AVAILABILITY OF SPECIALIST PHYSICIANS IN INTENSIVE CARE MEDICINE

SITUATION IN THE YEAR 2006 AND PERSPECTIVES AT 15 YEARS

SPANISH SOCIETY OF INTENSIVE AND CRITICAL CARE MEDICINE AND CORONARY UNITS (SEMICYUC)

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AVAILABILITY OF SPECIALIST PHYSICIANS IN INTENSIVE CARE MEDICINE. SITUATION IN THE YEAR 2006 AND PERSPECTIVES AT 15 YEARS.

1. Introduction

The health care needs of the population in the forthcoming years require an adequate prediction of the demands of specialist physicians. Unfortunately, these predictions are difficult to establish because of different factors that affect both the demand for health care services and the supply of specialists. The increasing age of the population is one of the factors that will probably account for an increase in the demand for services. An increase in the Spanish population and in the proportion of people aged 65 or older is expected in the near future, which will be responsible for an important percentage in the use of health care resources and, therefore, of the need of specialist physicians.

Intensive Care Medicine is an important area in the hospital setting, the activity of which will be influenced by both the increase in the population and in the older age stratum.
The increase in the demand for health care services caused by an increase in the population as well as by a progressive requirement for the provision of services of quality will be the cornerstone of the activity of hospitals in the forthcoming years.

Like any medical specialty, Intensive Care Medicine has the obligation to consider which will be the needs for the next years in order to determine the human resources that will be required. As a consequence, it appears of great interest, firstly, to determine the demand for specialists in Intensive Care Medicine primarily in relation to the incidence of critical processes and also with population ageing, and secondly which will be the supply of these specialists taking into account different factors, such as the number of residents in training, the retirement age, the physician's age limit for the provision of continuous care and the percentage of drop outs from the specialty.

2. Objectives

1. To know the currents situation regarding the number of intensivist physicians in Spain. To this purpose a survey/census was conducted to determine the number of specialists, age, sex and employment status as well as the distribution of intensivists in the different Autonomous Communities of Spain in order to know the human resources available today.
2. To predict the expected changes in the number of Intensive Care Medicine specialists in the next 15 years taking into account the aforementioned conditions.
3. To make an approximation to future needs on the basis of population growth and the percentage of people aged over 65 years.

In contrast to other specialties, national and international references regarding the needs of specialist physicians in Intensive Care Medicine in relation to the population attended are lacking.

3. Methods

A questionnaire with the following items was designed: name of the hospital, city, province, Autonomous Community, total number of specialists of Intensive Care Medicine in the Service, data of birth (day/month/year), sex (man, woman) and working status (fixed-owner, provisional, eventual, duties contract)

Questionnaires were distributed through the Presidents of the Regional Societies and by direct delivery to the Heads of the Services of the hospitals included in the SEMICYUC hospital census. The period of delivery and collection of questionnaires was from February to June 2006.

In this study, planning of the needs of human resources was based on the following:

1. Prediction of the supply by estimating the currently available personnel and the future projections considering that the professionals and total population ratio and the percentage of care for older people are sufficient.

2. Planning of needs based on demographics information and maintaining the ratio of professionals and total population adjusted by the percentage of older people.

Analysis of secular trends for the next 15 years was performed according to different scenarios related, on the one hand, to intensivists supply and, on the other, to possible intensivists demands.

1. Intensivist physicians supply was considered according to the following scenarios:
    1) Number of residents/year: 140
    2) Retirement age: 65 years
    3) Age limit for continuous care: 55 years
    4) Percentage of drop out from the specialty: 5% / 10% / 15% / 20%
2. Intensivist physicians demand was considered according to the following scenarios:
    1) Ratio of the number of intensivists/100 000 inhabitants (year 2006) as a starting point
    2) Intensive Care Medicine activity, 55% referred to physicians older than 65 years of age (year 2006).
    3) Adjustment in relation to the increase in the general population and the increase in the percentage of people older than 65 years of age.

4. Results

Of the 257 hospitals included in the census of the SEMICYUC, 57 regional hospitals and private clinics without intensive care units (ICUs) were excluded. The survey involved the participation of 200 hospitals. A total of 1857 completed questionnaires were received, which were finally analised and corresponding to near 100% of intensivists actively working in Spain.

The mean age (95% confidence interval [CI]) was 46.4 years (46.0 to 46.8), with a median age of 46.4 years. Ages ranges between 30 and 69 years. Intensivists' ages showed a bimodal distribution, with a clear peak around 42 years and a second less marked peak at 57 years.

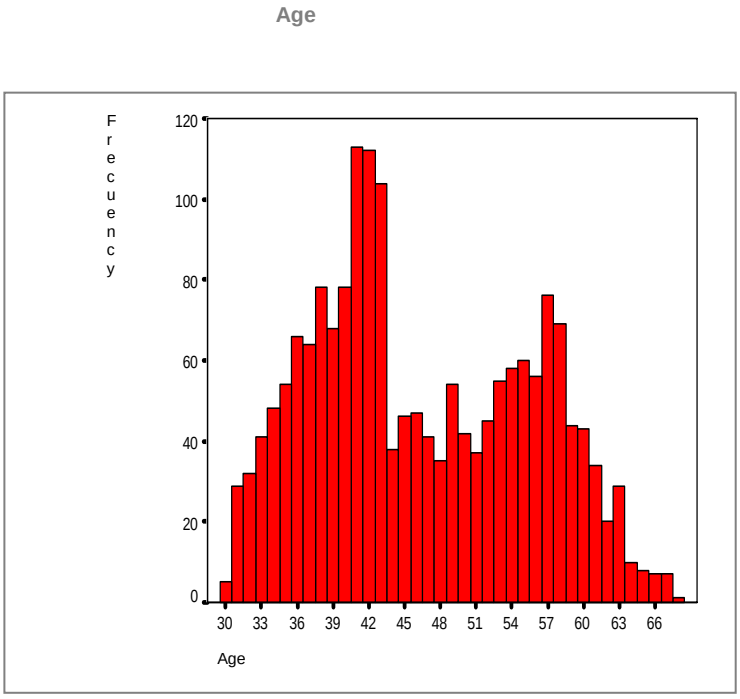

Figure 1

A total of 67.1% of participants were men

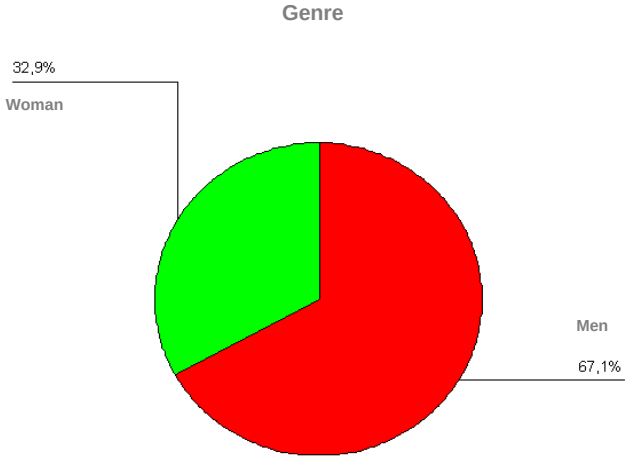

Figure 2

but the percentage of men decreases to 44% when the group of subjects 35 years old or younger were considered.

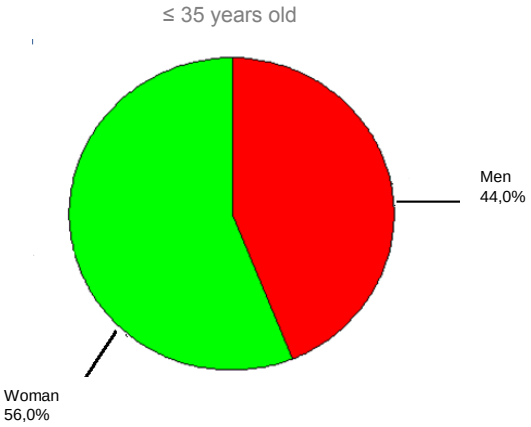

Figure 3

Twenty five percent of the study population aged 55 years and over.

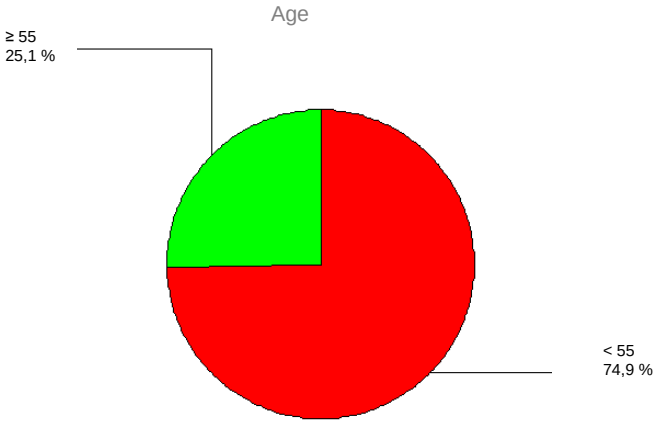

Figure 4

Regarding working status at the time of the survey, 67.2% of respondents had a fixed-owner position, 11.6% had a provisional position, 8.4% an eventual position and 12.8% had only contracts for duties.

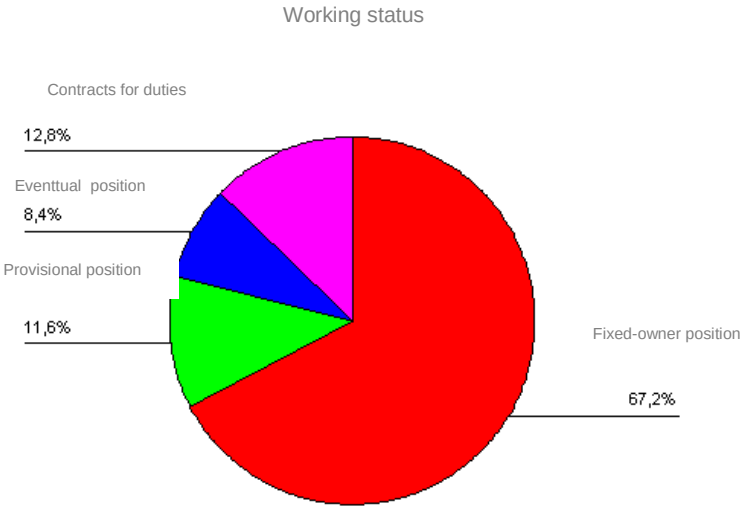

Figure 5

Distribution of participants by ranges of age showed that the most important group for men ranged between 51 and 55 years, whereas for women ranged between 36 and 40 years.

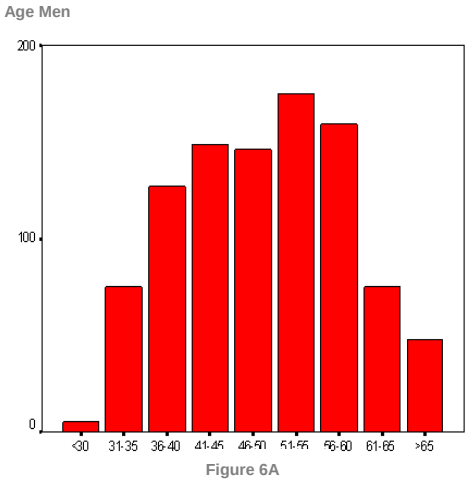

Figure 6A

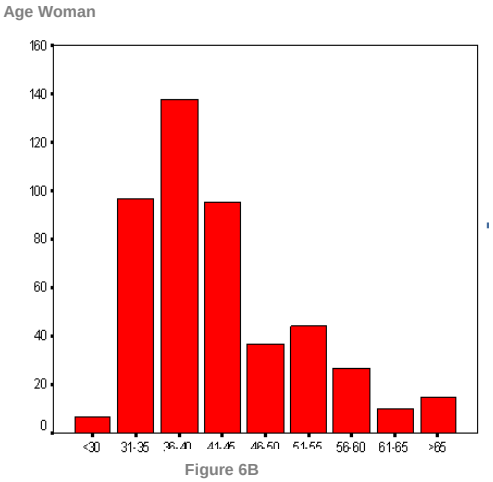

Figure 6B

The distribution of intensivists by Autonomous Communities revealed that the largest number of specialists worked in the communities of Andalucía, Cataluña, Madrid and Comunidad Valenciana.

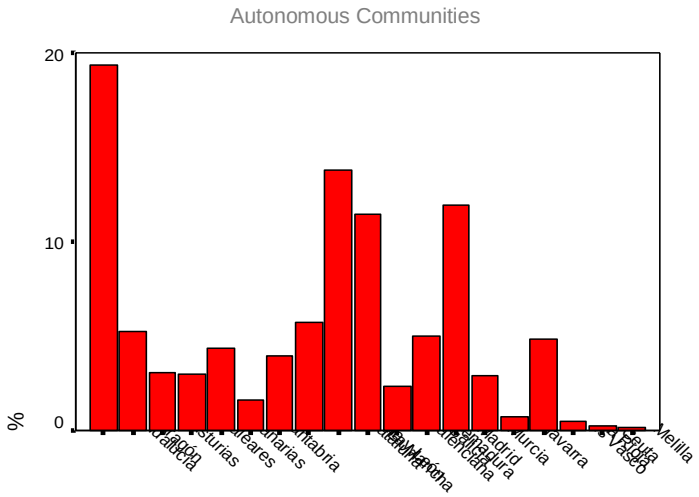

Figure 7

The distribution by communities referred to the number of intensivists under 65 years of age per 100 000 inhabitants showed that the communities with the highest number of specialists were those of Aragon with 8, Baleares and Castilla-La Mancha with 7, and Asturias, Canarias, Cantabria and Ceuta with 6. The mean number for the whole country was 4.18 intensivists per 100 000 inhabitants.

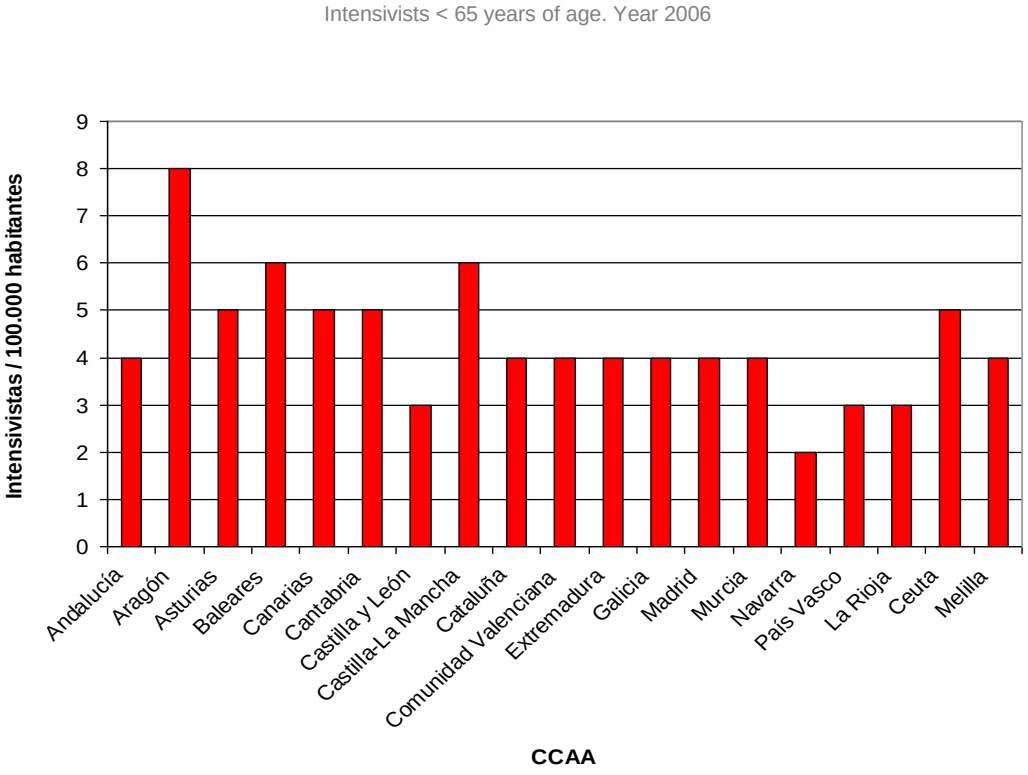

Figure 8

On the other hand, the distribution by communities referred to the number of intensivists under 55 years of age per 100 000 inhabitants showed that the communities with the highest number of specialists were those of Aragon, Baleares and Ceuta with 8, with an overall mean of 3.13 intensivists per 100 000 inhabitants.

Intensivists < 55 years of age. Year 2006

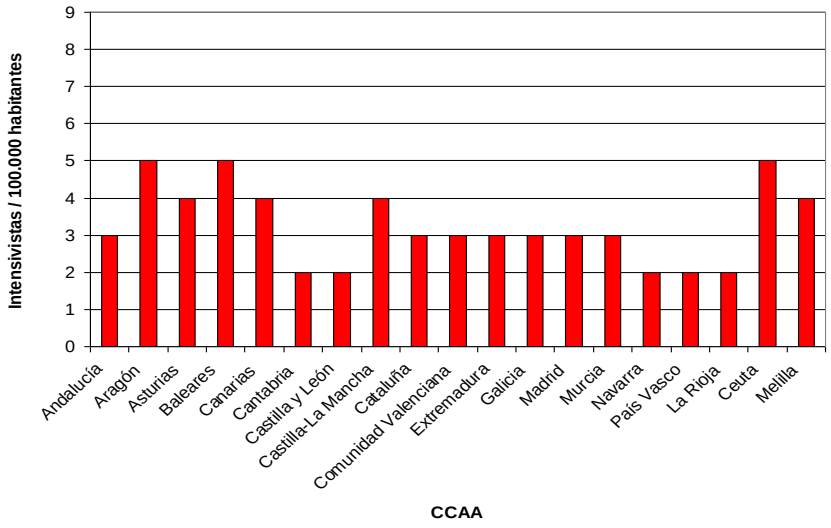

Figure 9

In relation to the intensivists' mean ages by Autonomous Communities, it was found that above the mean of 46.4 years, Cantabria ranked first with 52 years, followed by Asturias, Castilla and León and Extremadura with a mean age around 48 years. In contrasts, the communities of Baleares, Canarias, Castilla-La Mancha and Cataluña were those with the youngest mean age, around 44 years.

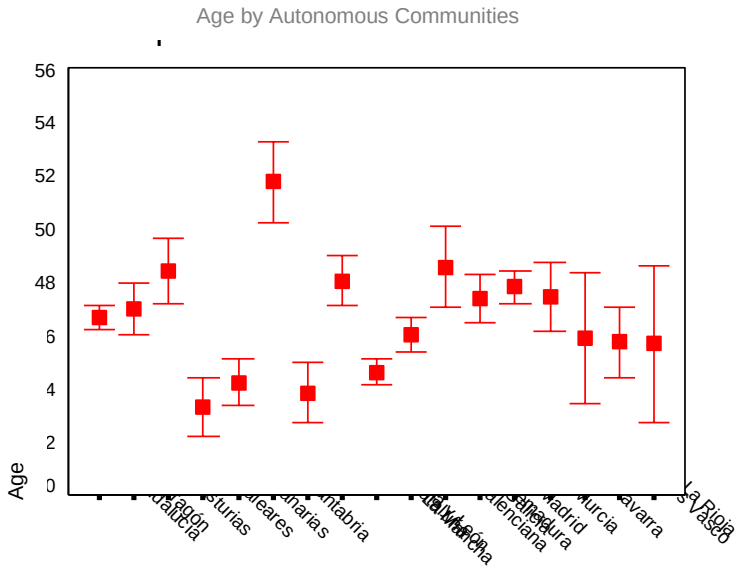

Figure 10

Regarding the number of intensivists actively working for the aforementioned scenarios of professionals supply based on a prediction of 140 residents per year, by the year 2021, the number of intensivists under 65 years old would be 3200.

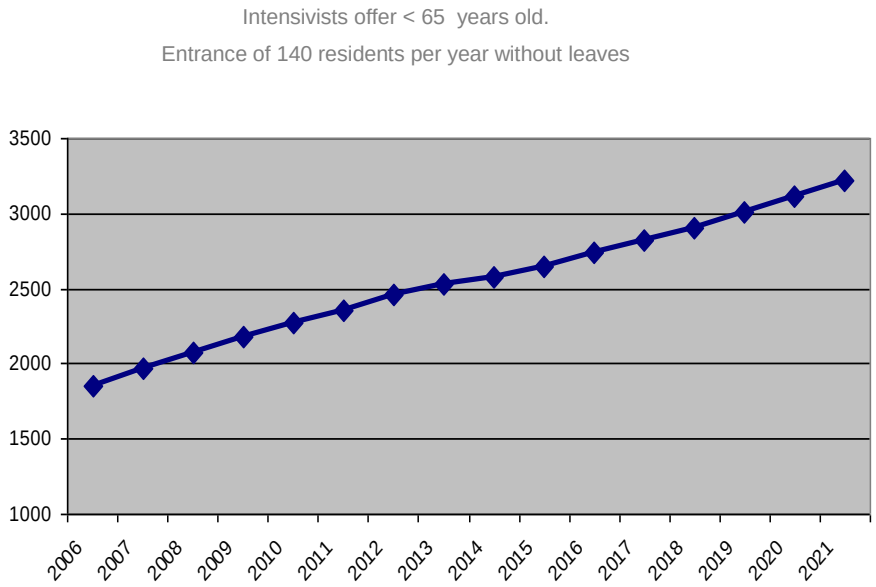

Figure 11

However, for the scenario of a drop out rate up to 20%, the number of intensivists would be 2700.

Intensivists offer < 65 years old.
Entrance of 140 residents per year with leaves

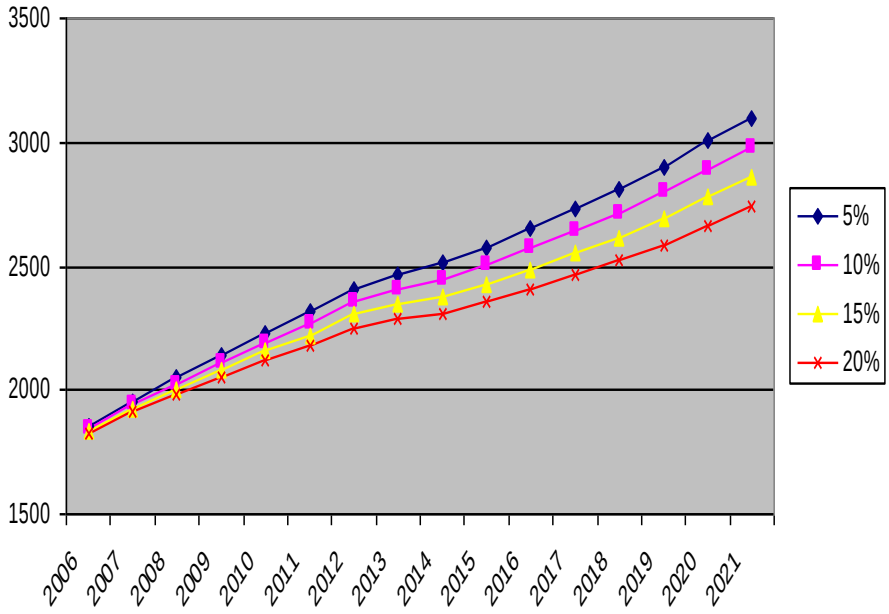

Figure 12

On the other hand, the prediction of demands for intensivists 65 years of age or younger for the year 2021 would be around 2200.

Intensivists demand < 65 years of age

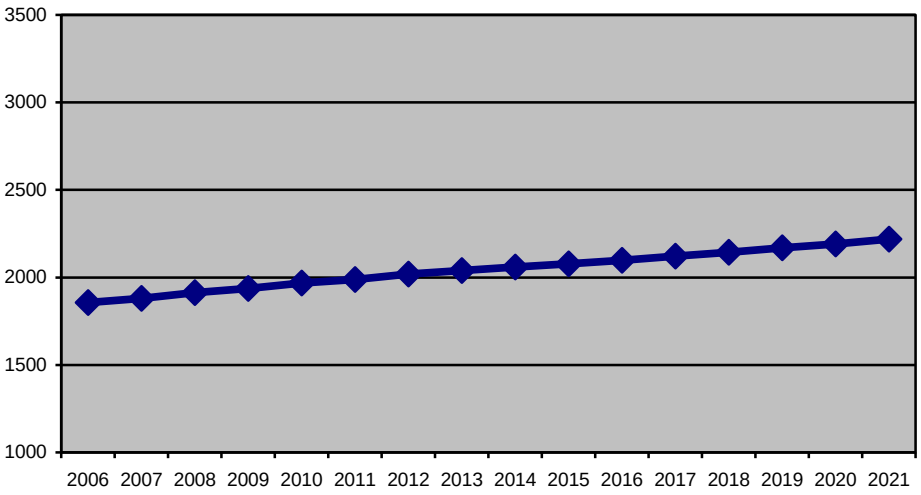

Figure 13

For the age group of intensivists under 55 years of age, the supply of professionals for the year 2021 considering a 20% drop out rate would be approximately 2000, with a prediction of demands of 1700 intensivists.

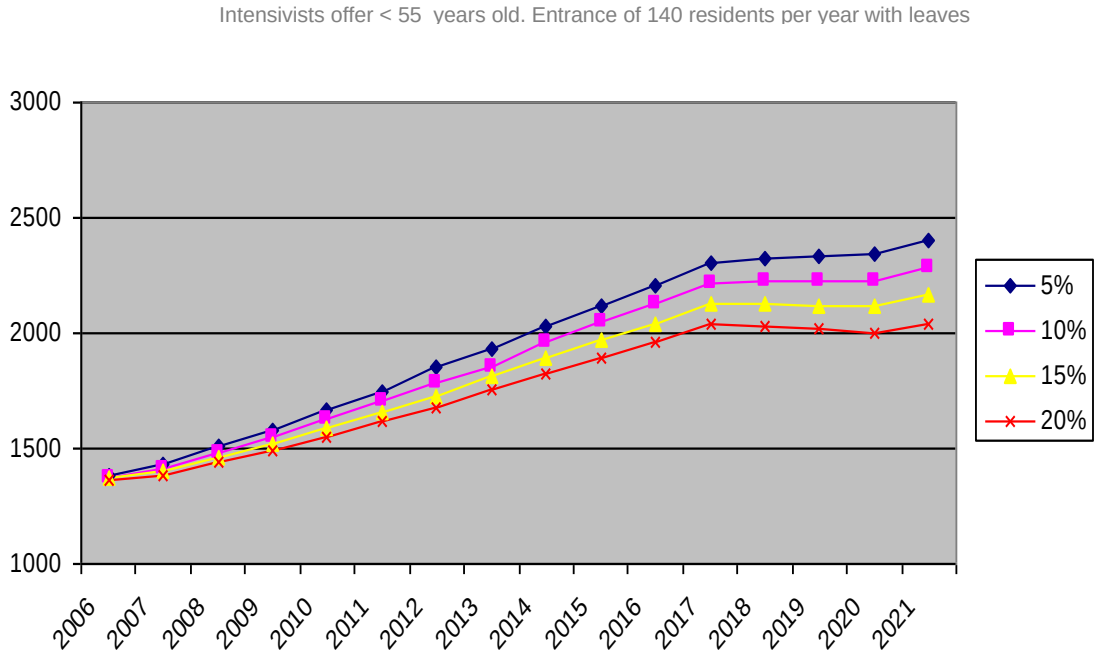

Figure 14

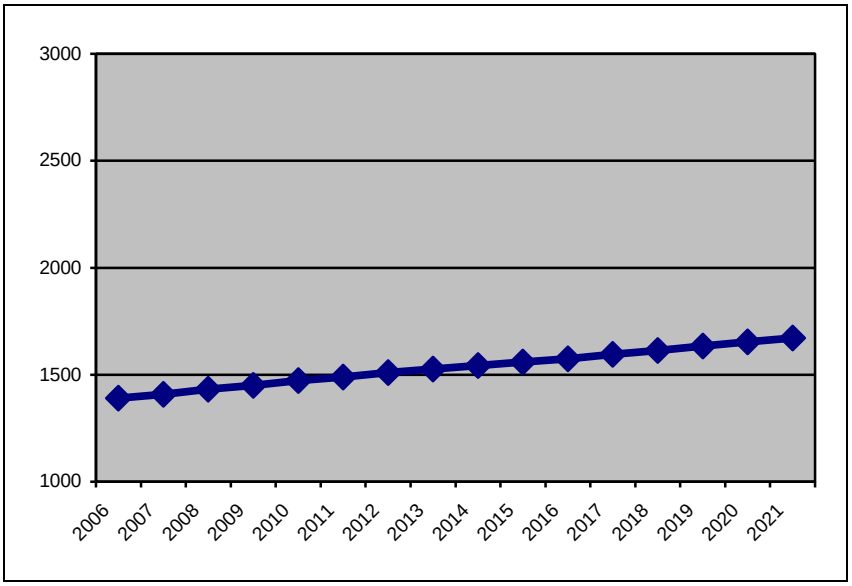

Figure 15

5. Conclusions

The present survey has allowed to know the current situation of specialist physicians in Intensive Care Medicine in Spain. According to the results obtained, it can be stated that the specialty has **an acceptable mean age** and it is even a **young specialty**, with a clear generational replacement. A progressive increase in the number of female intensivists was also observed. In relation to the scenarios of supply and demand, a sufficient number professionals to meet the future labour market demands can be predicted. It is considered adequate to maintain the current number of 167 resident physicians of Intensive Care Medicine each year. Finally, it seems necessary to confirm the progress of these results and to conduct further analyses in 4 or 5 years.