continues to demonstrate its relevance and efficiency in providing opportunities for deserving students and ECS from all around the world to acquire excellent training and experience in an exceptional multicultural and international environment, enhanced by the hosting of visiting scientists.

40. In the coming years, and in addition to maintaining the programme at its current level of quality, and onboarding/supporting ECVS and their host team on a daily basis, the focus of LCB will be to:

- further implement the terms contained in the Programme's Handbook and monitor the need for any modifications;

- contribute to the deployment of the new BMS, in relation to the contractual and onboarding, daily support and offboarding procedures of ECVS;
- continue to develop and sustain initiatives to contribute to enhance the training experience/career prospect of ECS, in particular doctoral students and postdoctoral scientists;
- continue to interact with and support ECSA;
- identify additional financial resources to maintain or expand training opportunities for Postdoctoral Fellowships; and
- further strengthen and/or develop the links with local and international stakeholders.

## C. IARC Courses Programme

### a) Background

41. As one of its core functions, and since its inception, IARC has been holding courses globally to contribute to lifelong learning to improve theoretical and practical skills of cancer investigators, with emphasis on researchers from LMICs. These initiatives have also stimulated collaborations with IARC.

42. The specific aims of the IARC Courses Programme are as follows:

- To stimulate research in cancer by developing individual and institutional expertise in areas of IARC competence through learning events (courses and webinars).
- To bring IARC learning and teaching resources closer to their target audiences, by developing eLearning resources and initiatives, including in various languages.

### b) Activities and Results

- **Learning events**

43. During the reporting period, IARC has continued to organize learning events in areas of IARC competence, in particular targeting individuals and institutions in LMICs. In view of the global health crisis and the move to the new IARC building, most courses were offered online. When on-site options were not possible, courses were redesigned to combine live sessions with facilitated self-learning. The IARC online teaching and learning infrastructure developed over previous years continued to provide flexibility and offer tools for IARC Branches and their collaborators.

44. Overall, during the reporting period, the Agency organized 69 courses and webinars targeting researchers and health professionals (see Table 5 of Appendix 2).

45. During the reporting period, and as presented in Table 4 of Appendix 2, the Summer Schools as well as IARC courses and webinars contributed to lifelong learning of around 3800 scientists and health professionals from many countries, in particular LMICs. This represents a 40% increase compared to the previous biennium, which can partly be explained by the number of participants to the 12 IARC Summer School 2023 public events (1597) and also reflects IARC's sustained commitment to teaching, including through innovative methods and effective partnerships to meet the increasing demand for courses in LMICs.

46. Several courses have been associated with collaborative research projects, where IARC is transferring skills needed to conduct the projects and to enable the subsequent implementation of the research findings in the countries concerned. Courses were either organized jointly between a scientific Branch and LCB or were primarily organized by a scientific Branch with the support of LCB (course design,

creation of dedicated online learning space for the course, development of online activities, guidance on conducting online activities, etc.).

47. Different course models were designed, according to needs and lasted from a few days, such as the three ChildGICR Childhood Cancer Registration online courses (in Georgia, India, and Viet Nam), and the Codificación de Tumores ICD-O-3 course, to several weeks, such as the Training of Trainers on quality assurance for cancer screening for Georgia, Latvia, and Slovakia, or even months, such as the Research Leadership training. Some events also combined a face-to-face component to focus on practice and networking, such as the IARC Summer School 2023 (see below) or the Cancer Screening in Five Continents (CanScreen5) Train the Trainers course.

*Focus on an IARC flagship course – the IARC Summer School*

48. The IARC Summer School in Cancer Epidemiology aims to improve the methodological and practical skills of cancer researchers and health professionals. In 2023, both modules – Introduction to Cancer Epidemiology, and Implementing Cancer Prevention and Early Detection – were held in a blended format described below. A brand-new Public Events Series was part of the programme, with 12 live public events successfully organized throughout the period (https://www.youtube.com/@iarclearning5527/streams), and attracted 260 to 1100 viewers per event.

49. Each module included a Part 1 (online) and a Part 2 when participants travelled to IARC to attend an intense 5-days in person session at IARC. During the Part 1 online session, in addition to recorded theoretical sequences (video and quiz) available to the participants on a dedicated online space, live sessions were scheduled and facilitated to ensure the participants engagement, to support the theoretical learning and initiate the groupwork activity guided by IARC facilitators and experts. The early initiation of the online groupwork enabled participants to get to know each other, to start interacting and the bonds formed during the online part boosted the dynamic of the highly interactive in-person session. During Part 2, practical sessions, exercises, group assignments, debates, and a site visit in one of the modules were organized to facilitate the integration of the concepts learned. The groupwork activity highlight throughout both modules, provided the opportunity to put all learnings into practice, in addition to collaborate and work together in a multidisciplinary and multicultural team. On-demand meetings were scheduled to enable participants to exchange with IARC Scientists of their choice, to receive guidance on projects and initiate contact and potential future collaborations. All the resources used to deliver the 2023 Summer School are available on the IARC Learning portal (https://learning.iarc.who.int).

50. A total of 70 cancer researchers and health professionals from 41 countries (most of which were LMICs) participated in the two modules, representing a wide variety of disciplines and nationalities, which is what makes the IARC Summer School so unique.

51. Pre-course and post-course surveys were administered to measure the impact of the course on participants' self-perceived level of confidence with regard to knowledge and skills covered in the modules. The results showed a substantial progression, which was also clearly expressed by the participants in their oral and written feedback and quotations. Participants also confirmed that participating in the IARC Summer School will have an impact beyond their own knowledge and career, the majority intending to re-use the course material to train their colleagues.

*Webinars*

52. As commented during the 53rd Scientific Council session in January 2017, webinars are a powerful way to reach out to a diversified audience. Building on former internal experience, the organization of webinar series was intensified, targeting an increasing number of professionals worldwide. Besides leading and managing some webinar series, such as the one of IARC Summer School 2023 describe above or the World Cancer Report Update Learning platform (see below), LCB is the focal point for the organization of events and provides advice and Agency-wide support. Examples of such webinars include: CIRC Série d'échanges "Cancer de la bouche : quels facteurs de risque ? Comment le prévenir ?" (Nutrition and Metabolism (NME) Branch, in partnership with the Centre Léon Bérard, Lyon); Epigenomics and Mechanisms (EGM) Branch.

53. Overall, and together with the World Cancer Report Update Learning webinar series and the Summer School public events, these sessions contributed to lifelong learning of approximately 2500 researchers and public health professionals.

- **eLearning resources**

*Infrastructure*

54. The Agency recognized a key strategic opportunity to increase its reach in education through eLearning and multi-lingual approaches. As detailed in this section of the report, an important step towards the achievement of this goal has been the further development of the infrastructure allowing the production and dissemination of an increased amount of online learning/teaching resources and hosting of learning events. In parallel, online learning and teaching resources were produced.

55. The current online learning and teaching infrastructure was built from the experience gathered through the set-up of the learning management system from 2016, allowing the design and deployment of online spaces for course participants to have access to practical information and learning resources before, during and after a training event (http://elearning.iarc.fr), as well as from the Biobank Learning platform developed in the frame of the B3Africa project (https://learning.iarc.fr/biobanking/). Launched end 2019, the IARC Learning Portal (http://learning.iarc.fr) developed by LCB and the Information Technology Services (ITS), has been the entry door to three free thematic learning platforms (Biobanking, Cancer Prevention and Early Detection and World Cancer Report Updates). It also links to the IARC WebTV (see below), including the Summer School video channel, as well as to the websites from other IARC-led projects providing information and learning material on Cancer Surveillance and on the Exposome (see below).

56. Anticipating the natural obsolescence of the IARC learning infrastructure and in view of IARC's limited resources, LCB has setup a collaboration with the WHO Academy for the development of the WHO Academy Learning Experience System (LXP), which will lead to the migration of the IARC Learning portal to the LXP. In the frame of this collaboration, LCB has provided training design expertise to support the development of the WHO Academy's LXP, including through advises on key LXP functionalities and testing of demo versions. Once ready, IARC self-paced and facilitated courses will progressively be migrated to the LXP from early 2024 onwards. To this effect, the WHO Academy team will create and maintain a dedicated Learning Space on the LXP, which will be managed by IARC autonomously. IARC will ensure editorial oversight of the IARC Learning space on the LXP and will remain owner of all IARC-authored courses hosted on its space. As such, IARC will have the flexibility to publish learning resources under different types of licenses, including creative commons licenses (cf. below), and to autonomously promote IARC learning courses hosted on the LXP. The WHO Academy will ensure maintenance and further development the LXP infrastructure, including the IARC-managed space, and provide trouble-shooting support to IARC in case of problem. Through the

collaboration with the WHO Academy, LCB has also led an IARC internal discussion to replace the existing IARC video management system (http://video.iarc.fr), which is obsolete, with associated cybersecurity risks. The mainstream Vimeo solution will be set up early 2024, and the subsequent migration of IARC videos is being prepared.

*Resources*

57. Several learning resources/programmes were designed, launched and/or translated during the reporting period.

58. Based on a combination of IARC learning material, a new self-paced learning programme "Introduction to Cancer Prevention and Early Detection" was launched (https://learning.iarc.fr/edp/courses/sp-intro-cancer-prevention-and-early-detection/). The course introduces the following concepts: cancer surveillance and the role of cancer registration in cancer control; primary and secondary prevention of cancer and strategies; measures to improve the quality of cancer screening programmes; benefit of robust health systems to support cancer control efforts. This introductory learning path was a prerequisite to apply for the corresponding module of the IARC Summer School 2023.

59. The series of modules on the European Code Against Cancer 4$^{th}$ edition, developed during the previous biennium by the Environment and Lifestyle Epidemiology (ENV) and LCB Branches in the frame of the Cancer Prevention Europe programme (CPE), was translated into five languages (French, Spanish, Hungarian, Polish and German) and deployed as an online learning programme on primary and secondary prevention of cancer, targeting cancer prevention advocates, health practitioners and promoters (https://learning.iarc.fr/edp/courses/cpe/). A comprehensive evaluation framework was designed and is being implemented. The programme is also currently being accredited from the European Accreditation Council for Continuing Medical Education (EACCME). The CPE programme has also generated great interest, with 18 055 visits (hits) on the English version since its launch. 791 users have enrolled in the programme, 428 completed at least one module, and 66 successfully completed the part of the programme currently under the process to obtain an accreditation, and which includes the first 13 modules, a level-1 user evaluation as well as a final quiz.

60. The first module of a self-paced e-learning programme on Pollution and Cancer was designed/developed and released as part of the collaboration with the European Society for Medical Oncology (ESMO) (https://learning.iarc.fr/wcr/courses/module-1-pollution/). This "Introduction to Research on Pollution and Cancer" module includes two learning sequences, a final quiz to test the new knowledge, and a certificate of completion. A particular attention was given to create an immersive and interactive environment, with professional graphic design tailored to the topic, animated images, as well as several quizzes, exercises, and case studies throughout each learning sequence. The second module of the programme, on "Ambient and Household Air Pollution and Cancer" is being developed and will be released in 2024. Through the same above mentioned collaboration with ESMO, two eLearning modules were created from the World Cancer Report Updates webinar series recordings, including short video teasers, quizzes, questions and answers: Polygenic Scores for Cancer Prevention (https://learning.iarc.fr/wcr/courses/polygenic-scores-module/); The Present and Future of Lung Cancer Screening (https://learning.iarc.fr/wcr/courses/lung-cancer-screening-module/). Since its launch in 2020, the World Cancer Report Updates learning platform has attracted over 3800 professionals from 152 countries

(registered to at least one webinar and/or to the platform). The continuation of the collaboration with ESMO for 18 additional months is being discussed (cf. below).

61. In November 2023, to mark three years of the WHO Global cervical cancer elimination Initiative, IARC launched online learning resources on cervical cancer screening in additional languages (French, Spanish, Portuguese, and Ukrainian): Atlas of visual inspection of the cervix with acetic acid for screening, triage, and assessment for treatment; Using HPV tests for cervical cancer screening and managing HPV-positive women – a practical online guide; and Atlas of colposcopy: principles and practice. These digital tools, which are freely available online aim at helping health providers to diagnose and treat cervical cancer or precancerous lesions, especially in resource-limited LMICs (https://www.iarc.who.int/news-events/launch-of-online-learning-resources-on-cervical-cancer-screening/). The English versions have generated a huge interest with 45 000 page views monthly for the Atlas of colposcopy. These resources constitute the backbone of the Comprehensive Learning Programme on Screening, Diagnosis and Management of Cervical Precancer, which was selected by the WHO Academy as part of its first learning programmes to develop/deploy and should be released in 2024.

62. The self-paced learning programme on "Improving the Quality of Cancer Screening" developed by EPR and LCB in the frame of the CanScreen 5 project, is now available in Spanish in addition to English and Russian (https://learning.iarc.fr/edp/courses/pgm-cancer-screening/). The webpage of the programme is one of the most popular pages on the IARC Learning Portal, having attracted over 16 000 visits (hits) for the English version since its launch in February 2021. As of September 2023, 625 platform users had enrolled in the course, and 133 (21%) completed all steps with success.

63. The Cancer Surveillance (CSU) Branch, in collaboration with the Global Initiative for Cancer Registry Development (GICR) regional hubs and with the support from Bloomberg Philanthropies, has been developing a series of 14 online self-learning modules on the following topics: Introduction to disease surveillance; Measuring cancer incidence, mortality and prevalence; An introduction to cancer registration; Variables; Classification and coding; Case finding; Staging; CanReg; Treatment and Follow up; Data quality; Data analysis and presentation; Data entry; Confidentiality; and Registry uses. Once completed, these learning resources will be translated into French and Spanish modules and will be made available through the GIRC website and through the IARC Learning Portal in early 2024.

64. The "Swamped?" series on managing data according to FAIR principles (Findable, Accessible, Interoperable, and Reusable) was developed through the Human Exposome Assessment Platform project (HEAP) described below (https://www.youtube.com/playlist?list=PL-Hb2W9K8uzrRrKYRrXYOZFj7_o6RXQvt). The series is an engaging introduction to FAIR data principles in five short videos, featuring interviews with the HEAP project team, and aims to improve understanding of FAIR data principles among researchers, aid adoption of best practice in data management, as well as to raise awareness of the HEAP project. The series has been used as part of the design of a blended course on the matter, which targeted IARC personnel and was successfully implemented in November 2023.

65. Another IARC module was selected as part of the first courses of the WHO Academy. The development of the Managing Infrastructure for Medical Research Learning Programme is being led by the NME/LSB Branch and should be finalized and launched by the WHO Academy in 2024.

66. The IARC Learning Portal attracts a growingly increasing audience. Since November 2019, around 4500 professionals (2806 in 2022–2023) from 168 countries have created an account on the portal to freely access the learning programmes and modules. About half of the users of the IARC Learning Portal are from LMICs.

67. As a complementary dissemination tool to the IARC Education and Training website redesigned in 2014 and being maintained throughout the reporting period (https://training.iarc.who.int/), the IARC Newsletter is a crosscutting effort to complement the website. Four editions are prepared and published each year, focusing on the fundamental or emerging priorities of the Agency (https://www.iarc.who.int/iarcnewsletter/). 5800 persons have registered to the IARC Newsletter. On average, each edition of the newsletter is opened by over 45% of recipients. The coordination of the IARC Newsletter, which had been ensured since its setup by LCB and SSR/RMO, was transferred to the Communications Team in Summer 2023.

68. With an average of 1680 visitors per day to the IARC home page and more than 30 000 downloads per year of the textbook "Cancer Epidemiology: Principles and Methods" (#4 in the list of most popular downloads even after two decades), eLearning resources produced by the Agency have the potential to reach an increasingly high number of professionals around the world. Besides continuing monitoring the use of the resources described above, it will be important to keep increasing the visibility of the IARC Learning programme. In addition to the strategies described below (cf. Leveraging the impact of IARC learning events and resources), the partnership with the WHO Academy should boost IARC Learning visibility.

*Support and joint projects*

69. In parallel to activities described above, the role of LCB as a focal point providing guidance and support, in particular regarding innovative approaches to teaching, continued to be strengthened. As described above, several IARC scientific Branches are engaged in training activities through their collaborative research projects. LCB recognized an opportunity to add value to these initiatives by bringing its expertise on training design and eLearning. As a result, and as described above, LCB has been involved in part of courses led by scientific Branches in different ways, ranging from advice/support on learning needs assessment, instructional design, organization, development/administration of online evaluation surveys and/or through the development of online spaces on the learning infrastructure. LCB has also contributed to some of the Branches' initiatives where there is a training component embedded within a broader project and has collaborated with scientific Branches for the development and running of projects.

70. Besides the Canscreen5 or CPE projects described above, a good example of such collaborations has been the Human Exposome Assessment Platform project (HEAP), a five-year project that started in January 2020 and has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 874662. Building on the success of the former B3Africa project, IARC has been part of the project consortium coordinated by the Karolinska Institute, Stockholm, Sweden, with the IARC LCB and NME/LSB Branches leading the Education and Dissemination work package (https://heap-exposome.eu/).

71. During the 2022–2023 biennium, LCB was invited to take part in three additional collaborative projects.

72. The "European Cervical Screening Quality Assurance Update" (EU CervCan QA) is a three-year project funded by the European Commission (agreement n. 101122251) that started in September 2023, under the coordination of the IARC EPR Branch. Building on the experience acquired through the above-mentioned

B3Africa and HEAP projects, LCB will lead the dissemination and education work package of the project, in close collaboration with the IARC Communications Team.

73. The "Comprehensive Cancer Infrastructures for Europe" (CCI4EU - https://cci4eu.eu/) is a capacity building three-year project funded by Horizon Europe Grant (agreement n. 101103746) that started in May 2023, under the coordination of the Organisation of European Cancer Institutes (OECI). Together with the EPR and CSU Branches, LCB is co-leading IARC's contribution, which consists of contributing to the definition of maturity criteria for comprehensive cancer infrastructures, specifically as far as screening and population-based cancer registration are concerned; taking part in/leading tailored interventions (deep dives) in selected countries; and designing/developing an online resource centre gathering capacity building interventions tested throughout the project. LCB is specifically leading the last activity.

74. The "HPV Vaccine Effectiveness Coordination Center" (CHRONOS) is a five-year project funded by Bill & Melinda Gates Foundation that started in October 2023, under the coordination of the IARC EPR Branch. The overarching objective of this proposal is to develop a sustainable and reliable assessment of HPV vaccine effectiveness across LMICs. This will be achieved through the setup of an International Coordination Center based at IARC, developing standardized methods and tools, and deploying them through a training strategy, which will be led by LCB. The work will include the development of learning and teaching material (including online modules), the design and implementation of a blended-learning curriculum to train field coordinators (who will in turn train their team), as well as the setup of a community of practice to ensure peer-based support and sustainability of the project.

- **Leveraging the impact of IARC learning events and resources**

75. As mentioned above, the IARC Learning events and resources have the potential to reach a much larger audience. Increasing the visibility of the programme and material is one of the strategies that are being pursued, through strategic partnerships such as the one with the WHO Academy or through communication activities with the support of the Communications Teams. Other strategic approaches are described below.

*Reaching out to new audiences*

76. In 2022, LCB coordinated an Agency-wide consultation to review the target audiences, as well as topics of the Courses Programme. Colleagues representing all IARC Branches and domains of teaching were consulted and concluded that the most appropriate target audiences should be (by alphabetical order): Biobank personnel, Bioinformaticians, Cancer registry personnel, Cancer researchers/Molecular biologists; Cancer researchers/Biochemists, Cancer researchers/Computational biologists, Cancer screening personnel, Community health workers, Educators, Epidemiologists, Ethical boards members, Health economists, Health promoters/Cancer advocates, Laboratory personnel, Laboratory scientists, Medical and Public Health students, Medical doctors, Midwifery professionals, Nursing professionals, Nutritionists, Oncologists, Pathologists, Policy makers, Project managers, Public at large; Public Health professionals; Social workers/counselling professionals; Statisticians/Data analyst. There were discussions on whether IARC should target the public at large. The main argument against was that IARC is missing expertise to target this audience and that it is more strategic to provide resources to "mediators" such as health promoters, cancer advocates and societies, better equipped and suited to spread messages to the targeted public. It was nonetheless acknowledged that some IARC resources and learning events are of interest to the public and that they should be accessible as self-learning or informative resources. The same consultation allowed to

confirm the broad categories of teaching: Cancer Prevention and Early Detection; Cancer Surveillance; Cancer Research Infrastructures & Methods; Research Leadership and Management. It was agreed that Evidence, Synthesis and Classification (ESC) should be included as a broad topic and, where relevant, into IARC learning resources and events. This will give visibility and support to the dissemination of ESC publications contents, processes and outcomes.

77. While some of the above-listed audiences have been "natural" targets of the programme (e.g. biobank personnel, cancer registry personnel, cancer researchers, epidemiologists etc.), others such as oncologists, are relatively new. It therefore seemed important to better understand their learning needs. Through the collaboration with ESMO described above, LCB therefore conducted a learning needs assessment. This was carried out through a survey launched at the 2022 ESMO Congress in September 2022, as well as through IARC website/social media. The survey remained open two months and allowed to collect information about learning interests and needs over 260 respondents, of which a large majority (220 respondents; 83%) was from the ESMO's network. Only a minority of respondents (14%) estimated that their practice involved sufficient prevention activities. The first-ranked barrier, experimented by 42% of the respondents, was the lack of time to access cancer prevention information and implement it. It was followed by the lack of education/training in implementing prevention activities (for 32% of the respondents) and the uncertainty about which sources of cancer prevention information are trustworthy (for 27% of the respondents). 87% of ESMO respondents estimated that they would benefit from practical information and resources about the prevention of specific types of cancer, and 85% estimated they would benefit from practical information and resources about the scope, scale, and effectiveness of screening and early detection activities for specific types of cancer. Breast, lung, and colorectal cancers clearly stood out as cancer types for which the more respondents said they would benefit from information and resources, both related to prevention and to screening/early detection. While guidelines were considered by the majority as the most useful resources, webinars (and recordings), self-paced online courses and teaching toolkits were also considered very suitable or suitable by at least 60% of respondents. The survey allowed LCB to shape activities that will be developed in the coming years as part of the renewed partnership with ESMO. To continue to broaden the reach of the programme, similar approaches will be used in the future to assess the needs of other identified audiences listed above, subject to available resources.

*Open-source teaching material*

78. In line with IARC's commitment to Open Science, and as a complementary approach to leverage the impact of the programme, LCB has embarked on the production of open educational resources, one of the pillars of open education.

79. As part of its partnership with ESMO, IARC launched a training toolkit designed to support anyone involved in transmitting knowledge and skills on cancer research for cancer prevention. It consists of a PowerPoint file, including the following: modifiable slides for lectures, with an attractive, attention-grabbing design; text that trainers can use to prepare their sessions; links to the sources of the figures, and advice on how to adapt them to the context; suggested quizzes and exercises, including instructions for trainers. The material can be used in a modular and flexible way. It can also be adapted for use in different countries or settings. The first module of the toolkit, "Rationale and Scope of Cancer Research for Cancer Prevention" was launched in September 2022. The material in this training toolkit is published under a Creative Commons licence (Attribution-NonCommercial-ShareAlike 3.0 IGO (CC BY-NC-SA 3.0 IGO), allowing reuse, adaptation/translation and publication under the same licence.

80. The teaching material of the IARC Summer School modules 2023 ("Introduction to Cancer Epidemiology" and "Implementing Cancer Prevention and Early Detection") are also being repackaged as open educational resources published under the same Creative Commons licence. This will be of particular importance in the context of regional learning centres described below.

*Regional learning centres*

81. Regional learning centres are a powerful way to leverage the impact of an institution's courses and learning resources. Based on the recommendation provided by China during the 64th IARC Governing Council in May 2022, the Agency and the National Cancer Centre China have collaborated to set up a first regional centre, the IARC-NCC China Learning Centre. As formalized through a MoU in May 2023, this joint centre, funded and sustained by NCC China will include: i) the organization of the IARC Summer School's modules in China, targeting researchers and health professionals from China and South-Eastern Asian countries, ii) the joint development of new learning modules, and iii) the organization of train the trainers courses in the framework of initiatives such as GICR, CanScreen5 or primary prevention programmes. The first course of the IARC-NCC China Learning Centre (Introduction to Cancer Epidemiology) is planned for early 2024. The course will follow exactly the same structure as the course in Lyon, i.e. a blending learning format using the IARC learning infrastructure and contents for the online part, followed by a face-to-face session in China focused on practice, group work and networking. Sessions will be based on IARC open teaching resources as described above, adapted and translated into Chinese. The evaluation of the course will be carried out by LCB.

82. A similar partnership is being developed with the INCA Brazil and the University of Sao Paolo, in collaboration with other national entities. The first course (Introduction to Cancer Epidemiology) is planned for 2025, targeting health professionals from Brazil, as well as from Asian and African Lusophone countries. In this instance, it is planned that online material will also be translated into Portuguese.

83. The set up of other similar regional partnerships will be considered, subject to availability of financial resources in LCB to launch and coordinate activities implemented with partners.

### c) Conclusion and perspectives

84. During the reporting period, IARC continued to organize and successfully run initiatives that both stimulated capacity building for research on cancer globally and contributed to developing local expertise in cancer epidemiology and prevention, particularly in LMICs.

85. The shifts initiated in previous years continued, with emphasis on increased use of online learning and the development of eLearning resources, close liaison with IARC scientific Branches for advice and coordination, as well as developing partnerships with external organizations sharing the same dedication to capacity building in order to leverage additional support to training initiatives.

86. In the coming years the focus of LCB will be to:

- further identify resources to sustain the IARC Learning infrastructure, in partnership with the WHO Academy;
- continue to produce/publish eLearning and teaching material in English and other languages;
- pursue the organization of webinar series, with recorded sessions/material posted on IARC Learning for free access;

- pursue collaboration with and support to Branches for the design, development, organization and/or evaluation of education and training materials, courses or programmes;
- identify funding resources to continue to run the IARC Summer School on a regular basis;
- sustain partnerships for the maintenance of regional learning centres and develop additional centres as possible;
- in line with Open Science principles, implement open education, more specifically through open educational resources; and
- monitor the use of eLearning resources and impact of learning events.

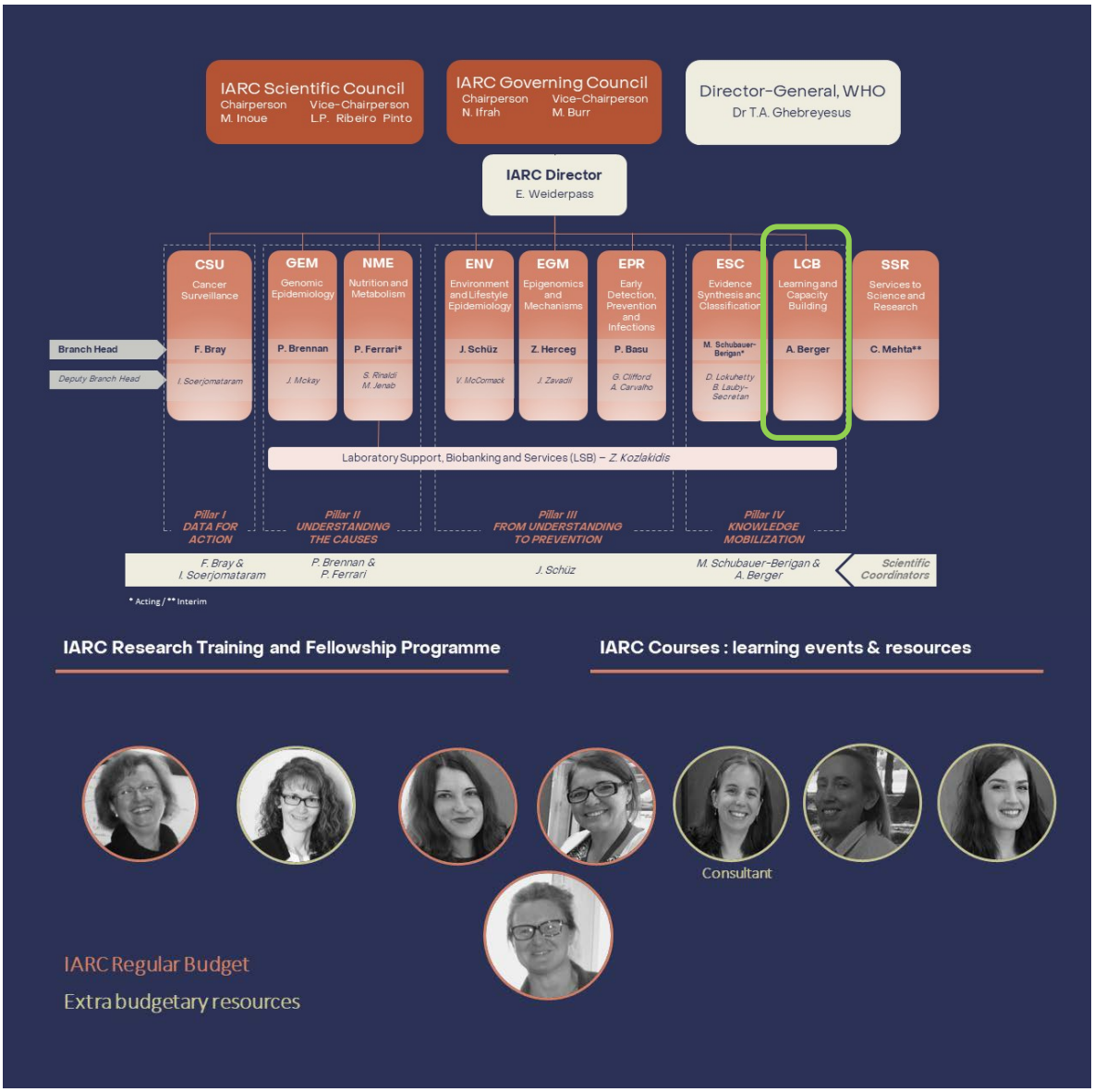
## D. Questions to the Scientific Council

87. This report has described key achievements of the IARC Education and Training programme in 2022–2023, based on the strategy presented and discussed during the 49th Session of the Scientific Council in January 2013. The Scientific Council is asked to comment on the activities and achievements of the programme as well as suggesting areas for further enhancement or which may be reduced in emphasis.

88. The maintenance of the programme and part of future developments are dependent on the mobilization of funding resources. The Scientific Council is therefore asked for advice on seeking additional resources from, for example, Participating States and Foundations, in order to finance the maintenance and expansion of Education and Training.

*Appendix 1 – Structure*

LCB organigramme



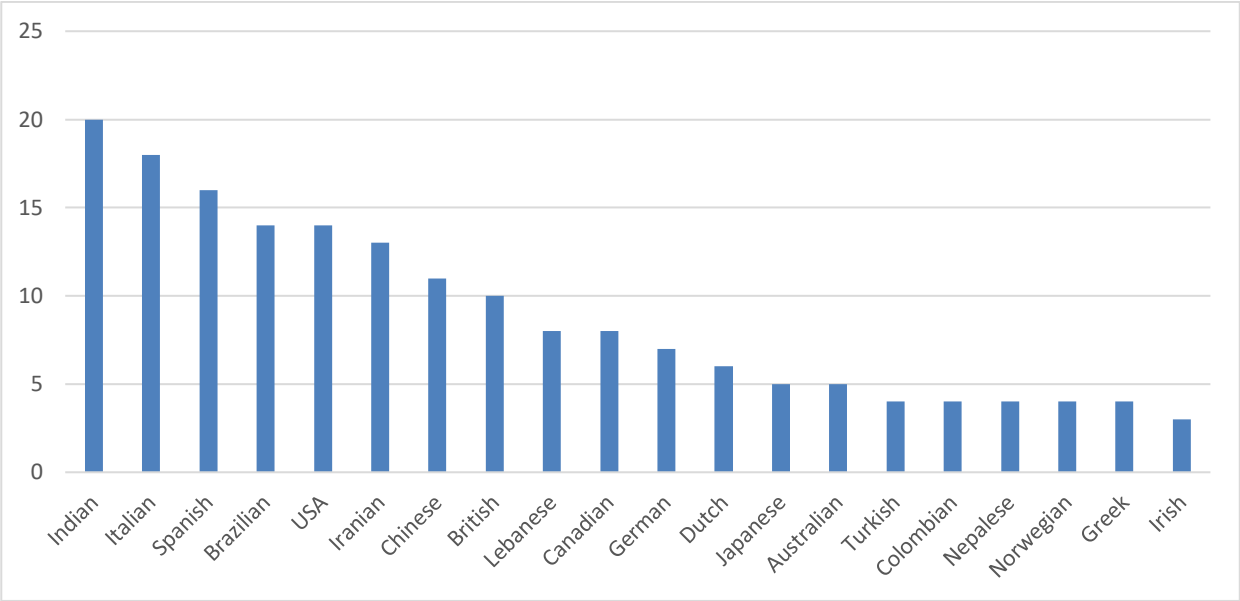
*Appendix 2 – Key Performance Indicators and other relevant data*

**Table 1: Number of trainees, students, postdocs or visiting scientists, beneficiaries of the IARC Research Training and Fellowship Programme, 2018–2023, by category***

| Category | Number 2018–2019 | Number 2020–2021 | Number 2022–2023 |
|---|---|---|---|
| Studentships, of whom: | 73 | 44 | 35 |
| *Trainees at the pre-bachelor level* | 22 | *8* | *3* |
| *Master's students* | 51 | *36* | *32* |
| Continuing professional development trainees | 35 | 22 | 33 |
| Doctoral students | 43 | 45 | 35 |
| Postdoctoral scientists (including IARC Fellows) | 82 | 86 | 113 |
| Visiting Scientists | 35 | 32 | 52 |
| Senior Visiting Scientists | 27 | 25 | 28 |
| **Total, all categories** | **295** | **254** | **296** |

* As of 1 December 2023

**Figure 1: Nationalities of ECVS mostly represented within the IARC Research Training and Fellowship Programme, 2022–2023***




*With over 50 ECVS, French nationality was not represented in the graph, to keep a readable scale.

**Table 2: Generic courses for Early Career Scientists (ECS), 2022–2023**

| **Research Skills Development** | **Writing Skills** |
|---|---|
| FAIR Data Principles in Practice<br>Fundamentals of Implementation by the University of Washington<br>Introduction to Bayesian statistics<br>Introduction to multiple imputation for missing data<br>Learn R facilitated training<br>Science Implementation vs intervention: basic considerations<br>R Shiny for beginners | Effective scientific posters<br>European Commission (EC) grants: insights from an expert evaluator<br>Grant writing fundamental considerations<br>Publishing in scientific journals<br>PubMed: search efficiently<br>Predatory publishing<br>Systematic reviews search methodology<br>Writing competitive grant applications |
| **IT Skills** | **Communication Skills** |
| Meeting rooms audio-visual equipment<br>REDCap for Surveys<br>REDCap for Data Collection<br>SAMI (SAmple Management at IARC) training sessions: Beginner and Advanced<br>Take IT Easy: 10 sessions in Ms Teams, One Drive, Office 365, One Note. | Effective Interpersonal Communication Techniques<br>Information is Beautiful<br>Science Communication<br>The Power of Visual Storytelling |
| **Career Management / Development** | **Leadership and Management** |
| Creating your Personal Brand (WHO)<br>Emotional Intelligence at Workplace Masterclass series (WHO)<br>WHO EQ Café<br>Networking for Results (WHO)<br>Motivation and Focus<br>Motivation and Well-being<br>Working Together Remotely<br>Workshop on CV Skills and Competency Based Interviews (WHO) | Creating and Sustaining High Performance<br>Giving and receiving feedback<br>No excuse webinar series related to sexual misconduct (WHO)<br>Research Leadership Training Course<br>Time Management workshop (WHO)<br>Values Based Decision Making and Communication<br>WHO Bystander Training in the Workplace<br>Workshop on Preventing and Addressing Abusive Conduct (WHO) |
| “First aid at work” sessions in French and English were offered throughout 2023. | |

**Table 3: IARC Fellowships, 2008–2023**

| Year | No. of IARC Fellowships awarded* | No. Fellows from LMICs |
|---|---|---|
| 2008** | 11 (6 + 5) | 11 |
| 2009 | 8 (4 + 4) | 8 |
| 2010 | 10 (6 + 4) | 6 |
| 2011 | 13 (8 + 5) | 5 |
| 2012 | 19 (12 + 7) | 11 |
| 2013 | 18 (10 + 8) | 11 |
| 2014 | 21 (13 + 8) | 12 |
| 2015 | 22 (10 + 12) | 13 |
| 2016 | 17 (7 + 10) | 10 |
| 2017 | 14 (7 + 7) | 12 |
| 2018 | 7 (0 + 7) | 6 |
| 2019*** | 7 (7 + 0) | 7 |
| 2020*** | 7 (0 + 7) | 7 |
| 2021*** | 7 (7 + 0) | 7 |
| 2022*** | 7 (0 + 7) | 7 |
| 2023*** | 9**** (9 + 0) | 9 |

*Post-doctoral Fellowships (new + second year renewals), including IARC-Australia and IARC-Ireland Fellows (2011–2014).

**In 2008 and 2009, only candidates from LMICs were eligible to apply. From 2010, candidates from LMICs or with research projects benefitting to LMICs have been able to apply.

***In 2019, 2021 and 2023, only candidates from LMICs were eligible to apply.

****Including two fellowships of one year each.

**Table 4: Learning events (courses and webinars) 2022–2023**

| Course title | Location | No. participants | External collaborations |
|---|---|---|---|
| **Cancer Surveillance** | | | |
| CanReg5 training course for Japan, Rep. of Korea, Barbados, and Trinidad and Tobago (2022) | Online | 25 | |
| ChildGICR Childhood Cancer Registration for India, Bangladesh, Bhutan, Nepal, and Sri Lanka (2022) | Online | 31 | St Jude Children's Research Hospital, Memphis, USA<br>Cancer Institute (W.I.A), Chennai, India |
| ChildGICR Childhood Cancer Registration for Vietnam, Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, and Thailand (2022) | Online | 32 | St Jude Children's Research Hospital, Memphis, USA<br>Vietnam National Cancer Institute, Hanoi, Vietnam |
| ChildGICR Childhood Cancer Registration for Armenia, Azerbaijan, Georgia, the Republic of Moldova, Türkiye, and Ukraine (2023) | Online | 31 | St Jude Children's Research Hospital, Memphis, USA<br>National Center for Disease Control and Public Health (NCDC), Tbilisi, Georgia |
| GICR Basic Cancer Registration Course for Ecuador, El Salvador, Guatemala, Panama, Paraguay, and Peru (2022) | Online | 22 | SOLCA Quito; PAHO VirtualCampus |
| GICR Canreg5 training course for Latin America (2022) | Online | 41 | National Cancer Institute Colombia |
| GICR Codificación de tumores de mama y de tracto genital femenino for Latin America – countries (2023) | Online | 78 | National Cancer Institute Colombia |
| GICR Codificación de tumores ICD-O-3 for for Latin America - Argentina, Chile, Uruguay (2023) | Online | 24 | National Cancer Institute Argentina |
| IARC-KNCC Joint Summer School on Cancer Registration: Principles and Methods (2022 and 2023) | Blended Rep. of Korea | 29+23 | GICR, Korean National Cancer Center (KNCC) and its Graduate School of Cancer Science and Policy (GCSP) |
| IARC-WHO EMRO Workshop on Cancer data use to inform cancer control planning in the EMR countries (2023) | Egypt | 30 | WHO EMRO |

| Course title | Location | No. participants | External collaborations |
|---|---|---|---|
| **Cancer Prevention and Early Detection** | | | |
| CanScreen5 Train the Trainers - African Region - Face-to-face (2022) | United Arab Emirates | 20 | American Cancer Society (ACS), UK Medical Research Council (MRC), Friends of Cancer Patients (FoCP) |
| CanScreen5 Train the Trainers - Community of Latin America and Caribbean States (CELAC) Three groups: A and C Spanish, B English (2023) | Blended Miami and Panama | 18+35+30 | American Cancer Society (ACS), UK Medical Research Council (MRC) |
| CIRC Série d'échanges "Cancer de la bouche : quels facteurs de risque ? comment le prévenir ?" (2023) | Online | 40 | Centre Léon Bérard, Lyon, France |
| Colposcopy training programme (2022) | India | 15 | Nargis Dutt Memorial Cancer Hospital |
| IARC Summer School: Implementing Cancer Prevention and Early Detection (2023) | Blended IARC, Lyon | 35 | |
| IARC Summer School – 12 public events (2023) | Online | 1597 | |
| IFCPC-IARC Training course in Colposcopy and the prevention of Cervical Cancer – OSCE (2022-2023) | Online | 50 | The International Federation of Cervical Pathology and Colposcopy (IFCPC) |
| Preconference workshop of the European Public Health Conference - Cancer prevention for a sustainable future: an interactive workshop for public health specialists (2023) | Face-to-face | 20 | Cancer Prevention Europe including Cancer Research UK (CRUK) |
| The World Code Against Cancer – for Youth Ambassadors for the European Code Against Cancer. Digital Summer School (2022) | Online | 60 | Association of European Cancer Leagues (ECL) |
| Theoretical and hands-on training in study protocol, ethical considerations, and procedures (cervical cancer screening) for EASTER Project (2023) | Zimbabwe | 20 | EASTER Project partners |
| Training and quality assurance on colposcopy (2022) | Zambia | 16 | The International Federation of Cervical Pathology and Colposcopy (IFCPC) |
| Training of Trainers on quality assurance for cancer screening for Georgia, Latvia, and Slovakia (2023) | Online | 24 | |
| Training on Clinical Breast Examination for Libya (2023) | Tunisia | 6 | |

| Course title | Location | No. participants | External collaborations |
|---|---|---|---|
| Training on use of a portable breast ultrasound for the detection of breast abnormalities (2022 and 2023) | Blended India | 10+45 | BARC Hospital, India |
| World Cancer Report (WCR) Webinar Series: Polygenic Scores for Cancer Prevention (2022) | Online | 391 | European Society for Medical Oncology (ESMO) |
| WCR Webinar Series: The Present and Future of Lung Cancer Screening (2022) | Online | 166 | ESMO |
| WCR Webinar Series: Liquid Biopsy-Based Biomarkers for Cancer Detection and Monitoring (2023) | Online | 243 | ESMO |
| **Cancer Research Infrastructure and Methods** | | | |
| Environmental and occupational cancer | Online | 15 | School of Public Health of the University of Yale |
| Epidemiology of breast cancer<br>5th International Course on Breast cancer by Institut Curie (2022) | France | 25 | Institut Curie |
| Epigenomics and Mechanisms of Human Carcinogens for the EMGS Webinar and Online Workshops (2023) | Online | 60 | Environmental Mutagenesis and Genomics Society (EMGS); Education, Student, and New Investigator Affairs (ESNIA) |
| Evidence Gap Maps (EGM) training programme (Online Series)<br>WCT EVI MAP project (2022-2023) | Online | 25 | University of Newcastle |
| IARC Summer School: Introduction to Cancer Epidemiology (2023) | Blended IARC, Lyon | 35 | |
| Precision Oncology Summer School - Liquid biopsy biomarkers: Rationale, technological developments & clinical applications (2022) | France | 35 | European Scientific Institute (ESI), Archamps |
| Precision Oncology Summer School - Optimising personalised cancer diagnosis and treatment (2023) | France | 35 | European Scientific Institute (ESI), Archamps |
| Training for Pathology Laboratory Technicians (2022) | India | 16 | Cachar Cancer Hospital |
| Training on biobanking best practices (2023) | Online | 30+25 | Mansoura University, Egypt<br>University of Alessandri, Italy |
| Training on Biobanking best practices and preanalytical factors for the Annual Egyptian Biobanking conference (2023) | Online | 32 | BCNet |

| Course title | Location | No. participants | External collaborations |
|---|---|---|---|
| Training on Biobanking best practices and preanalytical factors (2022 and 2023) | Czech Republic Armenia and IARC | 8+20+5 | ARICE study |
| Training on Biobanking best practices and preanalytical factors (2023) | China | 12 | CDC China |
| Training on Biobanking best practices and preanalytical factors for the ASEAN Biobank Feasibility Study (2023) | The Philippines | 12 | BCNet |
| Training on Biobanking best practices and preanalytical factors (2022 and 2023) | Guatemala Tanzania | 8+8 | IIPAN/NICHE Study; BCNet |
| Training on Biobanking in relation to pathology and clinical practices at AORTIC conference (2023) | Senegal | 5 | BCNet |
| Training on laboratory safety for the University of Shanghai (2023) | Online | 45 | Shanghai Jiao Tong University, School of Public Health |
| Training on laboratory safety for the ASEAN Biobank Feasibility Study / The Philippines (2023) | Online | 12 | BCNet |
| Training on laboratory safety and toxicology (2023) | Online | 25 | National Quality Control Laboratory of Drug and Food, Indonesia |
| Training on untargeted metabolomics for non-lab scientists (2022) | Online | 40 | Mount Sinai School of Medicine, Columbia University, and Imperial College London |
| Training on Urine Sample collection in HPV Study Protocole (2022) | Zimbabwe | 35 | University of Zimbabwe, Clinical Trials Research Centre |
| Training on Urine Sample collection in HPV Study Protocole (2023) | Laos | 15 | Mother and Child Health Center, Ministry of Health, Lao PDR |
| **Research Leadership** | | | |
| Research Leadership Training (twice in 2022) | Online | 21+29 | Mobilize Strategy Consulting |

**Table 5: Learning events (courses and webinars) organized by IARC 2012–2023 (including Summer School)**

| Year | No. courses organized | No. different countries where courses held | No. courses in LMICs | No. participants |
|---|---|---|---|---|
| 2012 | 9 | 4 | 3 | 312 |
| 2013 | 12 | 7 | 6 | 425 |
| 2014 | 17 | 14 | 12 | 576 |
| 2015 | 24 | 14 | 11 | 647 |
| 2016* | 36 | 23 | 19 | 1410 |
| 2017 | 32 | 16 | 15 | 1324 |
| 2018 | 26 | 14 | 11 | 763 |
| 2019 | 28 | 18 | 15 | 1083 |
| 2020 | 16 | ** | ** | 868 |
| 2021 | 21 | ** | ** | 1851 |
| 2022 | 24 | ** | ** | 1145 |
| 2023 | 45 | ** | ** | 2695 |

*Note: Figures from 2016 slightly differ from those provided in the Director's report to the Governing Council (Document GC/59/2), as some updates were received by Groups in the meantime.

**Note: Those indicators cannot be measured as, since 2020 the vast majority of IARC learning events are conducted online or in a blended format.