AQU CATALUNYA

## EMPLOYERS

# THE OPINION OF EMPLOYERS REGARDING THE EDUCATION RECEIVED BY RESIDENT PHYSICIANS (RPs)

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# THE OPINION OF EMPLOYERS REGARDING THE EDUCATION RECEIVED BY RESIDENT PHYSICIANS (RPs)

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**With the cooperation from the sector of**

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Generalitat de Catalunya

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# TABLE OF CONTENTS

# INTRODUCTION

**Evidence-based proposals for improving study programmes**

The primary goal of Agència per a la Qualitat del Sistema Universitari (AQU Catalunya) is to **contribute to the improvement of university study programmes in the Catalan university system**. To achieve this, it is essential to benefit from evidence and data making it possible to assess the functioning of each study programme with the aim of making it easier for decisions to be made by the officials in charge of the universities and study programmes and by politicians responsible for universities.

This report sets out evidence regarding the implementation and delivery of **the Bachelor's degree in Medicine** gleaned from the results of the **2018 survey on employers in this sector**. The results of the first edition of the survey (2015) can be found on the AQU Catalunya website (AQU Catalunya, 2016).[1]

The survey strives to gain an acquaintance of the opinion of heads of department and equivalent officials from health centres regarding the education received by resident physicians (RPs), particularly with regard to cross-disciplinary and specific skills which bear substantial margin for improvement.

In addition to these results, the report incorporates an initial section with **contextual information on the Bachelor's degree in Medicine**, setting out **basic data on the study programmes** and the main results of the **surveys on the satisfaction of individuals who have recently graduated from these study programmes, as well as the results of the survey on their access to the labour market**.

***Figure 1. Databases for improving study programmes***

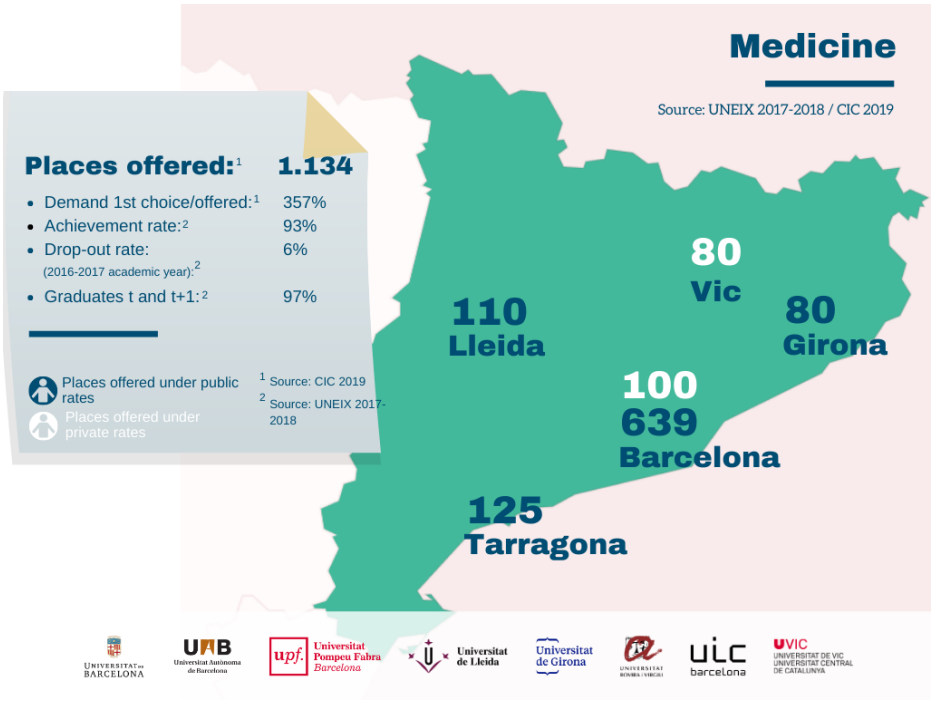

[1] <http://www.aqu.cat/doc/doc_10679829_1.pdf>

# INDICATORS ON THE STUDY PROGRAMMES IN MEDICINE

## Basic data on study programmes

The basic data on the study programmes involves **administrative data taken from the UNEIX information system.**

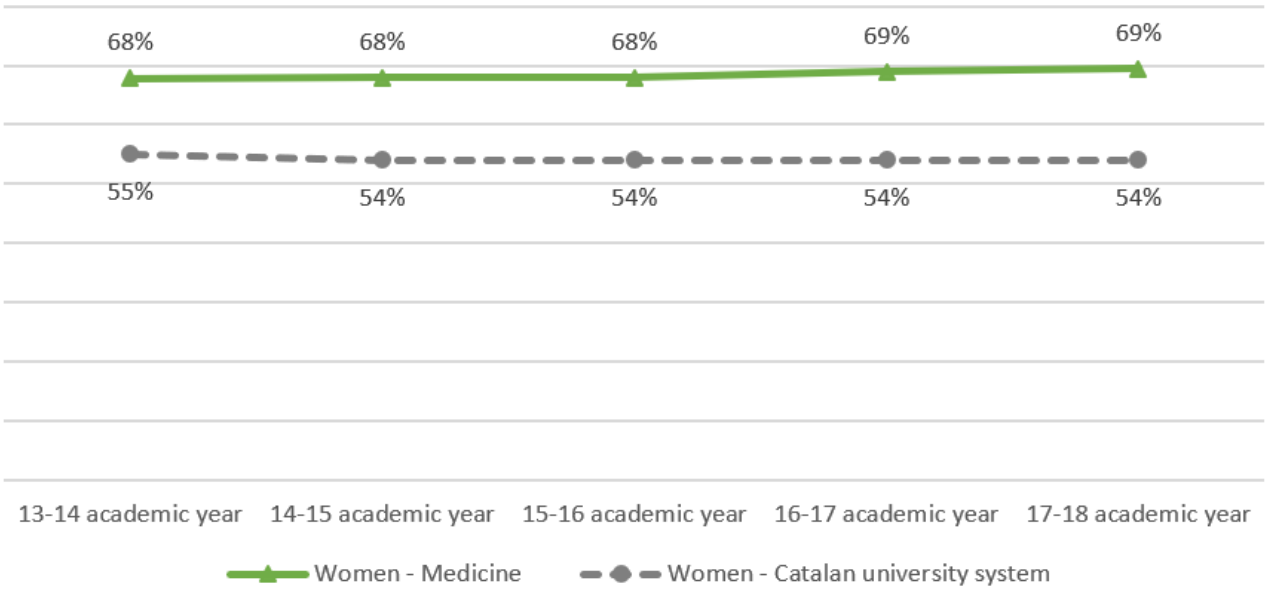
***Figure 2. Indicators on the implementation and delivery of the Bachelor's degree in Medicine (2019-2020 academic year)***




### The Bachelor's degree in Medicine exhibits one of the highest levels of demand in Catalonia

Demand for 1st choice for the Bachelor's degree in Medicine is four times the number of places offered. In addition, the programme benefits from a high achievement rate and a low drop-out rate.

***Figure 3. Trend in the percentage of women enrolling on the Bachelor's degree in Medicine and the total for the Catalan university system***



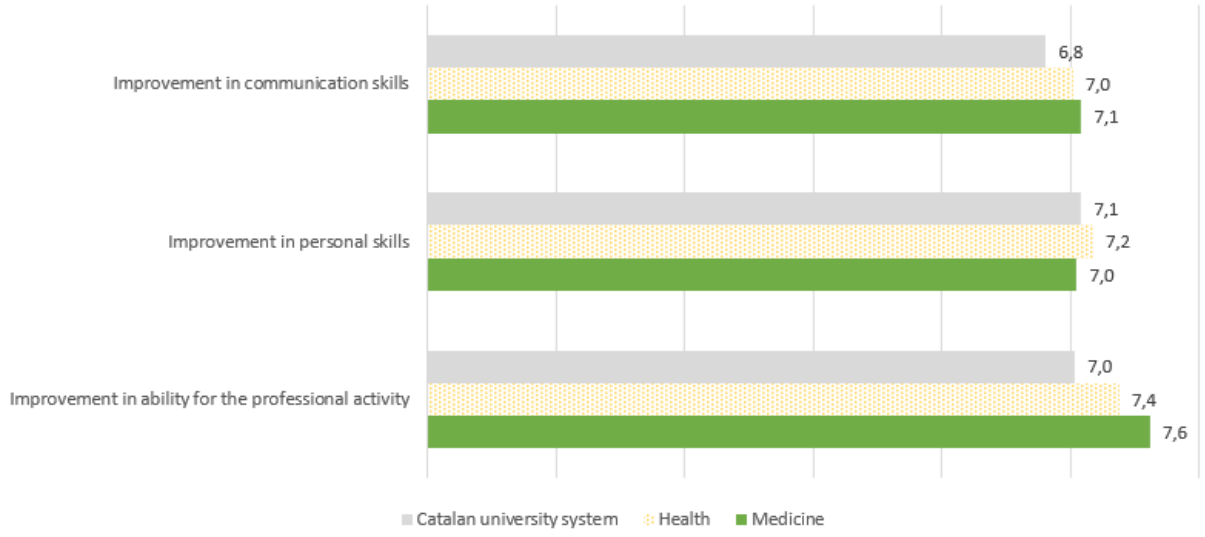

## As with most Bachelor's degrees in the field of Health, Medicine is a female-dominated programme

69% of the students enrolled on the Bachelor's degree in Medicine are women, which compares to a percentage of 54% for the Catalan university system overall.

## Satisfaction of graduates with the university education received

The data regarding satisfaction with the education received stems from the **satisfaction survey** drawn up by AQU Catalunya. It sets out information on graduates' satisfaction with various characteristics of the education delivered in the university study programme they followed. It is an online survey conducted yearly on all the individuals who graduated one year earlier. The results shown are the averages for 2016, 2017 and 2018 for the Bachelor's degree in Medicine, for all study programmes in the field of Health and the overall total for the study programmes in the Catalan university system.

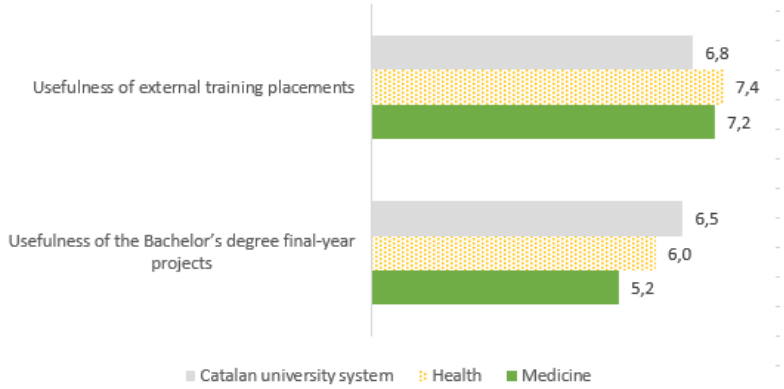
***Figure 4. Assessment of various factors of the education delivered (from 0 to 10)***




### The education in the Bachelor's degree in Medicine delivers improvements in students' communication skills, personal skills and ability for the professional activity

The assessments given to the improvement in ability for the professional activity, personal skills and communication skills of students of Medicine stand at 7.6, 7 and 7.1, respectively. These values are slightly above those for the Catalan university system average, with the exception of personal skills, for which no major differences are reported.

*Figure 5. Usefulness of external training placements and Bachelor's degree final-year projects (from 0 to 10)*

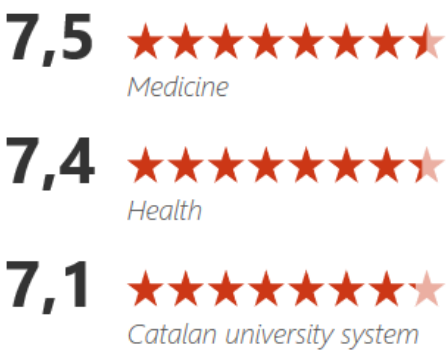



## Students of Medicine hold the usefulness of external training placements in very high regard, though not the usefulness of the Bachelor's degree final-year project

They rate the usefulness of external training placements at 7.2 (on a scale of 0 to 10), far above the average for the Catalan university system overall (6.8). It should be pointed out that although the average for Bachelor's degrees in the field of Health stands at 7.4, some Bachelor's programmes such as Nursing draw far more positivity in the assessment of the usefulness of external training placements (8.7).

One aspect with room for improvement is the Bachelor's degree final-year project, which is assessed as having poor usefulness (5.2), well below the average in the field of Health (6.0) and for the Catalan university system overall (6.5).

*Figure 6. Overall satisfaction with the study programme (from 0 to 10)*




## Overall satisfaction with the Bachelor's degree in Medicine is good, as with most programmes in the field of Health

Satisfaction with Medicine is rated at 7.5, on a par with the average reported for study programmes in the field of Health (7.4). The average assessment of satisfaction with Bachelor's degrees in the Catalan university system overall is lower (7.1).

## Access to the labour market for graduates

The survey on access to the labour market is conducted every three years with the aim of finding out what the experience of graduates is when it comes to access to the labour market three years after completing their university programmes (seven in the case of Medicine). The results shown relate to the most recent survey from 2017 and are broken down according to university and study programme. The results for the Catalan university system as a whole show the average for all degree programmes taught in Catalonia.[2]

***Figure 7. Employment status of graduates in 2017***

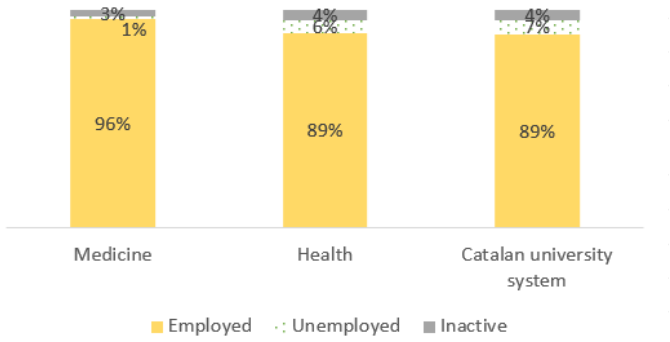
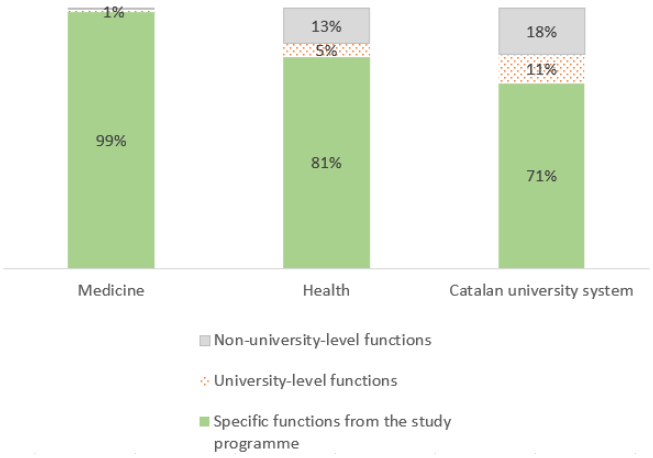



***Figure 8. Functions performed at work in 2017***




### Those individuals who recently graduated in Medicine are in work and are employed in their field

96% of individuals who obtained the Bachelor's degree in Medicine are in work three years after completing their Bachelor's programme. This percentage is above the average for study programmes in the field of Health and the average for the Catalan university system (by 7 percentage points).

In addition, all of those who are in work (99%) are performing specific functions from the study programme in Medicine, a percentage that is far higher than the average for Health (81%) and for the Catalan university system (71%). Indeed, it is the best suited study programme to the job market.

As with other study programmes, it is a regulated profession that may only be practiced by those who have followed the specific Bachelor's degree.

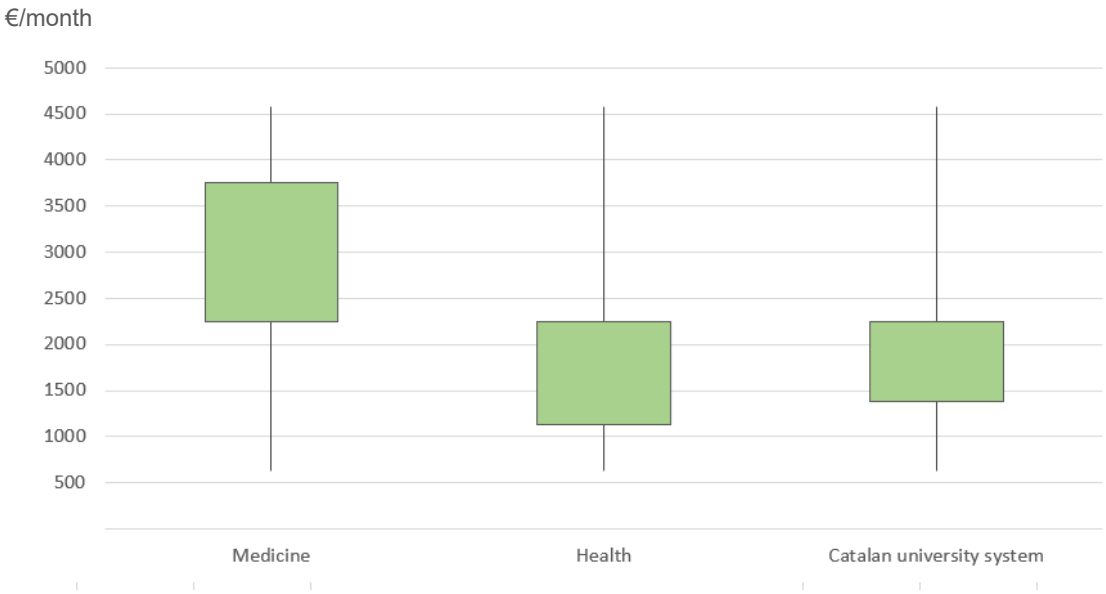
[2] The results are weighted by a factor that corrects possible proportional variations in the sample.

*Figure 9. Fields of employment in 2017 of individuals who graduate in Medicine*


*Table 1. Contract type in 2017*

| | Permanent | Temporary | Self-employed | Others |
|---|---|---|---|---|
| **Medicine** | 34% | 59% | 4% | 3% |
| **Health** | 37% | 46% | 13% | 4% |
| **Catalan university system total** | 50% | 35% | 11% | 4% |

*Figure 10. Monthly gross earnings (only those in full-time work) in 2017 (€)*




## Moreover, their monthly earnings are substantially higher than those of the remaining graduates

Although temporary contracts feature broadly among new graduates in Medicine, the range of monthly earnings three years after graduating is substantially higher than the average for programmes in the field of Health and the remaining degrees in the Catalan university system.

***Table 2. Level of education received according to skill in 2017 (on a scale from 0 to 10)***

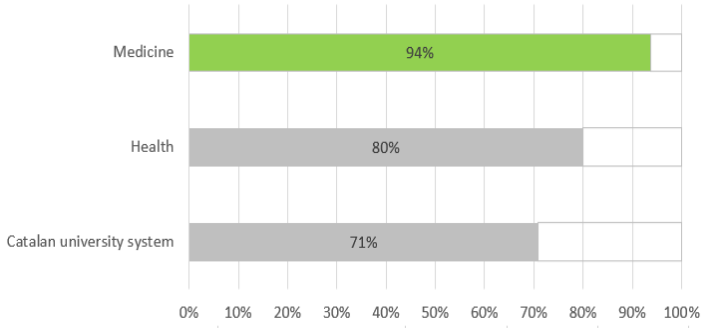
| Skills level | Medicine | Health | Catalan university system |
|---|---|---|---|
| Theoretical training | 7.7 | 7.0 | 6.8 |
| Practical training | 6.6 | 6.4 | 5.6 |
| Oral expression | 5.5 | 6.2 | 5.9 |
| Written expression | 5.6 | 6.2 | 6.3 |
| Team work | 5.9 | 7.1 | 6.8 |
| Leadership | 4.7 | 5.3 | 5.0 |
| Problem solving | 5.7 | 6.1 | 6.1 |
| Decision-making | 5.7 | 6.0 | 5.8 |
| Creativity | 3.8 | 4.8 | 5.2 |
| Critical thought | 6.1 | 6.5 | 6.5 |
| Management | 3.9 | 5.2 | 5.4 |
| IT | 4.3 | 4.7 | 5.0 |
| Languages | 3.0 | 3.4 | 3.7 |
| Documentation skills | 5.3 | 6.1 | 5.9 |

## Theoretical and practical training are the most highly valued skills in the Bachelor's degree in Medicine, above the average for programmes in the field of Health and the Catalan university system

The ratings stand at 7.7 and 6.6, respectively.

Nevertheless, the assessment given to the remaining skills is below the average for Bachelor's degrees in Health and even the average for the Catalan university system overall.

***Figure 11. Percentage of graduates willing to take the same study programme 3 years later***




## 94% of graduates in Medicine would take the same study programme again

This percentage is significantly higher than the figure for the Catalan university system overall and the figure for study programmes in Health.

# THE OPINION OF HEALTH CENTRES ON THE EDUCATION RECEIVED BY RPs

## Characteristics of the people responding to the survey and of the health centres where they work

*Table 3. Basic data on the two editions of the survey on Medicine employers*

| | Population | Sample | Response rate | Sample error |
|---|---|---|---|---|
| Employers study 2015 | *606* | *90* | *14.9%* | *9.3%* |
| Employers study 2018 | *734* | *142* | *19.3%* | *7.5%* |

*Table 4. Ownership of health centres according to the edition of the survey*

| Centre ownership | 2015 | 2018 |
|---|---|---|
| ICS | *40%* | *41%* |
| XHUP and other institutions | *60%* | *59%* |
| ***Total*** | *100%* | *100%* |

*Table 5. Health centre type according to the edition of the survey*

| Centre type | 2015 | 2018 |
|---|---|---|
| Primary healthcare centre | *24%* | *25%* |
| Hospital or others | *76%* | *75%* |
| ***Total*** | *100%* | *100%* |

*Table 6. Position of the people responding to the survey according to the edition of the survey*

| | 2015 | 2018 |
|---|---|---|
| Department head | *81%* | *81%* |
| Supervisor or assistant head | *19%* | *19%* |
| ***Total*** | *100%* | *100%* |

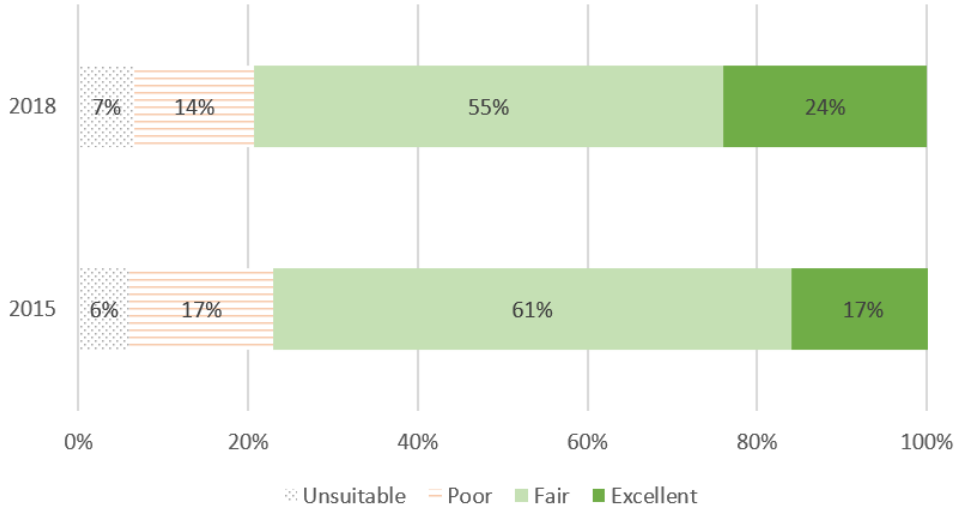
### Participation of Medicine employers in the survey rose substantially in the 2018 edition

Both the sample and the response rate have risen compared to the previous edition of the survey assessing the education of RPs (2015).

The breakdown of responses according to ownership and type of centre is similar to the previous edition of the survey: 41% are centres belonging to the Catalan Health Institute (ICS, from the Catalan) and the remainder (59%) are centres belonging to the Catalan Network of Hospitals of Public Use (XHUP, from the Catalan) or other institutions. Moreover, 25% are primary healthcare centres and 75% are hospitals and other categories of centre.

## Admission of RPs to health centres

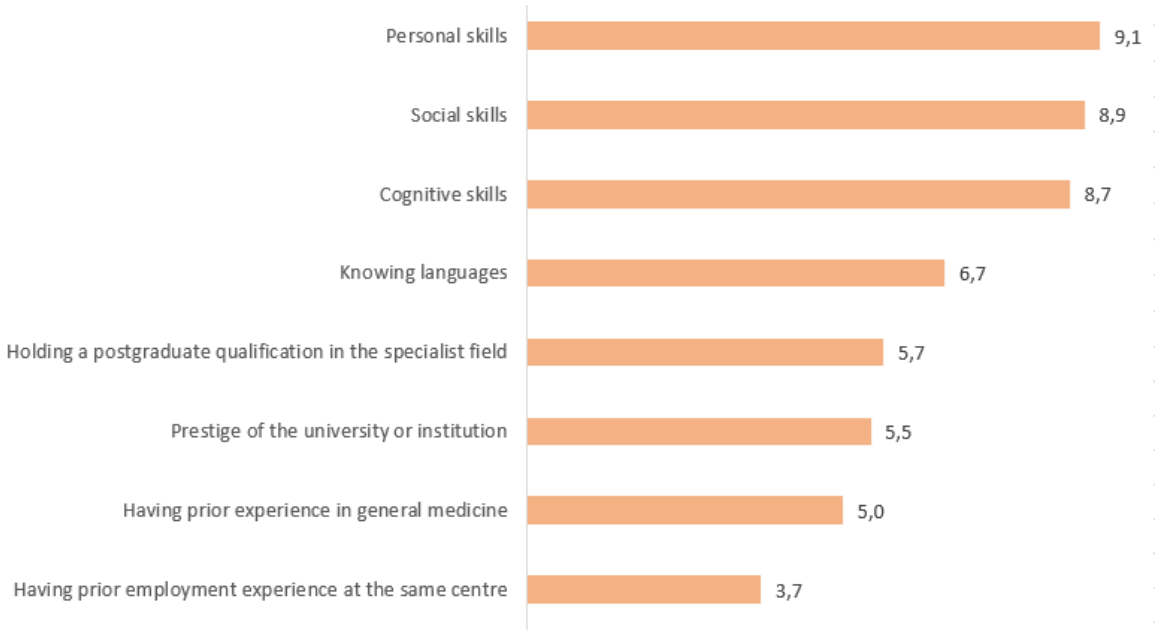
***Figure 12. Level of suitability of the procedure for admitting RPs to the service***




**Most health centres (8 in every 10) rate the procedure for admitting RPs to the service as being fair or excellent, on a par with the assessments reported in the previous edition of the survey**

The resident physician exam is a broadly theory-centred test enabling admission to specialist training. Even so, it should be pointed out that endeavours made by Medicine Schools to assure the attainment of skills are not reflected in the residency exam. Indeed, the impact of the student's academic transcript amounts to only 10% of the final grade.

***Figure 13. Relevance of certain factors that would be taken into consideration by heads of department in the RP recruitment process***

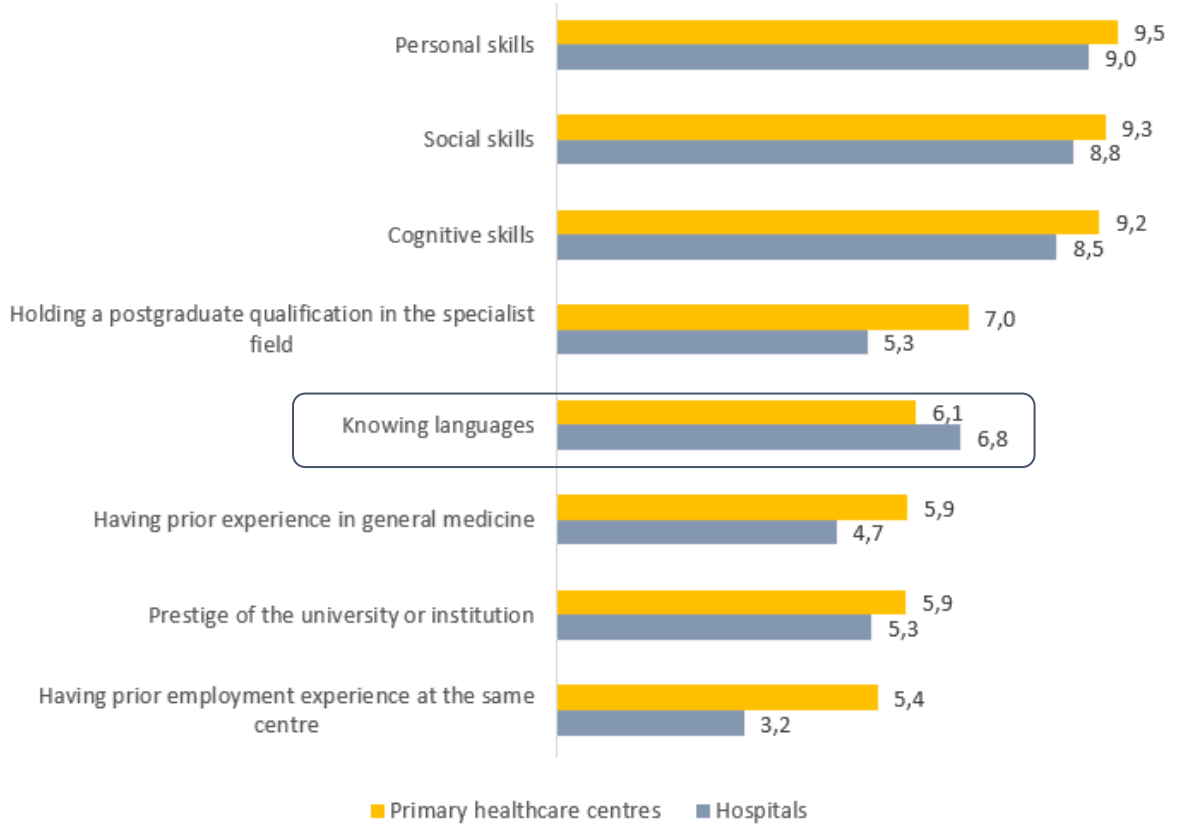



## If they could choose the RP profile, the aspect they would value most highly in the recruitment process would be the personal, social and cognitive skills of candidates

These skills are rated at 9.1, 8.9 and 8.7, respectively. This is followed by knowing languages (6.7), which rates lower in terms of importance. The remaining factors, such as the prestige of the university or holding a postgraduate qualification in the specialist field, would not be significant in recruitment for these centres.

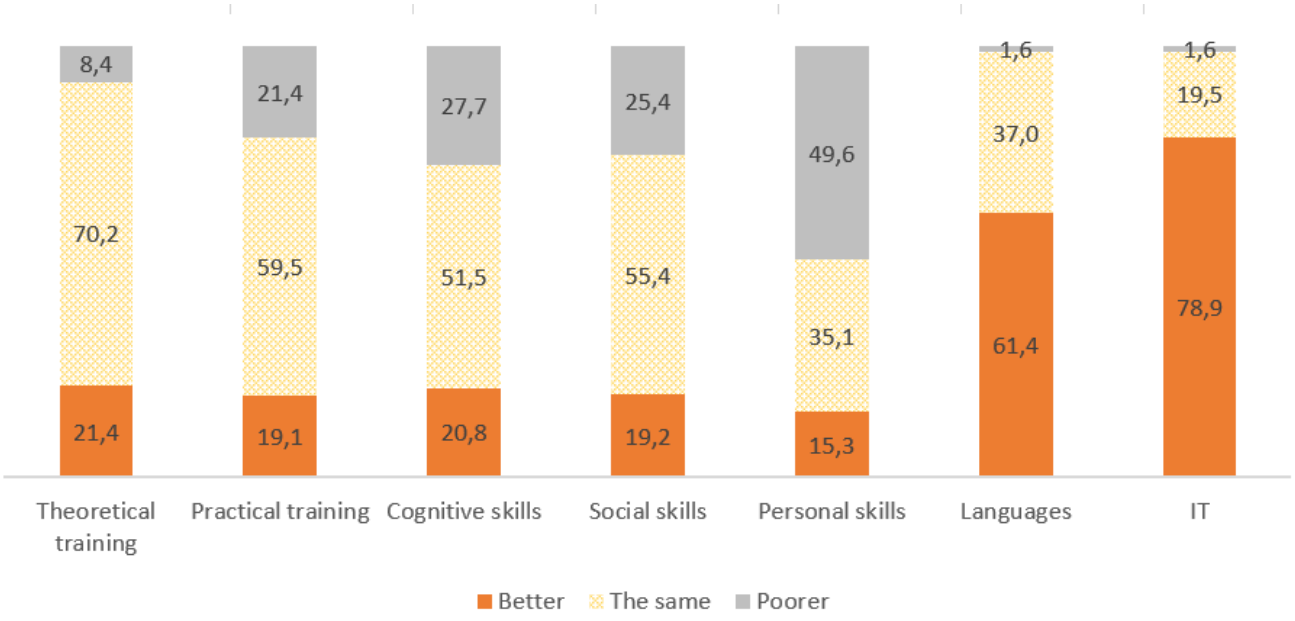
Primary healthcare centres place higher importance on all factors than hospitals, particularly prior experience in general medicine and prior experience at the same centre. The only factor that is more significant to hospitals is knowing languages.

***Figure 14. Relevance of certain factors that would be taken into consideration by heads of department in the RP recruitment process according to centre type***



## Assessment of the education delivered

***Figure 15. Trend in the current education compared to that received 5 and 10 years ago (%)***




### Graduates in Medicine exhibit an improvement in their education in terms of languages and IT skills in recent years, as is the case in other study programmes. Nevertheless, a decline is seen with regard to their personal skills

Most heads of department surveyed consider that new RPs have shown an improvement in the education delivered in terms of IT skills (79%) and languages (61%). Nonetheless, this perception of improvement is lower than in other study programmes.

Furthermore, the centres surveyed feel that the education received by graduates of the Bachelor's degree in Medicine in terms of cognitive skills (problem solving, critical thought, creativity, etc.) and social skills (adapting to a working group, emotional intelligence, etc.) has remained constant. The same is true of the level of theoretical and practical training reported.

One characteristic aspect of the Bachelor's degree in Medicine, which has not been observed in any of the other sectors studied, is that half of the heads of department surveyed report a decline in personal skills (responsibility, initiative, autonomy, etc.).

## Skills of RPs

*Table 7. Cross-disciplinary skills that should be improved in study programmes in Medicine*

| | Percentage |
|---|---|
| Numerical skills | 0.7 |
| Oral expression | 5.6 |
| Use of most common IT tools | 5.6 |
| Documentation | 5.6 |
| Written expression | 9.2 |
| Languages | 12.7 |
| Leadership | 13.4 |
| Negotiation skills | 16.9 |
| Theoretical training | 17.6 |
| Practical training | 38.0 |
| Ability to offer new ideas and solutions | 38.7 |
| Capacity for learning and self-learning | 43.7 |
| Team work | 46.5 |
| Responsibility at work | 55.6 |
| Autonomous work (determining individual tasks, methods and time allocation) | 63.4 |
| Problem solving and decision-making | 73.2 |

### Problem solving and decision-making, coupled with autonomous work, are two key skills with room for improvement in the Bachelor's degree in Medicine

73% of the heads of department surveyed identify the need to improve problem solving and decision-making (as is the case with most study programmes in the Catalan university system) while 63% report this to be the case when it comes to the ability to work autonomously.

In addition, almost half of the centres observe a need for improvement in responsibility at work, team work and capacity for learning.

These results are aligned with the opinion of graduates in Medicine (according to the survey on access to the labour market) who report poor acquisition of these skills.

*Table 8. Specific skills that should be improved in study programmes in Medicine*

| | Percentage |
|---|---|
| **Ability to encourage and engage in health protection and prevention** | 16.2 |
| **Knowledge of the principles of healthcare systems' organisation in terms of areas and levels** | 18.3 |
| **Respect for the right of participation, information and autonomy, and for informed consent from individuals receiving care** | 21.8 |
| **Patient diagnosis, prognosis and treatment** | 26.8 |
| **Scientific evidence-based medical practice** | 33.8 |
| **Implementation of the professional values of medicine (ethics, bioethics, etc.)** | 37.3 |
| **Handling of uncertainty in clinical practice** | 58.5 |
| **Ability to communicate effectively with the individuals receiving care and their relatives and to show empathy** | 60.6 |
| **Suitable administration of available resources without undue expenditure** | 66.9 |
| **Critical spirit in professional interventions and the search for continuous improvement** | 69.0 |

## Specific skills showing scope for improvement in the Bachelor's degree in Medicine chiefly include critical spirit and the search for continuous improvement, administration of resources, communication and handling of uncertainty

More than half of the heads of department surveyed report the need for improvements in the following skills: critical spirit in professional interventions and the search for continuous improvement (69%), suitable administration of available resources (67%), ability to communicate effectively with the individuals receiving care and their relatives (61%) and handling of uncertainty in clinical practice (59%).

***Figure 16. Trend of the satisfaction of health centres with the skills of RPs (from 0 to 10)***


## Overall satisfaction of heads of department with the skills of the RPs under their responsibility has declined compared to 2015

The satisfaction of heads of department and equivalent officials with the skills of RPs in 2018 stands at 6.8 (on a scale of 0 to 10), which is similar to other sectors such as Nursing (6.7). Nonetheless, satisfaction with the skills of RPs has declined by almost 1 percentage point compared to 2015.

Satisfaction with the skills of the RPs working at primary healthcare centres is greater than the satisfaction reported with those working at hospitals (7.3 vs. 6.7).

***Figure 17. Satisfaction of health centres with the skills of RPs according to centre type (from 0 to 10)***

## Cooperation from health centres with universities

***Figure 18. Extent to which health centres cooperate with universities according to the type of activity (%)***

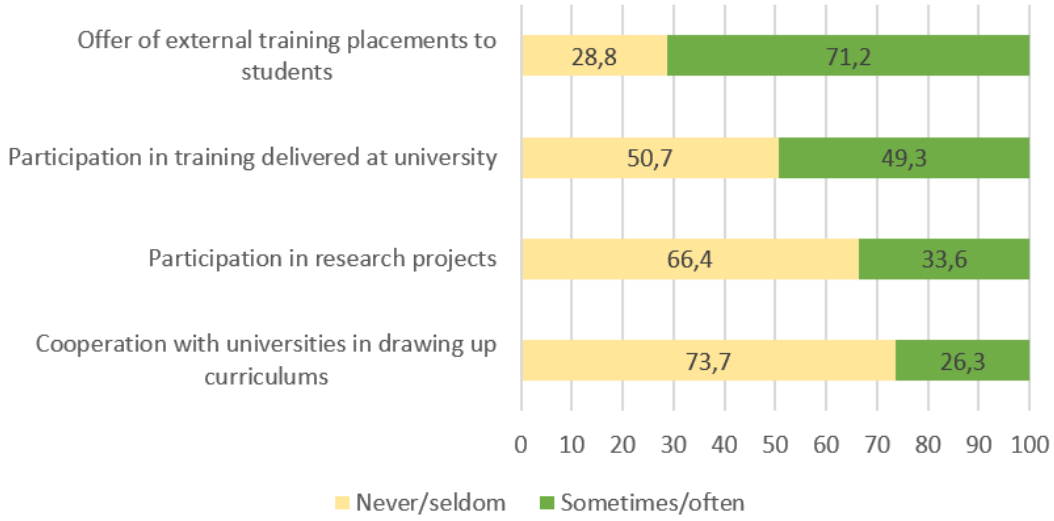



***Figure 19. Areas for improvement in training placement services at universities (% of health centres)***

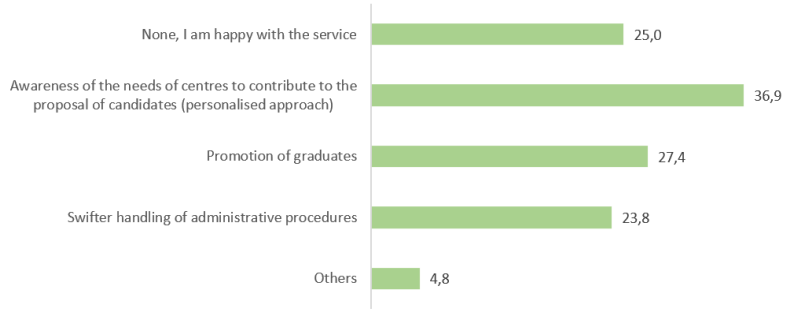



***Figure 20. Satisfaction with training placement services at universities (on a scale of 0 to 10)***

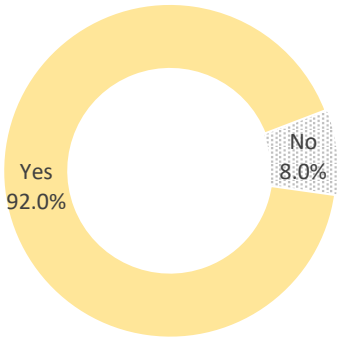

### In the region of 3 in every 4 of the services surveyed offer external training placements to students on the Bachelor's degree in Medicine

In addition, half of the individuals surveyed engage in training of students delivered at university and 1 in every 3 take part in research projects while 1 in every 4 contribute to drawing up curriculums. Medicine is a sector in which employers are more closely engaged with universities in terms of cooperation.

Moreover, the degree of satisfaction exhibited by health centres who used the training placement services stands at 6.8; even so, they do believe there is scope for gaining a better acquaintance of their needs.

## Training at health centres

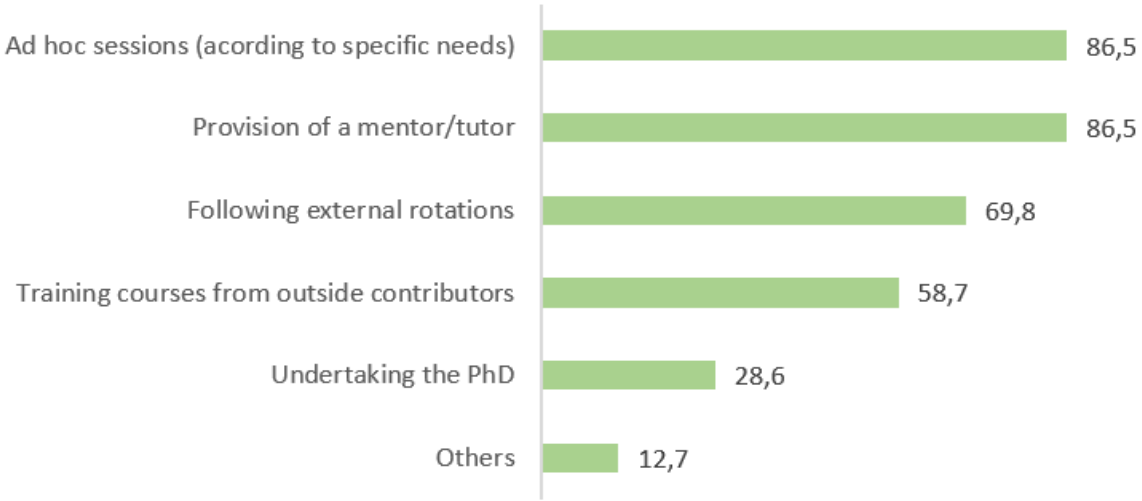
***Figure 21. Health centres engaging in hosting and training activities***




### Nearly all centres engage in hosting and training actions for RPs

This percentage is the same as the figure reported in the survey from 2015.

***Figure 22. Hosting and training activities (%)***

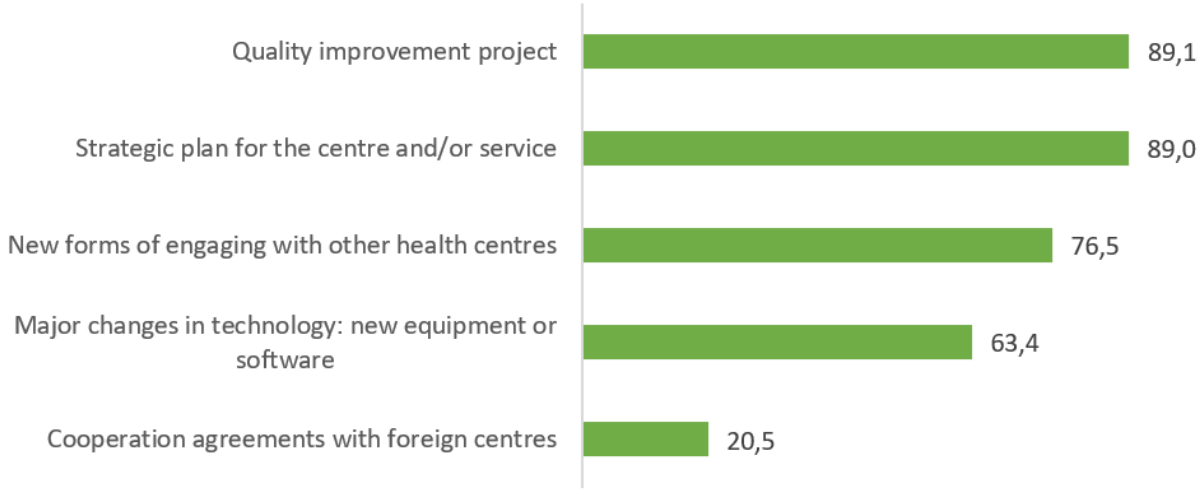



### By and large, this training is based on the provision of a mentor/tutor and specific sessions

Almost 9 in every 10 services surveyed and which engage in hosting and training activities provide a mentor/tutor to RPs upon admission to the centre, and they also organise sessions according to the training needs identified. These activities were also the most commonly delivered according to the previous edition of the survey. Likewise, 7 in every 10 services offer external rotations at other centres.

## Innovation at health centres

***Figure 23. Innovation at health centres (%)***




### The priority of health centres: quality improvement

Just as the results of the previous edition of the survey from 2015 revealed, almost all health centres are engaged in a quality improvement project and a strategic plan for the centre and/or service.

## Forecast

***Figure 24. Trend in employment in Medicine***

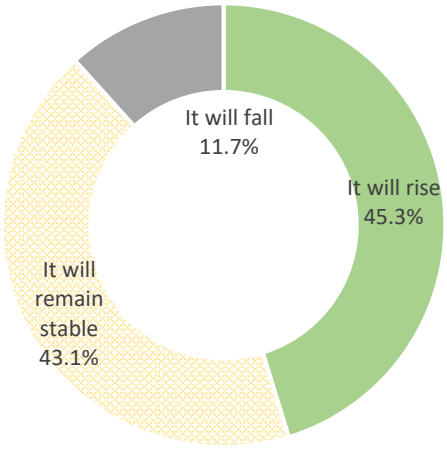



***Table 9. Reasons for the increase in employment***

| Reasons | % |
|---|---|
| Staff rotation | 77 |
| Centre expansion | 44 |
| Organisational or technological changes | 25 |
| Others | 20 |

Note: multiple response

### An increase in demand for professionals in the Medicine sector is envisaged owing to generation change

45% of health centres surveyed envisage growth in demand for professionals in Medicine due primarily to staff rotation (generation change).

***Figure 25. Skills that will gain importance in the field of Medicine****


## New technologies: the key future skill in Medicine

Skills related to new technologies (telemedicine and AI), along with communication and empathy with the patient, will gain importance over the coming years. This is also true of team work, shared decisions, multidisciplinary work and resource administration.

Even so, this host of skills is not analogous in all centres that responded to the survey: primary healthcare centres report that communication and empathy with the patient will become more important, while hospitals claim that the importance of new technologies will be noteworthy.

***Figure 26. Skills that will gain importance in the field of Medicine reported by primary healthcare centres****


***Figure 27. Skills that will gain importance in the field of Medicine reported by hospitals****


*These are open questions. Responses with the same meaning have been grouped into categories. Categories referred to most frequently are shown.

***Figure 28. Specialist areas that will gain importance in future in the field of Medicine****


## In terms of future specialist areas of importance, family medicine and geriatrics stand out

Even so, differences may also be observed in the responses given by people working at primary healthcare centres and those working at hospitals: primary healthcare centres once again point to the importance of family medicine, while hospitals believe specialist areas such as geriatrics, anaesthesiology, neurology and oncology will be the most important in the coming years.

***Figure 29. Specialist areas in Medicine that will gain importance as reported by primary healthcare centres****


***Figure 30. Specialist areas in Medicine that will gain importance as reported by hospitals****


*These are open questions. Responses with the same meaning have been grouped into categories. Categories referred to most frequently are shown.

# CONCLUSIONS

- The Bachelor's degree in Medicine experiences high demand, exceeding the number of places on offer fourfold.
- Students are satisfied with the education delivered (particularly in terms of practical training) and with external training placements, although they express poorer satisfaction with the Bachelor's degree final-year project. They experience excellent access to the labour market, although temporary contracts are widespread.

In terms of the education delivered to RPs:

- Most health centres (8 in every 10) rate the procedure for admission of RPs to the service as being fair or excellent.
- If they were able to choose, they would value the personal, social and cognitive skills of candidates when it comes to recruitment.
- In terms of cross-disciplinary skills, as with the remaining university study programmes reviewed, problem solving and decision-making is the skill that exhibits the greatest scope for improvement (73%). This is followed by the ability to work autonomously (63%), as well as responsibility at work, team work and capacity for learning (all three of which are around 50%).
- When it comes to specific skills, 69% of centres believe shortcomings are evident with regard to critical spirit in professional interventions and the search for continuous improvement. This is followed by suitable administration of available resources (67%), ability to communicate effectively with the individuals receiving care and their relatives (61%) and handling of uncertainty in clinical practice (59%).
- Despite these areas for improvement, employers are satisfied with the skills of the RPs they have recruited, giving a rating of 6.8 out of 10.

Other conclusions:

- As with other sectors reviewed, the activity in which health centres and universities are most closely engaged relates to external training placements offered to students (with 3 in every 4 centres surveyed taking part). Moreover, half of the services surveyed engage in training of students delivered at university and 1 in every 3 take part in research projects while 1 in every 4 contribute to drawing up curriculums. Medicine is the sector in which employers are more closely engaged with universities in terms of cooperation.
- Almost all services offer hosting and/or training for RPs, whether this is through a mentor/tutor or by arranging ad hoc sessions. Furthermore, 7 in every 10 offer external rotations.
- Innovation is important for health centres, particularly when it comes to quality improvement and the strategic plan, but also in terms of engagement with other centres and technology.
- Almost half of centres envisage increased employment of physicians thanks to staff rotation (retirement).
- Skills associated with new technologies (telemedicine and AI), along with communication and empathy with the patient, will become more important in the coming years. This is also true of team work, shared decisions, multidisciplinary work and resource administration.
- In terms of future specialist areas of importance, primary healthcare centres report that family medicine stands out, while hospitals believe geriatrics, anaesthesiology, neurology and oncology will be the most significant specialist areas over the coming years.

# DATA SHEET

## *Survey for employers*

| | |
|---|---|
| Population | Heads of department or equivalent officials from health centres in Catalonia |
| Survey period | From 12/03/2018 to 6/04/2018 |
| Survey type | Online |
| Average time taken | 12' 45'' |

| | Population | Sample | Response rate | Sample error |
|---|---|---|---|---|
| Medicine employers study 2015 | 606 | 90 | 14.9% | 9.7% |
| Medicine employers study 2018 | 734 | 142 | 19.3% | 7.5% |

## *Survey on satisfaction (2018)*

| Degree programme (graduates from 2016, 2017 and 2018) | Population | Sample | Response rate | Sample error |
|---|---|---|---|---|
| Medicine | 2,948 | 692 | 23.5% | 3.3% |

## *Survey on access to the labour market (2017)*

| Degree programme (graduates from 2009-2010) | Population | Sample | Response rate | Sample error |
|---|---|---|---|---|
| Medicine | 617 | 302 | 49.0% | 4.0% |

# ANNEX. BACHELOR'S DEGREE IN MEDICINE

| | UB | UAB | UAB-UPF | UdG | UdL | URV | UVic-UCC | UIC |
|---|---|---|---|---|---|---|---|---|
| **Medicine** | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

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