



**MONOGRAPH**  
SARIS no. 7

RESPONSIBLE  
RESEARCH SERIES

# Women's Advancement and Leadership in the Biomedical Research Centres of Catalonia II

Bringing about change





## AUTHORS

Maite Solans<sup>1</sup>, Paula Adam<sup>1</sup>,  
Esther Vizcaino<sup>1</sup>, Núria Radó<sup>1</sup>,  
Pavel Ovseiko<sup>2</sup>, Eduard Güell<sup>3</sup>,  
Federica Righi<sup>4</sup>, Núria Gavalda<sup>4</sup>,  
Constanza Jacques Aviñó<sup>5,6</sup>,  
Azucena Bardaji<sup>7</sup>

<sup>1</sup> Àrea de Recerca, Agència de Qualitat i  
Avaluació Sanitàries de Catalunya  
(AQuAS), Unidad Asociada al CSIC

<sup>2</sup> Radcliffe Department of Medicine,  
University of Oxford

<sup>3</sup> INGENIO (CSIC-UPV)

<sup>4</sup> Vall d'Hebron University Hospital -  
Institute of Research (VHIR)

<sup>5</sup> Fundació Institut Universitari per a la  
recerca a l'Atenció Primària de Salut Jordi  
Gol i Gurina (IDIAPJGol)

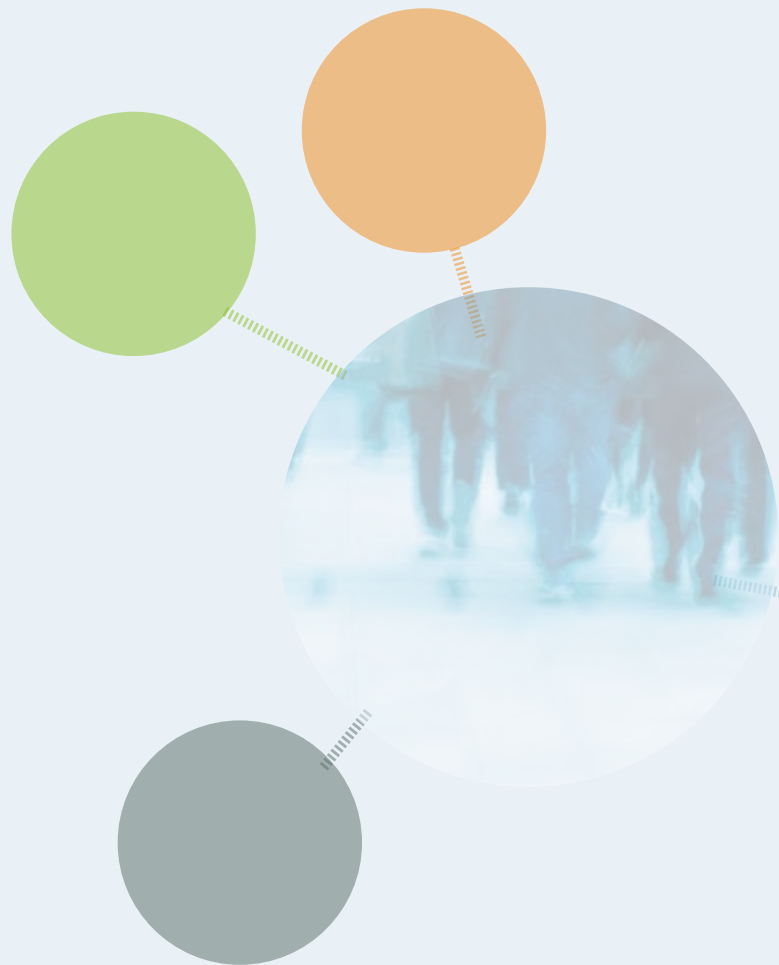
<sup>6</sup> Universitat Autònoma de Barcelona  
(UAB)

<sup>7</sup> Barcelona Institute for Global Health  
(ISGLOBAL)

The SARIS monographs are written for decision-makers, professionals, and non-specialists. The aim is to analyse topical issues in biomedical research in order to stimulate and foster reflection. The present document is part of the "Responsible Research" series, which addresses the interaction between research and society.

## ACKNOWLEDGEMENTS

The authors would like to thank all the speakers and participants of the Summit for Women's Advancement and Leadership in Health Research celebrated on the 22nd of October 2019 in Girona. This document aims to reflect the richness and diversity of views that emerged during this summit. The authors gratefully acknowledge Ignasi López Verdeguer, Joan Marsh, Mara Dierssen, Robert Fabregat, Maria Granell, Marta Segarra, Carmen Vela and Raquel Yotti for providing their knowledge and expertise in the summit. The authors are grateful to the participants of the summit for their valuable comments, and very especially to Reyes Grases, Emma Torrella and Anna Ribas for their special participation. The study was supported by "la Caixa" Foundation.



## FOREWORD



In a previous monograph we illustrated the gender challenge in the Catalan biomedical research centres with different phases of the ‘vicious cycle’, finding some inequalities in career advancement and development, positions of publications authorship, access to competitive funding and decision-making positions. There is a general agreement that promoting gender equality at all levels contributes to achieving excellence and efficiency. For this reason, the Agency for Health Quality and Assessment of Catalonia (AQuAS) organised the **Summit for Women’s advancement and leadership in health research** with the support from “la Caixa Foundation”. The Gender Summit was held in Girona in October 2019 and gathered delegates/leaders from biomedical research centres, policy-makers of the Catalan health research system and internationally recognized experts in women’s leadership and gender equality in science. Influential global female science leaders presented best practices and leading policies across European and international research systems. At this summit, AQuAS presented nominal data for the ‘gender vicious cycle’ in the 19 biomedical and health research centres of Catalonia, also presented in the SARIS Monograph series<sup>1</sup>. The participants discussed and proposed a range of possible actions to promote gender equality and leadership at different levels of the research ecosystem. The summit culminated in the signing of a letter of commitment, the Hypatia of Alexandria Charter, by the 19 directors of the Catalan biomedical research centres to develop action plans to accelerate women’s advancement and leadership as well as to integrate the gender dimension in research content. Major funders such as Horizon Europe, Instituto de Salud Carlos III and the Catalan legislation now require Gender-Equality Action Plans (GEAPs) and the reflections of this monograph can help Catalan organizations to develop GEAPs via the Hypatia Charter.

This monograph aims to summarize the reflections and actionable insights from the Girona Summit. The monograph focuses on incentive actions identified and a collective commitment for bringing about change. It is our hope that this monograph will inspire stakeholders of the Catalan Health Research system to create a collective commitment and develop specific actions.

**Montse Moharra**  
Acting Director  
Agency for Health Quality and Assessment  
of Catalonia (AQuAS)

**Robert Fabregat**  
General Director of Health Research  
and Innovation  
Department of Health. Government  
of Catalonia

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# Women's Advancement and Leadership in the Biomedical Research Centres of Catalonia II

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## EXECUTIVE SUMMARY

New demands for biomedical research centres are related to gender balance in research teams, gender balance in decision-making, integrating gender in research, and the implementation of Gender-Equality Action Plans (GEAPs).

Several approaches for the new demands and challenges for gender equality were proposed in the Girona Summit. The approaches are related to: analysing gender equality issues, removing unconscious bias through cultural awareness, improving research by integrating a gender perspective, fostering women's career advancement and development, ensuring gender balance and transparency in decision-making positions, modernising policies and management practices, and

representing the points of view of each stakeholder (individual, research centre, funding agency and policy-maker). Although not exhaustive of all possible options, the value of these approaches is being formulated on the basis of the experiences of the delegates of the Catalan research centres.

The Hypatia of Alexandria Charter was proposed, discussed, endorsed and signed by the 19 centres of health and biomedical research of Catalonia, and the policy-making and assessment responsibilities of the Health Department of the Catalan Government. The Hypatia of Alexandria Charter includes the following 12 principles.

A summary of the Hypatia Charter is:

### We, the health and biomedical research centres acknowledge:

**1** Research cannot reach its full potential unless it benefits from the talent of all

**3** Individual initiatives need to align with new demands from policy makers and tools

Therefore, we commit:

**5** To address the loss of women across the career pathway and in the senior roles

**7** To remove obstacles faced particularly by women at major points of career development

**9** To promote sustainable structural and cultural changes to remove systemic barriers (e.g. unconscious bias, stereotypes)

**11** To support researchers to take responsible approach on gender and sex perspective in research and innovation

**2** Advancing gender equity and demands comprehensive and genuine commitment, particularly from senior roles

**4** Gender inequality is just an expression of insufficient representation of diversity in science

**6** To tackle the gender pay gap

**8** To address the consequences of labour contract interruptions and labour market rigidities

**10** To take the opportunity of the new gender policy priorities to engage in a genuine implementation of Gender Equality Action Plans (GEAP)

**12** To take action to advance in women's representation and the inclusion of any form of diversity

To be effective and transformative, commitment might not be build up in isolation. Sharing experiences and mutual learning from peers might be useful. Also important, commitment from policy-makers, policy institutions, funding agencies and publishes are needed.

## THE NEW DEMANDS ON GENDER EQUALITY

Major demands of scientific funders and policy-makers are: balance in research teams and decision-making positions, responsible integration of sex and gender in research and implementation of GEAP

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Specific demands to promote gender equality in the centres have been required by the Catalan (CERCA and Health Department), Spanish (ISCIII) and European (HSR4R) policy level. They demand the concerted efforts of multiple stakeholders over a sufficient period of time: the government and policy-makers who set the agenda, the leaders and staff of the biomedical research centres, and those who peer review and evaluate these actions and policy interventions.

Since the 7th Framework Programme in research, the **European Commission's (EC)** research policy includes focus on gender issues in an array of contexts and perspectives. Nowadays, EC regulations establish that 'Horizon 2020 (H2020) shall ensure the effective promotion of gender equality and the gender dimension in research and innovation content'<sup>2</sup>. This is pursued through three main objectives<sup>3</sup>: 1) Fostering **gender balance in research teams** in order to address the gaps in the participation of women; 2) Ensuring **gender balance in leadership decision-making** in order to reach the EC's target of 40 % of the under-represented sex in panels and groups (50 % for Advisory Groups) and 3) **Integrating gender/**

**sex analysis in research** and innovation content. The EC ensures that each advisory group in the work programs' preparation includes at least one expert with gender expertise. At this regard, there is high-level group on gender mainstreaming chaired by the EC<sup>4</sup>. Furthermore, trainings on gender dimension in research proposals are eligible costs in H2020. In the next framework program Horizon Europe<sup>5</sup>, gender will be strengthening in research as established in the European Parliament legislative resolution of April 17, 2019. Main challenges for Horizon Europe on gender are, among others, ensuring cross-wise gender analysis in all areas<sup>6</sup>; incorporating sufficient funds for the specific general area on research projects on gender equality; incorporating sufficient funds for strengthening gender prioritization in research institutions; and upgrading the gender dimension in participation rules, evaluation criteria, gender experts. Also, the Commission will introduce new measures to strengthen gender equality in Horizon Europe, such as the possibility to require a gender equality plan from applicants<sup>7</sup>.

In Catalonia, the article 28 of the **Catalan Effective Equality Law** of 2015<sup>8</sup> states that in research programmes the eligible candidates shall include at least **40 % of women in research teams**. It also states that women shall lead male dominant research areas, and research proposals shall include gender perspective and be gender oriented. The fact is, nevertheless, that little action has been taken until 2019, at least in the biomedical research area. In 2019, the research programme of the **Department of Health PERIS (named after the Strategic Plan for Health Research and Innovation)** stated for the first time that the contents of the research

proposals had to address gender responsibly and **included the gender perspective in the assessment tools**. This action was taken without much publicity, training or supporting tools both to applicants and to reviewers. AQuAS carried out a retrospective analysis to illuminate to what extent funded projects were gender-blind in a research programme on mental health, and according to the analysis of 72 proposals' abstracts, only 19 % were considered gender sensitive or gender specific. This pilot showed that there were huge difficulties to determine how (or whether) gender was addressed in the project proposals, so an informative and formative campaign was perceived to be needed to accompany this application if the PERIS programme was meant to promote changes.

The biomedical research centres in Catalonia have **open, transparent, merit-based, and equal opportunity recruitment system and career**

**development tracks** as requested by the **CERCA** 'accreditation' and assessment system. Equally important, the hospital-based centres that seek 'accreditation' from the **Institute of Health "Carlos III" (ISCIII)** will need to demonstrate the same values and present an ongoing **Gender-Equality Action Plan (GEAP)**, periodically assessed by an intramural commission. This is described in the guidelines published by order of the Ministry of Science on April 12, 2019<sup>9</sup> and following the mandate of the 12 article of the Real Decree 279/2016. At a higher policy level, the **European Commission** is also increasing the focus of its funding programmes on the need for **gender equality across all scientific domains**. From the Responsible Research and Innovation (RRI) concept, which stated gender equality as one of the five pillars, to the Horizon 2020 and Horizon Europe where gender equality and diversity is at the heart of the programmes.

## POTENTIAL APPROACHES TO MAINSTREAM GENDER EQUALITY IN THE RESEARCH SYSTEM

The previous monograph of this series<sup>1</sup> presented nominal data from each biomedical and health research centre on the different aspects of the gender 'vicious cycle'. Evidence suggests progress has been slow for gender equality in research and a need for more action has come to light. On the one hand, the underlying factors of the 'vicious cycle' reinforce each other, but on the other, there is a lack of time and resources to transform the often

Approaches to advance in gender equity might call for coordination and cooperation between organisations and training

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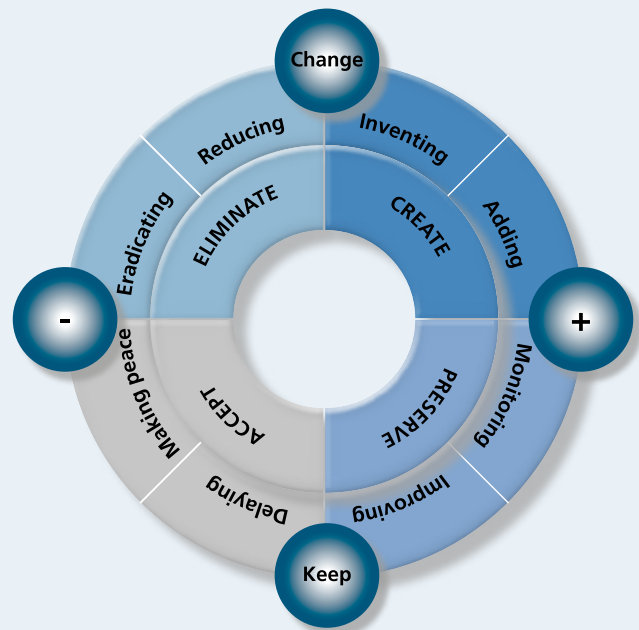
complex gender equality balance into something applicable, as stated during the Girona Summit.



## “ THE WHEEL OF CHANGE

Introducing changes in organisation is not straightforward. There is a whole literature about change management and a general consensus that effective changes need planning and a fair estimation of consequences and side effects. Aspects related to organisational culture, individual beliefs, path dependency, stakeholder's analysis, etc. are some of the aspects to take into consideration for a successful approach to gender equity.

Among the above-mentioned approaches, some require comprehensive changes, and some are more straightforward, although there are not two equal organisations. An understanding and clarity of the reasons for implementing an approach among involved stakeholders is needed, and also an anticipation of the depth and breadth of the approach or change. Framing the approach and anticipating consequences can help. There are a



number of tools than can help in developing and implementing the changes, the most known of them is the 'wheel of change'.

Adapted from model **Marshall Goldsmith**  
<https://discoveryinaction.com.au>



In the Summit of Girona, the following challenges were discussed:

- Lack of monitor and analysis of the dynamics and reasons behind gender inequality
- Limited policies, resources and practices related to gender equality issues
- Gender bias and stereotypes in research contents
- Gender inequalities in career advancement after the PhD, including relevant positions of publications authorship
- Equal access to leadership positions
- Unawareness of unconscious bias behaviours

Committing the research systems with gender equality open up a huge range of opportunities and challenges. Approaches will depend on the points of view of stakeholder, cultural values, context specificities, and role in the research system.

No change is simple. But when it is needed, it is best to face it with coordination, cooperation, training and good management. The approaches presented here apply to different stakeholders (individual, research centres, policy-makers / funding agency), and represent the issues emerged during the Girona Summit. The list of approaches is not comprehensive, does not represent a systematic set, and the approaches are not developed. Rather, they are intended to be a starting point for the next steps to be considered by the health research system of Catalonia.

To help identify relevant approaches for a particular issue, we have classified the approaches in two ways: according to which stakeholder groups could be interested, and according to how to solve the above-mentioned challenges.

# MONITORING AND ANALYSING GENDER EQUALITY

To understand the dynamics and reasons behind gender inequality should be in place before starting any action in order to recognize what is happening. In the first place, it is necessary to gather data. Equally important is the fact that progress needs to be measured and there can be the possibility to benchmark against other centres. Finally, new approaches need to demonstrate a return on the investment made.

To understand and visualize the dynamics and reasons behind gender inequality issues is needed when bringing about a change



## APPROACHES

- Analyse your context in order to understand the environment where the actions should be developed. It is important to analyse the specific causes behind the gender inequalities. For example, to understand reasons why women quit research careers in order to find solutions or to assess men's perspectives on how to address gender inequalities in research.
- Monitor and follow-up defining Key Performance Indicators (KPI) in order to recognize the actions (efforts). Specifically, it is necessary to establish indicators to monitor the Gender-Equality Action Plans (GEAPs) follow-up in order to evaluate their impact.
- Monitor grant success rates by gender, overall and by research content..



## PROGRESS IN CATALAN RESEARCH CENTRES

To what extent the biomedical research centres are prepared for the new demands of publishers, funders and 'accreditations' requirements? Even more importantly, are the research institutes supporting the research community to prepare for the new priorities? The following selection of targets shows that the research institutes are profiting from these requirements to embark in the profound cultural changes needed for science to reach its full potential. The list is exploratory and not exhaustive, so other actions that are taking place in the organisations could not be reported here.

### Monitoring and analysing gender equality

- Including a selection of indicators to annually assess gender equality issues (e.g. IBEC, and VHIR)
- Creating a gender equality committee with the function to promote, evaluate and improve the gender equality plan (e.g. CRG, IRSantPau, IDIAP Jordi Gol, IDIBELL, IDIBGI, IGTP, IMIM, ISGLOBAL, VHIO, and VHIR)

### Renovating policies and managing practices

- Promoting flexibility in terms of time so that researchers (women and men) can conciliate labour and family life (e.g. IDIBAPS, VHIR)

- Equalizing salaries for the same job category (e.g. IRBLleida)
- Taking into account maternity/paternity leave and other potential aspects related to gender (e.g. IDIBELL, IMIM, and ISGLOBAL)

### Improving research by integrating a gender perspective

- Designing gender sensitization training about gendered-oriented research for researchers (e.g. IBEC)

### Ensuring gender balance in decision making bodies

- Seeking to increase the proportion of women in the decision-making bodies or in certain professional profiles (e.g. IBEC, IDIBAPS, and IRBLleida)
- Ensuring gender-balanced composition of evaluation panels (e.g. IMIM, ISGLOBAL, and VHIR)

### Removing unconscious bias and promoting cultural awareness

- Adopting guidelines on gender-neutral language or considering gender-neutral questions during the recruitment and career development interviews (e.g. IBEC, IDIAP Jordi Gol, IRBLleida, ISGLOBAL and VHIR)



## MODERNISING POLICIES AND MANAGEMENT PRACTICES

In order to overcome the challenges to gender inequalities, there must be a willingness at all levels to open up discussion and to support the new approaches. A community of practice is necessary to develop informed and effective policy and management approaches and to benefit from building on lessons learned, effective practices, and tools and strategies for addressing particular challenges. Changes to organizational culture, career progression trajectories, flexible working, and succession planning require time to be institutionalized in standard operating procedures and behaviours<sup>10</sup>. Significant changes in research organisations have the power to shape the research system overall and research careers in particular<sup>11</sup>. Gender equality should be on top of the priorities of the institutions and supported with intramural funding..



### APPROACHES

- Review human resources strategies of research centres. One example could be to develop, support and guarantee measures on linkage between life balance and parenthood which should not hinder career progression.
- Obtain and maintain commitment of the whole institute (top-down and bottom-up), which is considered a factor of success for transformative actions in favour of gender equality. One way could be to display a 'diversity pledge' on your website.
- Develop a GEAP with concrete initiatives (tailor made).
- Provide financial and human resources for centres to implement and assess their GEAPs. One option could be applied for external funding or even to link structure funding to specific Indicators of improving gender balance.

Effective policy and management approaches  
require time, resources and commitment



### GENDER-EQUALITY ACTION PLANS (GEAPs)

Notably, the demands presented in this monograph emphasizes the need for comprehensive GEAPs. **GEAPs**, as well as cultural organisations' approaches, can make a difference, not only in improving gender equality but also in accelerating scientific advancement and innovation. Success of GEAPs is contingent upon the commitment, resources, and professional expertise invested in the development and implementation of action plans. It is widely agreed that GEAPs should fulfil be SMART (specific, measurable, achievable, realistic and time-bound).

Because action plans are complex context-specific social interventions with non-linear logics seeking structural and cultural changes for all faculty and staff, sufficient time is required to impact gender balance among academic and research staff. Normally, improvements in gender balance can be expected after the full implementation of four-year action plans. Interventions with linear logics, such as positive discrimination and quotas, normally yield improvements in gender balance in shorter periods of time, but they may not always be desirable or possible under the non-discrimination law.

The development and implementation of action plans can be strengthened by appointing dedicated equality and diversity professionals whose job description focuses on working together with leaders and staff to develop and implement gender equality interventions. Therefore, it is important that they should have the sufficient degree of expertise, interpersonal skills, and the ability to adjust action plans in response to the changing environment.

Finally, peer-review of action plans can serve to ensure a sufficient degree of commitment and quality, adherence to the evidence-based self-assessment, and avoidance of unrealistic targets and simplistic indicators. Actions in different subjects and areas of research depend on the initial conditions and the context of individual areas of research, e.g. basic science vs clinical research, traditionally male-dominated specialities such as surgery vs traditionally female-dominated areas such as primary care and public health.



## IMPROVING RESEARCH BY INTEGRATING A GENDER PERSPECTIVE

Gender dimension in research means integrating sex and gender analysis into all phases of research – from setting priorities, to funding decisions, to establishing project objectives and methodologies, to data gathering, analysing results, and evaluation<sup>12</sup>. The gender dimension of research, that is to say, how research addresses knowledge gaps affecting gender equality, includes among other issues: research on health problems affecting women and girls, the exclusion of pregnant women/women of reproductive age systematically from clinical trials thus hampering the availability of safety and efficacy data of new therapeutic drugs/vaccines, and consequently their access to those new tools, etc. Introducing sex and gender in a comprehensive manner into health research opens a new phase, and it is a necessity to produce more accurate, rigorous and valid results.

Integrating the gender dimension in research  
is an added value in terms of excellence and  
improvement



### APPROACHES

- Encourage and promote researchers to enrol women and ethnic groups into clinical trials of all phases, and to plan to analyse data by sex.
- Avoid bias thinking in bias gender research. In this sense it is important before starting any project, to analyse your environment and to be honest about how gender relationship is performed.
- Ensure gender perspective in research evaluation, considering from study design and definition of study population to the health problem that is addressed and how. Specific indicators should be defined.
- Develop, communicate and implement standards for the incorporation of sex and gender into biomedical research. Checklists and guidelines should be available to identify the relevance of gender perspectives and analysis.
- Invite and work with gender experts on the carried out projects.



### PROGRESS IN FUNDING AGENCIES

The efforts to ensure that scientific advancing knowledge is also relevant for women and to promote knowledge gaps relevant to women have reached to the point of launching in some countries specific funding programmes. An interesting example is the comprehensive efforts made by the national funding organization for biomedical research and development (**ZonMw**), mainly commissioned by the Dutch Ministry of Health since 2016 with the 4-year Gender and Health Knowledge programme<sup>13</sup>. The programme aims to be a simultaneous catalyst for **better integration of the sex/gender dimension in all biomedical and health care research** in the Netherlands. The principal goal of the programme is to fund research that fills in the knowledge gaps in the differences between men and women in disease prevention, biomedical and health care. Another interesting experience comes from Canada, where the major funding agency **Canadian Institutes of Health Research (CIHR)** provides useful tools for all research institutions and funding agencies<sup>13</sup>.

Another similar initiative was promoted by the **European Commission (EC) -in partnership with**

**Stanford University and the National Science Foundation**<sup>16</sup>- is providing useful **insights on how to implement gender perspective in research**. This initiative, **Gendered Innovations, offers state-of-the-art methods of sex and gender analysis to be applied in health research, engineering and science**.

Similarly, **AQuAS** also examined **gender balance in expert panel reviews**, which were satisfactory, and success rate of female candidates in the different research sub-programmes. As a rule of thumb, success rates were lower as the amounts and prestige of the competition for funds were greater, although a proper statistical exercise has not been performed. In addition, the AQuAS team identified that the more dependent the assessment tool on scientific curriculum standard measures of quartiles and deciles of publications, the lower the success rate of female candidates. An analysis of gender-neutral measures of scientific curricula is, therefore, needed to adapt the assessment tools.



# FOSTERING WOMEN'S CAREER ADVANCEMENT AND DEVELOPMENT

Gender professional distribution within research institutions is partly explained by path dependence. The notion of path dependency, which originates in political science, suggests that current actions depend on existing knowledge and past decisions<sup>14</sup>. Path dependent gender bias in research does not necessarily mean that individuals are biased, but that the outcome of the institution may be biased. If there is not a conscious transformation of policies, practices, beliefs and written or unwritten rules of behaviour, the outcomes will be the same: fewer women, less diversity of experience, and failure to capture the benefits expected from the enhancement of the potential pool of researchers reflected in the increasing number of women with doctoral degrees. In countries where it is allowed by law, positive discrimination may have quicker and greater impact.

Fostering women's career advancement and development implies gender balance, new evaluation criteria and quotas, among other issues



## APPROACHES

- Balance gender candidates in the selection processes (if there are less than 30 % of women applying, extend the period of applying) or to launch a special recruitment programme exclusively for women for a given period or to include a claim in the job offer that female applications are encouraged (especially for those positions that are generally male dominant, such as tech/data/AI, etc.).
- Encourage mentorship, advice and support among women i.e. Lean-in Circles.
- Ensure gender-balanced representation and leadership of women in study team composition.
- Promote the co-Principal Investigator role (specially in academic medicine).
- Review and adapt criteria in evaluation of female scientists' and young researchers' (often young women) performance by considering those activities such as serving as experts in executive boards, evaluation, advice or technical committees. Also, consider protecting women careers after maternity leave.
- Set targets to invite and secure more female peer reviewers (aims to invite 50 % of women on every proposal).
- Develop different career funding instruments targeting female researchers.



## PROGRESS IN UNIVERSITIES RECRUITMENT: COMMITMENTS AND QUOTAS

One internationally known pledge to reverse gender inequalities is the **STEM Equity Achievement (SEA) Change**<sup>15</sup> promoted by the multidisciplinary scientific society **American Association for the Advancement of Science (AAAS)**, with members from 91 countries, and a leading publisher family of journals: Science. The SEA Change aims to promote institutional transformations in support of diversity and inclusion, especially in universities. By joining **SEA Change**, an institution commits to **equity and full participation of each individual across gender (including gender, gender identity, and gender expression), ethnicity, disability status, socioeconomic status, sexual orientation, age, familial history of higher education, and any other factor** that is unrelated to ability and has been the target of bias and unequal treatment.

There are also active discrimination recruitment experiences that have recently been put in place in the Netherlands: the **Eindhoven University of Technology** announced in 2019 that will **only admit women in job applications for any faculty over the next 18 months**<sup>16</sup>. The university **aims to bring its faculty ratios for new hires up to 35 % female professors over the next five years**. Currently, 15 % of the institution's associate faculty members and 29 % of assistant professors are women. In parallel, the Dutch funding agency **ZonMw** is also launching specific research programmes that address knowledge gaps relevant to women, and with a gender-balanced research team.



## ENSURING GENDER BALANCE AND TRANSPARENCY IN DECISION-MAKING POSITIONS

Leadership positions are still largely dominated by men although there is a bigger number of women. This means that women do not play a significant role in deciding what research should be funded, how it is evaluated, how excellence should be defined, what use should be made of it, who should be rewarded, promoted, published or funded. Multiple factors may contribute to a low representation of women in leadership positions such as implicit or subconscious bias in selecting procedures, work-life balance, or little transparency in procedures and decision-making processes.

Special strategies should be developed to attract women to leadership positions



### APPROACHES

- Set gender and diversity targets in its appointments of commissioners and chairs. This will include for example: to gender balance in all scientific panels including qualified women; to invite female experts when the organization needs to perform any conference or congress or to implement No All-Male Policy, and display it prominently in the website.
- Define a clear selection criteria of evaluation panels and decision bodies. It is necessary to be transparent with the recruitment objectives, what they are going to value in the selection processes.
- Promote transparency on the decision making. Scientific committees frequently are only conformed by men and thus, information is more difficult to be transmitted because men and colleagues are already present in senior positions.
- Implement a 'Sustainable Libra Catalan project' (Libra is an EU project with the goal of increasing the representation and participation of women in leadership positions in life sciences).



### PROGRESS IN SCIENTIFIC PUBLISHING

In the special issue 'Advancing women in science, medicine, and global health' of **The Lancet**<sup>17</sup> in February 2019, this scientific journal made an exercise of self-assessment acknowledged systemic gender bias in 30 % of the published science. This special issue followed seven editorials in 2018 and the publication of 32 pieces of evidence calling for action and accountability. In the comment entitled 'What is Lancet doing about gender and diversity?' authored by two editors<sup>18</sup> it is accepted that publishers have a central role in the 'vicious cycle' by causing, perpetuating or accelerating women's under-representation (in author, reviewer and editorial positions), which are at odds with the values of the journal. By acknowledging that, Lancet makes an historical step forward by proposing actions to move from being 'part of the problem' to being 'part of the solution'. This commitment was followed by the announcement in August 2019<sup>19</sup> of a formally established Diversity Pledge and No All-Male Panel Policy. The **Diversity Pledge** states the value of diversity in all its dimensions, recognizing the **need to improve the inclusion in science of people across gender, ethnicity, geography, and other social categories**. The Lancet Group is committed

to increasing diversity and inclusion in research and publishing, and in particular to increasing the representation of women and colleagues from low-income and middle-income countries among our editorial advisers, peer reviewers, and authors. No **All-Male Panel Policy** acknowledges the traditional predominance of male speakers, which excludes the full breadth of available expertise and opinion. The policy states that Lancet Group **editors will not serve as panellists at a public conference or event when there are no women on the panel ('manels')**. For events that we organize or plan, we aim for at least 50 % of female speakers. Our request is for women to be included as panellists, not only as chairs or moderators.

It is perceived by many that the decisions made by the Lancet team is a no-return move. The equally important journal **Cell** published in September 2019<sup>20</sup> an editorial recognizing equally low numbers of gender representation in their historical records, admitting a process of self-reflection and also proposing concrete actions of self-identification as part of the personal information in their database of reviewers and **ask scientists to sponsor female reviewers** for their database.



# REMOVING UNCONSCIOUS BIAS AND PROMOTING CULTURAL AWARENESS

Institutional cultures can support women's advancement in scientific professional careers<sup>21</sup>. It is well established how a highly competitive environment diminishes women's opportunities, and organizational culture affects how researchers interact with each other. As it is defined, organizational culture is a set of shared assumptions that guide what happens in organizations by defining appropriate behaviour for various situations<sup>22</sup>. Consequently, organizational culture affects how researchers interact with each other. Male and female leaders may have different leadership traits: women are more likely to focus on collaboration and may have less interest, and fare less well, in hierarchical organization<sup>23</sup>. It needs to be highlighted, however, that culture within organizations is a product of years and it cannot be implemented seeking immediate results.

The change in organizational culture and how research is done (and therefore what results are obtained) translates into new ways of analysing reality which will have an impact on level of society and will help to transform health care, public health programs, etc.

Finally, recent research emphasizes the importance of 'critical actor' leaders for initiating and sustaining change. 'Critical actor' leaders are 'both women and men, who individually and collectively have the commitment and power to create gender-equitable cultures'. Previously, it was assumed that once the number of women in science has reached sufficient numbers, change would naturally follow. However, this is not the case. Having committed institutional and political leaders -as well as collective 'critical actor' leaders such as government and charitable funding agencies- can help to ensure that action plans are effectively developed, resourced, and implemented despite the changing political and economic environment.

Promote cultural awareness  
is related to be responsible, to be  
trained, to create networks and  
to improve communication

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## APPROACHES

- Be aware of your language and the attitude in order to promote gender equality. One way could be to promote and integrate gender topics in social conversation or in meetings with the colleagues (be active).
- Participate in different networks in order to be more aware and activist to fight against gender inequalities or to discuss issues related. For example, creating Networks 'only for women' or participating in any social movements or women associations..
- Be responsible when there is 'gender bullying behaviour' in your workplace and take a supportive attitude. For example, if you are in a meeting where you observe gender inequality or some kind of mistreatment, make it visible and denounce it.
- Be motivated for self-training in gender topics, for example, looking for a gender course or any activities in this area. Institutions and policy-makers should also to empower women and provide training in unconscious bias (specific training).
- Emphasize gender perspective in communication to society (gender plans but also recognise women scientist, quotes etc.).
- Create a bottom-up committee (including all the work levels) in order to work on gender equality issues.
- Share best practices among institutions.



## PROGRESS IN CHANGING BEHAVIOURS

Initiatives to support researchers and reviewers in addressing gender responsibly when they carry on their scientific creativity are proliferating and are rapidly expanding. The **GENDER-NET Plus** (2017-2022)<sup>24</sup> is a network that joins 16 organizations from 13 countries and aims to provide support to the **promotion of gender equality through institutional change** and to promote the integration of sex and gender analysis into research.

On a more individual and cultural level, the **Male Champions of Change Institute**<sup>25</sup> is a unique initiative that aims for mutual support from men that are willing to co-redefine men's role in taking action on gender inequality in Australia. It activates peer

groups of influential male leaders, supports them to **step up beside women**, and drives the adoption of actions across private sector and government. This Institute activates peer groups of influential male leaders, supports them to step up beside women, and drives the adoption of actions across private sector and government. On an individual level, women can join initiatives and networks of mutual support for female leaders are also proliferating. Initiatives like **WE Health**<sup>26</sup> (EIT Health) or **AdaLab**<sup>27</sup> aim to **provide capacity building tailored to women's promotion** and support their professional advancement in health research and innovation.





# ONE STEP FORWARD: COMMITTING BIOMEDICAL RESEARCH CENTRES TO ACTION

The commitment of the Catalan biomedical research centres and policy-makers was made concrete with the signature of the Hypatia of Alexandria Charter

There are different approaches to foster gender equity in research centres. One well-known example of a mutual support approach is the **Athena Swan Charter** (Athena Project and the Scientific Women's Academic Network)<sup>28</sup> established in 2005 in the United Kingdom, although currently spread across the Commonwealth<sup>29</sup> and other European countries<sup>30</sup>. The Athena SWAN is actually a **commitment list of ten principles** to be adopted by research institutions within policies, practices, action plans and culture

regarding gender perspective. Athena Swan evaluates and recognizes good practices in higher education and research institutions towards the advancement of gender equality: representation, progression and success for all. It includes the application of three different awards, depending on what needs to be demonstrated: bronze, silver and gold. An analysis of successful Athena SWAN Silver action plans (the most common one) shows that, on average, each action plan has 34 actions predominantly focusing on all genders indiscriminately (88 %). The target population of the actions and interventions includes not only academic and research staff (52 %), but also professional and support staff and students<sup>31</sup>. Also, improving organization and culture, removing barriers to career development, and creating flexible working environments are the most frequent areas of gender equality interventions.

## HYPATIA OF ALEXANDRIA CHARTER OF COMMITMENT TO GENDER EQUALITY IN CATALAN BIOMEDICAL RESEARCH CENTRES

Following this example, the Catalan ecosystem has agreed to tackle this inequality with a sound engagement from local co-responsible counterparts of the 'vicious cycle'. The 19 centres of health and biomedical research of Catalonia discussed, endorsed and signed a **Catalan Charter** of commitment to gender equity. The Charter was inspired by the comprehensive approach of the Athena SWAN charter to gender equality action planning adapted to our local socio-economic, policy and regulatory context. The Charter was named after the philosopher, mathematician and astronomer **Hypatia of Alexandria** and includes institutional and individual memberships<sup>32</sup>.

The Hypatia of Alexandria Charter **includes 12 principles** and covers women (and men and any other kind of diversity (when necessary)) in relation to:

- Renovating policies and management practices
- Improving research by integrating a gender perspective
- Fostering women career advancement and development
- Ensuring gender balance and transparency in decision-making positions
- Removing unconscious bias through cultural awareness

Also, the first four principles are related to being conscious of the problem and in some way, to monitor and analyse gender equality issues.

## The 12 principles of the Hypatia of Alexandria Charter

1

"We acknowledge that the Catalan research ecosystem cannot reach its full potential unless it benefits from the talents of all.

2

We acknowledge that advancing gender equality demands comprehensive and genuine commitment from research centres, in particular active leadership from those in senior roles.

3

We are aware that initiatives and actions to support individuals alone will not sufficiently advance gender equality. We see the new gender priorities from local, national and European governments, funding and assessment agencies as an opportunity to align individual actions.

4

We acknowledge that gender inequalities are just an expression of the insufficient representation of diversity in science. We also acknowledge that individuals have multiple identities and acknowledge the need to consider the intersection of those identities wherever possible.

Therefore,

5

We commit to **advancing gender equality** in the centres, in particular, addressing the loss of women across the career pathway and the absence of women from senior roles.

6

We commit to **tackling the gender pay gap**, both vertically and horizontally for the same role and level of seniority.

7

We commit to taking action to **remove the obstacles faced particularly by women** at major points of career development and progression, and especially in the transition from PhD into a sustainable research career.

8

We commit to addressing the **consequences of labour contract interruptions and labour market rigidities** for the retention and progression of staff in research centres, particularly women.

9 We commit to promoting **sustainable structural and cultural changes** to remove systemic barriers, unconscious biases, stereotypes and inequities and promote inclusive settings for diversity and family conciliation.

10 We commit to taking the opportunity of the new gender priorities from local, national and European governments, funding and assessment agencies. Thus, in alignment with the HRS4R charter and other European and government initiatives, we engage in a genuine **implementation of Gender Equality Action Plans (GEAP) internally and commit into sharing our experience between centres** for the benefit of mutual learning and support.

11 We commit to supporting and training our researchers to take a **responsible approach on gender perspective in research and innovation** with the aim to strengthen the quality of knowledge production and benefit all individuals in society, regardless of gender.

12 We commit to taking action to advance in women's representation and the **inclusion of any form of diversity**.

*We endorse this Charter with the understanding that governments and research funders are providing the necessary tools and resources to make this charter work for women's advancement and leadership in science".*

Progress in implementing gender equality actions relies on firm and sustained top-level commitment. A commitment of the policy-makers, undoubtedly provides and legitimates a favourable background for implementing gender equality actions. It helps to facilitate instrumental and discursive resources for equality advocates to take action. For this reason, the policy-making and assessment responsibilities of the Health Department of the Catalan Government also want to commit to this important issue in order to offer a favourable context and accompaniment.



## THE PRINCIPLES OF THE POLICY-MAKER COMMITMENT

*“We acknowledge that the Catalan biomedical research ecosystem cannot reach its full potential unless the European, Spanish and Catalan governments engage in a strong and sustained gender equality strategy in scientific policy.*”

*We acknowledge that by signing the Girona Charter the Catalan biomedical research centres are making a path-breaking step forward that will only be successfully transformative if supported by government’s engagement in a sustained gender equality strategy in science policy that includes providing resources, tools, and assessment systems oriented to mutual advancement, learning and support.*



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*We passionately welcome the signature of the Girona Chart by the Catalan biomedical research centres and commit to give full support in making this an historical opportunity for a hand-in-hand collaboration across institutions and centres”.*

## FINAL CONSIDERATIONS

The approaches presented in this monograph, although not exhaustive of all possible options, have the value that was put forward on the basis of the experiences of the Catalan research centre delegates.

For diversity and inclusion efforts at any organization to be truly impactful, we all need to better understand and apply the concept of intersectionality. The concept of intersectionality is complex, but it essentially describes how different aspects of culture and identity interconnect to affect a person's holistic life experiences, so it recognises individuals as a whole. That means that there is a great diversity of women and this should be taken into account. Another issue that should be considered when taking actions is that the set of roles, behaviours and attitudes that the society define as appropriate for women and men ('gender roles') can be the cause, consequence and mechanism of power relations.

In view of moving forward in supporting women's advancement and leadership, the commitment of the Catalan biomedical research centres and policy-makers was made concrete with the signature of

the **Hypatia of Alexandria Charter**. The Hypatia Charter is a response to satisfy all your GEAP needs demanded by the major funding agencies (from Europe, Spain and Catalonia). This is just an initial step. Commitment cannot be built up in isolation, -mutual effort and learning will increase its success. It is also an instrument for institutions to take action and to think the next steps to implement those actions. One might need to consider what type of change and what actions may be more effective for success. The change wheel can help deciding. The visibility of the different institutions will help to create awareness, a mutual learning approach and a constructive benchmarking. The accompaniment of a monitoring and evaluation mechanisms is recommended in order to advocate good performance, improve accountability and transparency, and analyse to optimize its returns.

This is just the first step to bring about a change in women's advancement and leadership and to integrate the gender perspective in research content in the biomedical research centres of Catalonia.

The Hypatia of Alexandria Charter might be seen as a tool that allows cooperation and mutual learning to bring about a change in women's advancement and leadership in the biomedical research centres of Catalonia

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# APPROACHES BY STAKEHOLDER GROUP AND COMMITMENT FOR THE NEW DEMANDS AND CHALLENGES

Area	Approaches	Stakeholders			Commitment: Hypatia of Alexandria Charter
		Individual	Research centre	Policy maker/ Funding agency	
Monitoring and analysing gender equality	1 Analyse your context in order to understand the environment where the actions should be developed. It is important to analyse the specific causes behind the gender inequalities. For example, to understand reasons why women quit research careers in order to find solutions or to assess men's perspectives on how to address gender inequalities in research.	•	•	•	<p>1 We acknowledge that the Catalan research ecosystem cannot reach its full potential unless it benefits from the talents of all.</p> <p>2 We acknowledge that advancing gender equality demands comprehensive and genuine commitment from research centres, in particular active leadership from those in senior roles.</p> <p>3 We are aware that initiatives and actions to support individuals alone will not sufficiently advance gender equality. We see the new gender priorities from local, national and European governments, funding and assessment agencies as an opportunity to align individual actions.</p> <p>4 We acknowledge that gender inequalities are just an expression of the insufficient representation of diversity in science. We also acknowledge that individuals have multiple identities and acknowledge the need to consider the intersection of those identities wherever possible.</p>
	2 Monitor and follow-up defining Key Performance Indicators (KPI) in order to recognize the actions (efforts). Specifically, it is necessary to establish indicators to monitor the Gender-Equality Action Plans (GEAPs) follow-up in order to evaluate their impact.		•	•	
	3 Monitor grant success rates by gender, overall and by research content.		•	•	
Modernising policies and management practices	4 Review human resources strategies of research centres. One example could be to develop, support and guarantee measures on linkage between life balance and parenthood which should not hinder career progression.	•	•	•	<p>6 We commit to tackling the gender pay gap, both vertically and horizontally for the same role and level of seniority.</p> <p>8 We commit to addressing the consequences of labour contract interruptions and labour market rigidities for the retention and progression of staff in research centres, particularly women.</p> <p>10 We commit to taking the opportunity of the new gender priorities from local, national and European governments, funding and assessment agencies. Thus, in alignment with the HRS4R charter and other European and government initiatives, we engage in a genuine implementation of Gender-Equality Action Plans (GEAP) internally and commit into sharing our experience between centres for the benefit of mutual learning and support.</p>
	5 Obtain and maintain commitment of the whole institute (top-down and bottom-up), which is considered a factor of success for transformative actions in favour of gender equality. One way could be to display a 'diversity pledge' on your website.	•	•		
	6 Develop a GEAP with concrete initiatives (tailor made).		•		
	7 Provide financial and human resources for centres to implement and assess their GEAPs. One option could be applied for external funding or even to link structure funding to specific Indicators of improving gender balance.		•	•	

Approaches by stakeholder group and commitment for the new demands and challenges

Area	Approaches	Stakeholders			Commitment: Hypatia of Alexandria Charter
		Individual	Research centre	Policy maker/ Funding agency	
Improving research by integrating a gender perspective	8 Encourage and promote researchers to enrol women and ethnic groups into clinical trials of all phases, and to plan to analyse data by sex and race.		●	●	11 We commit to supporting and training our researchers to take a responsible approach on gender perspective in research and innovation with the aim to strengthen the quality of knowledge production and benefit all individuals in society, regardless of gender.
	9 Avoid bias thinking in bias gender research. In this sense it is important before starting any project to analyse your environment and to be honest about how gender relationship is performed.	●			
	10 Ensure gender perspective in research evaluation, considering from study design and definition of study population to the health problem that is addressed and how. Specific indicators should be defined.			●	
	11 Develop, communicate and implement standards for the incorporation of sex and gender into biomedical research. Checklists and guidelines should be available to identify the relevance of gender perspectives and analysis.			●	
	12 Invite and work with gender experts on the carried out projects.	●	●		
Fostering women career advancement and development	13 Balance gender candidates in the selection processes (if there are less than 30 % of women applying, extend the period of applying) or to launch a special recruitment programme exclusively for women for a given period or to include a claim in the job offer that female applications are encouraged (especially for those positions that are generally male dominant, such as tech/data/AI, etc.).		●	●	7 We commit to taking action to remove the obstacles faced particularly by women at major points of career development and progression, and especially in the transition from PhD into a sustainable research career.
	14 Encourage mentorship, advice and support among women.		●		
	15 Ensure gender-balanced representation and leadership of women in study team composition.	●	●	●	
	16 Promote the co-Principal Investigator role (specially in academic medicine).	●	●	●	
	17 Review and adapt criteria in evaluation of female scientists' and young researchers' (often young women) performance by considering those activities such as serving as experts in executive boards, evaluation, advice or technical committees. Also, consider protecting women careers after maternity leave.		●	●	
	18 Set targets to invite and secure more female peer reviewers (aims to invite 50 % of women on every proposal).			●	
	19 Develop different career funding instruments targeting female researchers.			●	

Approaches by stakeholder group and commitment for the new demands and challenges

Area	Approaches	Stakeholders			Commitment: Hypatia of Alexandria Charter
		Individual	Research centre	Policy maker/ Funding agency	
Ensuring gender balance and transparency in decision-making positions	20 Set gender and diversity targets in its appointments of commissioners and chairs. This will include for example: to gender balance in all scientific panels including qualified women; to invite female experts when the organization needs to perform any conference or congress or to implement No All-Male Policy, and display it prominently in the website.	•	•	•	5 We commit to advancing gender equality in the centres, in particular, addressing the loss of women across the career pathway and the absence of women from senior roles.  12 We commit to taking action to advance in women's representation and the inclusion of any form of diversity.
	21 Define a clear selection criteria of evaluation panels and decision bodies. It is necessary to be transparent with the recruitment objectives, what they are going to value in the section processes.		•	•	
	22 Promote transparency on the decision making. Scientific committees frequently are only conformed by men and thus, information is more difficult to be transmitted because men and colleagues are already present in senior positions.		•	•	
	23 Implement a 'Sustainable Libra Catalan project' (Libra is an EU project with the goal of increasing the representation and participation of women in leadership positions in life sciences).			•	
Removing unconscious bias and promoting cultural awareness	24 Be aware of your language and the attitude in order to promote gender equality. One way could be to promote and integrate gender topics in social conversation or in meetings with the colleagues (be active).	•	•	•	9 We commit to promoting sustainable structural and cultural changes to remove systemic barriers, unconscious biases, stereotypes and inequities and promote inclusive settings for diversity and family conciliation.
	25 Participate in different networks in order to be more aware and activist to fight against gender inequalities or to discuss issues related. For example, creating Networks 'only for women' or participating in any social movements or women associations.	•	•		
	26 Be responsible when there is 'gender bullying behaviour' in your workplace and take a supportive attitude. For example, if you are in a meeting where you observe gender inequality or some kind of mistreatment, make it visible and denounce it.	•			
	27 Be motivated for self-training in gender topics. For example, looking for a gender course or any activities in this area. Institutions and policy-makers should also empower women and provide training in unconscious bias (specific training).	•	•		
	28 Emphasize gender perspective in communication to society (gender plans but also recognise women scientist, quotes etc.).		•	•	
	29 Create a bottom-up committee (including all the work levels) in order to work on gender equality issues.		•	•	
	30 Share best practices among institutions.		•	•	



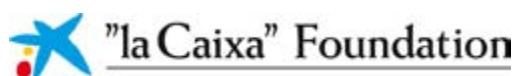
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This study was supported by  
la Fundació Bancària "la Caixa"



The Agency for Health Quality and Assessment of Catalonia (AQuAS) is part of the Catalan Ministry of Health. Its job is to carry out data assessment and analysis, and to generate relevant, reliable information to be used in decision-making processes. AQuAS is committed to promoting health and to enhancing the sustainability of the Catalan health system. AQuAS is a founding member of the International Network of Agencies of Health Technology Assessment (INAHTA) and the International School on Research Impact Assessment (ISRIA), corporate member of the Health Technology Assessment International (HTAi), of the Reference site group "Four Stars" of the European Innovation Partnership on Active and Healthy Ageing of the European Commission.

If you are interested in this report you can contact us:

**Agència de Qualitat i Avaluació Sanitàries de Catalunya**  
Roc Boronat, 81-95 (Second floor).  
08005 Barcelona (Spain)  
Tel.: 00 34 93 551 38 88 | Fax: 00 34 93 551 75 10 |  
<http://aquas.gencat.cat>

**Publisher:** Agència de Qualitat i Avaluació Sanitàries de Catalunya (AQuAS)/Agency for Health Quality and Assessment of Catalonia (AQuAS). Departament de Salut/Catalan Ministry of Health, Generalitat de Catalunya/Government of Catalonia

**First issue:** Barcelona, september 2020

**Designer:** Joana López-Cordiente

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