

Aging of hospital personnel and preventing physical deterioration from work

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Objective of the study

The objective of this study is to produce results that could help orient policy to prevent the effects of aging of non-medical care personnel. With this in mind, the research team has set up a scheme to analyze the breakdown in our personnel by sex and by age within the hospital, in relation to work constraints. This breakdown shows the process of adaptation by which the personnel stays on the job. Negatively speaking, it indicates the characteristics of the job considered as a penalty for constructing a durable professional path within the hospital.

Method

This research was done in two university hospitals in Lyon: Hospital 1 employs 1900 non-medical care personnel and Hospital 2 employs 1000. The method consisted of a qualitative approach and a quantitative approach and was developed and applied to first Hospital 1, and then, with the few variants, to Hospital 2.

Qualitative approach: analysis of working constraints in time

The occupational physicians involved in this study had a two-fold objective: producing an analysis as well as encouraging and supporting the thinking of agents responsible for management of the problem. The research team did not interview the agents directly. This was done by people in the second line, who, as the persons to whom complaints, questions, and demands are addressed, are in position to produce an overall analysis of constraints and difficulties of the personnel in the hospital. On the other hand, these same persons are the ones targeted for awareness work by the study on the problem of aging personnel. Three working groups were set up:

- A group consisting of doctors and nurses working in the hospital's occupational medicine service;
- A group consisting of members of nursing care management and personnel management
- A group consisting of trade union organizations (CGT and CGDT).

Each group met several times to analyze the working constraints on the personnel. Further to this approach, three analyses of working constraints in the hospital were

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developed. These analyses, which were quite similar, were then discussed in meetings between the groups. Finally, a summary was done on the points of convergence between the three groups.

A statistical analysis was then done comparing the demographic characteristics on the personnel according to whether or not they were exposed to working constraints. This analysis was done in two steps:

- single variable analysis which gave the structure of the population exposed (particularly sex and age) for each characteristic of the job and for each professional category;
- a multiple variable analysis which aimed at identifying a combination of independent variables to give a good representation and summary of the massive information collected.

The statistical analysis examined the demographic characteristics of the personnel in terms of working constraints, not as they appear in scientific literature, but as they were spontaneously expressed and categorized by the agents of the hospital. This analysis brought out relatively new elements as compared to the traditional outlook, since the constraints at work habitually mentioned (raising loads, relation to death, etc.) apparently provided relatively little explanation.

This study began in 1993 and the final processing, presentation and discussion in the various scientific or professional bodies took place in 1997-1998.

Results

This study gave three types of results:

- An analysis of the breakdown between men and women in terms of the constraints of the job;
- An identification of the characteristics of the job that are particularly painful for older workers.

1. Analysis of working conditions

The analysis process targeted valorizing the skills held by agents with institutional responsibility with regard to the overall operation of the hospital: personnel management, nursing care management, trade unions, occupational medicine service.

The experiment showed that these agents' perceptions of the problems of the staff were relatively similar. Three main dimensions in each hospital structured the analysis. These are shown in table 1.

Hospital 1	Hospital 2
Care for heavy chronic pathologies	Strong emotional involvement
Occurrence of disturbing events	Heavy technical treatment

Existence of obstacles to personalizing relations	Many medical staff involved
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Table n° 1: In decreasing order, the three main dimensions structuring the analysis of working constraints in the two hospitals.

The differences in the analysis between the two hospitals can be easily explained by their specific characteristics.

The emphasis on the emotional dimension of the activity for working group in Hospital 2 is clearly associated with the importance of two sectors in this hospital that require special accompaniment: the geriatric sector and the infectious disease service (AIDS).

The presence of a very large intensive care ward also explains part of the analysis.

Hospital 1 gives emergency care that is absent in Hospital 2.

The analysis done by the working groups takes account of the particular features of each hospital, but it also shows the importance of common concerns. On both sides, emphasis was on working relations and care, and on elements that might disturb them.

Finally, the results of the study showed that the analysis done in the working groups was a very effective instrument for studying the career paths of the personnel in the hospital. This is a first achievement.

At this stage, it would be interesting to underline a point in the method used: since this was a study of working conditions on the scale of an entire hospital, sophisticated intellectual analyses could not suffice because they cannot be applied extensively. We needed the support of the pool of experience and intelligence in the hospital itself on the current situation. These resources are therefore very important and pertinent, and in addition, they can be valorized with a relatively small effort of discussion. On this basis, a demographic analysis can refine the assessment considerably. We can go from the problem of representation of working constraints that was constructed socially, to an analysis of the impact of these constraints in reality in terms of the choice of a given category of personnel.

2. Men and women in the hospital

2.1 How men are used in the hospital

Two comments can be made on how men are used in the hospital.

A. The less skilled the position, the higher the proportion of men. This was more marked in Hospital 2 than in Hospital 1 (table 2).

Proportion of men

Professional group	Proportion of men	
	Hospital 1	Hospital 2
Nurses	11.2%	5.2%
Nursing aids (ASD)	10.8%	9.8%
Hospital service personnel (ASH)	24.0%	36.1%
Total	13.4%	11.1%

Table n° 2 : Proportion of men by professional groups in both hospitals

B. Men are not assigned randomly. They are concentrated in sectors with particular constraints. These are mainly work in shifts alternating with the night shift, contact with difficult patients and manipulating patients (table 3).

	Hospital 1	Hospital 2
Nurses	Alternations timetables with night shift Difficult patients	Alternations timetables with night shift
ASD	Alternations timetables with night shift Poorly suited premises	Heavy loads to handle
ASH	Heavy loads to handle Difficult patients	Heavy loads to handle

Table n°3: Characteristics of wards that have a significantly larger proportion of men (results from regression of logistic statistics).

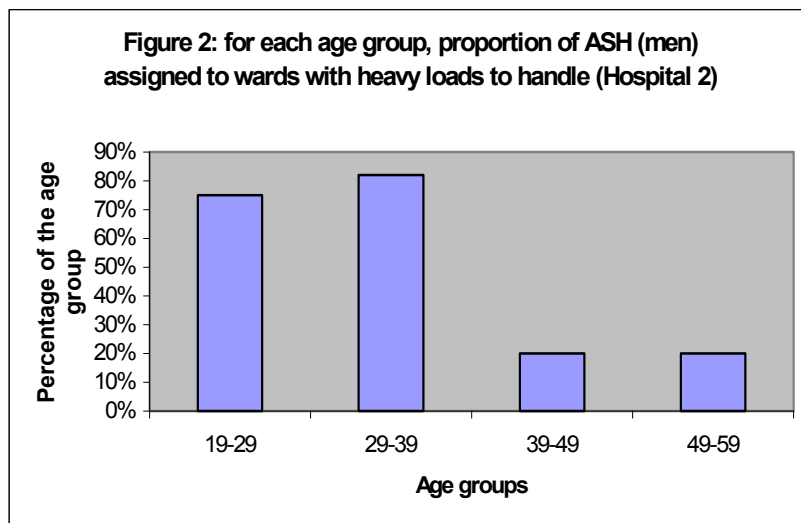
This structure of employment is necessarily a cause for concern for professionals in health at work. The priority use of one sex for a particular type of work very generally constitutes a facility that is used to circumvent problems that in fact are due to the organization of the work. This facility is often paid in terms of the health of the individuals and greater rigidity in the organization of the work itself.

The relatively large number of men in unskilled jobs is associated to two phenomena.

First, there are more men in unskilled categories because the hospital needs men to help lift the patients. The choice of men is therefore due, on one hand, to their aptitude, which is considered greater, for moving heavy loads. But if this "superiority" is effectively real from the statistical standpoint, it is greatly overestimated on the individual level. The loads raised in the hospital often exceed the capacities of men as well as of women. The AFNOR standard on acceptable limits for carrying manual loads recommends not exceeding 25 kilos for men and 12 kilos for women in the age group of 45 to 65. Even if,

on the average, a man's muscular strength exceeds a woman's by one third, this advantage does not suffice to fill the gap that separates the physiological possibilities of the requirements of the job. Men are not much more suitable for carrying the loads encountered in a hospital than women. This is particularly clear when aging and wear from work undermine the difference. Once men begin to suffer from lumbago, they are unsuitable for carrying heavy loads. And the overestimate of their capacity to carry heavy loads increases the risk of back disorders. Figure 1 shows that the AHS in Hospital 2 have trouble staying in positions requiring the manipulation of heavy loads, as they get on in age. This phenomenon is not apparent in Hospital 1 where all the AHS are younger (in Hospital 1 the age beyond which there are only 10 percent of AHS is 47 as compared to 55 in Hospital 2).

Another explanation of the large number of men in unskilled jobs has to do with the absence of requirements of extensive skills, which makes these jobs more accessible to job seekers. The structure of labour in these positions will therefore be naturally closer to that of the population of job seekers. These men therefore occupy unskilled jobs under the authority of a female hierarchy. For them, this situation is a source of difficulty in terms of their identity. This problem is still more difficult given what we have said about the way men are used for carrying loads.



In fact, if the organization of work and the vision of others restrict the professional contribution and identity of male employees to lifting patients, then, aging adds a particularly dramatic aspect for them since it tends to reduce or eliminate their capacity to do so.

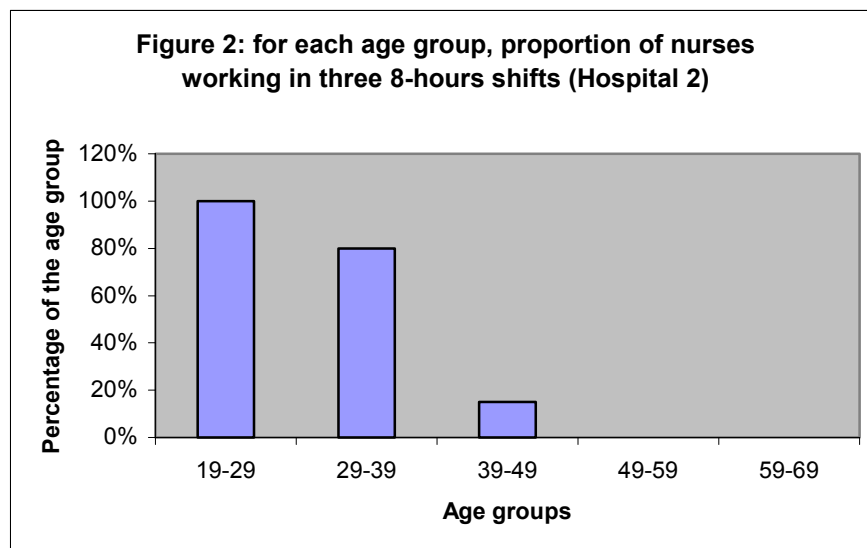
The need to take particular account of the requirements of the construction of personal and professional identity of these employees has been underlined during the discussions as a management problem.

In higher categories, men are used preferentially for positions in three eight-hour shifts or two 12-hour shifts. Here too, they must cope with a constraint that is particularly painful

for women. Variable working hours including a night shift complicate the organization of family life that is a responsibility assumed for the most part by women.

Once again, the tolerance of men for shift work must not be overestimated. It decreases after 45 and then requires a transfer to a job with a rest period at night. The financial advantages to be gained from working in shifts may lead employees to ignore the disturbance associated with poor adaptation, and to postpone this transfer to hours that correspond better to physiology. In this case, recent studies show that the return to normal hours does not guarantee that the signs of poor adaptation, and particularly trouble sleeping, will disappear.

Figure 2 shows that older nurses in Hospital 2 have more trouble staying in jobs organized in three eight-hour shifts. Once again, this phenomenon does not appear in Hospital 1 where the nurses are younger (in Hospital 1 the age beyond which there are only 10 percent of nurses is 43 as compared to 57 in Hospital 2).



In Hospital 1, preferential recruitment of male personnel is observed in wards that get difficult patients (emergency ward, penitentiary ward ...). This phenomenon is well-known in psychiatric hospitals: men are sought for their physical force, which is useful when restrictive measures must be taken. Here too, a question must be raised systematically: to what extent does the use of force cloud problems that in fact result from the organization of work?

These elements should lead to measures to:

- Limit the loads carried manually (collective organization, integrated into organization of care, manual and mechanical handling);
- Organization of work in alternative shifts with night work (childcare, transport, food, the possibility of sleeping on night jobs, supervision of poor adaptation, setting up flexible procedures that do not entail a penalty on returning to less restrictive hours);
- An analysis of violence generated by the situation and organization of work in sectors including difficult patients.

2.2 Is hospital work women's work?

The predominance of women in care professions has been discussed on several occasions in the working groups of both hospitals. If the strong presence of men in unskilled categories poses a problem of positioning for them, and a management problem in the medium and long-term for the hospital, the lack or absence of men in nursing teams was presented as a handicap in terms of social relations at work. This point of view was essentially expressed by women, and the research team tried to get further explanations on this assessment.

Arguments in favour of mixed teams can be grouped in three types of reasons.

1. In the presence of a colleague of the opposite sex, employees are more aware of their personal image. Certain types of "buddy" behaviour that is accepted between members of the same-sex are avoided in the presence of the other. More care is taken for grooming, and relations are more open.
2. The presence of men contradicts the traditional trend that more or less assimilates the nurse's role to the mother's role. It changes the vision of others, from sexual identity to professional identity.
3. The presence of men makes it easier to regulate the demands that the nursing team must face, both from patients and from doctors. It seems more difficult to make unreasonable demands on a mixed group than on a female group.

The need to employ a quota of men other than in particular jobs was strongly underlined by participants in the group from Hospital 2, which has a particularly small proportion of male nurses.

Beyond these considerations, the analysis identified characteristics of that wards that are particularly assigned to women (table 4).

	Hospital 1	Hospital 2
Nurses	Many medical staff intervening	
ASD	Particularly difficult deaths High emotional involvement Multiple skills required	

ASH	Multiple skills required Special technical skills required High emotional involvement	High turnover of patients
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Table n°4: Characteristics of wards that have a significantly smaller proportion of men (results from regression of logistic statistics).

Table 4 shows that men avoid nursing positions that must deal with a large number of doctors and nursing aid positions coping with particularly unpleasant deaths. Patience with incoherent instructions and the capacity to deal with suffering thus appear as more specifically feminine skills.

The predominance of women in the ASH in Hospital 2, in wards where the patient turnover is high, can also be explained by the higher number of cleaning jobs and therefore, here too, by the use of skills socially assigned to women.

Things are more difficult to interpret in the case of other characteristics. In Hospital 1, men are underrepresented in ASD and ASH positions in wards that involve relational activities or particular multiple skills.

This result can be interpreted as indicating that male nurses aids and hospital employees avoid these constraints. But this interpretation is uncertain. In fact, in the analysis of the working groups, the characteristics of the job situation did not apply, in principle, to a given professional category, but to a ward. However, the research team noted that the analysis emphasizes the nurses' point of view. This is particularly true for multiple skills. When a ward is characterized by a requirement of multiple skills, the reference is not to skills of nursing aids or hospital employees, but to nursing skills. Similarly, the relational component refers to wards where this characteristic has a central place. What is targeted, first and foremost, is the activity of doctors and nurses. The rejection of male nursing aides and hospital employees may in fact be related partially to an extension of the field of intervention of nurses, which means a reduction of their responsibilities.

Conflicts of roles associated with gender and men's difficulty to work as juniors under the authority of female staff were also mentioned.

The same interpretation can be proposed with regard to the lack of men in the wards with high technical requirements. This characteristic could further isolate ASH as compared to the activity of other professional groups.

Whatever the interpretation retained, it seems that if the place of men is partially determined by their capacity to carry, the role of women essentially draws on their capacity to cope (incoherent instructions, suffering of patients, junior roles...).

In conclusion, an analysis of the gender specificity of the division of work in the hospital gives a first indication of the constraints for which the response is given by the selection

of a particular group, rather than a reorganization of the work.

There is then the question of how these "capacities" change with age.

3. Characteristics of the job that penalize elderly employees

The analysis produced unexpected results: traditional constraints (loads, work in three eight-hour shifts or two 12-hour shifts, etc.) had an effect on selection in terms of age, but this was apparent, for women, only when analyses were done one constraint at a time. Conversely, these factors no longer emerged in the global processing that compared the various effects. The traditional variables in analyzing working conditions diminished in comparison to other variables whose impact on the professional path seems to be preponderant. These variables are given in table No. 5.

	Hospital 1	Hospital 2
Nurses	Activity quite unpredictable Heavy load in chemotherapy Many medical staff intervening	Particular technical skills required Many medical staff intervening
ASD	Higher overall work load High emotional involvement Relatively new supervisor	Relatively new supervisor
ASH	Relatively new supervisor	Permanent medical supervision

Table n° 5 : Characteristics of wards that penalize women over 45 in each professional group and in each hospital (results from regression of logistic statistics).

The most striking result concerns the relation to those giving instructions and organizing the work, who are doctors and supervisors. This is striking because it is unexpected and because the weight of these dimensions was apparent for all the professional groups and in both hospitals. Despite differences in methods between the study done in Hospital 1 and in Hospital 2, and although the two institutions have their own profiles, the results on this question were surprisingly convergent.

The question of instructions does not affect the three professional groups in the same way. The thought expressed by the supervisor in the discussion on the results explains this difference: "a nurse says that she works in Professor X's ward; but a nurses aid says that she works with Mrs. Y (the ward supervisor)".

The question of relations with doctors seems crucial for nurses; the question of relations with supervisors is crucial for nursing aides.

A large number of medical staff is a factor that constitutes a source of difficulty in nursing activity. Sectors characterized by the intervention of a number of doctors prefer to employ young nurses. Older nurses (men and women) do not seem to have the necessary patience.

From a certain point of view, this result confirms a well-identified phenomenon: the crucial cooperation between doctors and nursing personnel. But it is also interesting because the problem appears in its objective aspect, rather than its subjective aspect. The statistical processing in fact integrated variables more directly associated with subjective, conflictual dimensions in these relationships ("handling of responsibilities considered insufficient by the personnel", "insufficient account taken of the employees' difficulties"). But these dimensions do not emerge as determinant for the professional path. In the light of this result, and contrary a common opinion, the problem of co-operation between doctors and nurses appears to be much more of a problem of organization than a psychological problem. In other words, disagreement or conflicts have less impact than objective obstacles to cooperation.

This first point opens the perspective for action: informing the doctors of the facts that were raised by the study, promoting a collective thought process and analyzing the organization of the work in wards where many doctors are involved.

The relatively limited seniority of the supervisor is a factor that can cause difficulties for nursing aides. The data collected in this study gives us a basis for interpreting this result.

On the first statistical processing, the research team observed that some wards employed older employees although characteristics of the ward could have eliminated them, for example, nursing aides near 60 in wards where loads were frequent. This phenomenon drew the attention of the research team and we met the supervisors of these wards. In fact, on one hand it is interesting to identify the selection mechanisms, and on the other it is still more interesting to know how the personnel manage to counter them. Two striking points were observed:

- While the research team had trouble getting many correspondents (particularly doctors) to see the interest of this problem of aging, the supervisors understood right away. They are acutely conscious of what the work in their wards means for elderly employees, and they explained the adaptations in the organization of work that they implemented to ensure that the job was done while safeguarding the health of threatened persons.

- The supervisors were clearly hesitant to talk about these adaptations and sought the approval of the team. In fact, to take account of the real state of the employees, they must break down the assignments in the form of "a shift in duties", that is officially discouraged by the hierarchy. These adaptations require good knowledge of the strong points and the weak points of the staff. They can only be implemented in the context of a relationship of trust that has existed over time. But, when the supervisor changes, these adaptations change status.

For new supervisor they may be seen as "bad habits" to be discouraged urgently. In any case, the new supervisor does not have the same knowledge of the person that would enable her to take the risk associated with these practices as an acceptable compromise.

The research team observed that this problem of "bad habits" and the tension between the formal operating standards and the concrete requirements of team management was the subject of discussion between supervisors and health-care executives in training ... this is a difficult question. It must only be recognized that "starting from scratch", associated with a change in supervisors, destroys the strategies that enable elderly employees to continue to operate in the ward while maintaining their health. Changes in supervisors are extremely penalizing for older employees.

In practice, the results could lead to questioning the policy of promoting mobility of supervisory personnel insofar as this necessarily gives priority to an abstract definition of working organization.

In the current state of affairs, supervisors feel guilty about seeking the necessary compromises between the requirements of the job and resources of the personnel. Problems are handled locally, as quietly as possible. An effort to find improvements therefore cannot benefit from collective experience. It is doubtful that this means of operation helps cope with increasing tension between work in theory and work in fact, which is on the horizon given the predictable aging of the health-care personnel.

Less massively, selection factors associated with characteristics of selection are shown in the analysis.

These include:

- The unpredictable nature of activity and workload in chemotherapy for nurses in Hospital 1;
- The requirements of technical skills for nurses in Hospital 2
- The overall workload for nursing aids in Hospital 1.

The unpredictable nature of activity appears as a selection factor for age for nurses in Hospital 1 (which has an emergency room that does not exist in Hospital 2). This result corresponds to what we already know. Aging cannot be limited to the process of decline. It also carries an increase in experience. This increase is the capacity to anticipate and organize which allows "elderly" employees to have the same or better performances than younger ones. This advantage of the "elderly" is reduced when activity is unpredictable. On this item, it seems difficult to set up preventive measures.

The load in chemotherapy in Hospital 1 and the technical demands in Hospital 2 are similar reasons of influencing nurses' professional path. This refers to phenomena observed in other professional circles. Often, the introduction of new techniques does not come with a sufficient and adapted training effort for adults on the job. In addition, innovations are generally introduced "all other things being equal", when they necessarily entail changes in both individual behaviour and collective organization of the activity. These points should be considered in the hospital. It is not only possible but necessary to make a particular effort to train elderly employees to accompany technical progress. An increase in technical skills is one of the best guarantees against the risk of isolation associated with aging. On the other hand, any innovation should be taken as an opportunity to discuss the working objectives and procedures in cooperation in the ward.

When a ward is subject to an overall workload that is particularly high, the results indicate that this workload is particularly painful for nursing aides. This observation is similar to the medical observations of occupational practitioners who have come to consider that nursing aides are the group most exposed to the risk of professional burn-out from both the physical and psychological standpoints.

Nursing aides are not only the category that assumes the largest load in terms of handling patients. They are often the group whose proximity with the patients is closest although, unlike the doctors and nurses, they do not have the defensive resource of knowledgeable techniques. So it is not really surprising to observe that in Hospital 1, there is a selection effect for nursing aides in wards with "special relational involvement". Still, it is important not to make hasty interpretations. The contact with suffering and death is often presented as a painful factor in work in a hospital. It is therefore tempting to consider that elderly nursing aides leave wards with special relational involvement because those are the ones that impose this particularly difficult contact. Several elements contradict this interpretation. First of all, the analysis grid used in both hospitals included items on psychological strain: in Hospital 1 ("care for patients in terminal stages", "accompaniment for the long journey" and "particularly difficult deaths" and, "special psychological involvement", "close affectionate relationships with patients" and "accompaniment for the long journey" in Hospital 2). But none of these items seems to be related to a lack of nursing aides of more than 45. For this reason, we prefer a radically different interpretation already mentioned in the case of selection by gender. Wards with relational involvements are wards that involve contact with dramatic situations, but that is not the only aspect. They are also wards in which a large share of health-care activity is done by talking to patients. This is the case for example in endocrinology, with problems of training the patient in the therapeutic protocol. The more the wards require contact with suffering and death, the more relational involvement has a central place in the activity that mobilizes doctors and nurses. This mobilization of doctors and nurses in the relational aspect limits the independent commitment of the nursing aides. This reduction may be what leads to their desertion by elderly nurses aids .

Here too, it is extremely interesting to see that statistical results are in favour of an explanation in terms of working organization, rather than psychological terms. The question is not one of being directly in contact with suffering and death, but one of the type of organization and cooperation set up to cope with the place given to the various professional groups in providing care. In this sense, a demographic analysis weakens the image of working constraints developed on the basis of representations of the institutional agents.

Finally, it is striking to see the similarity between factors related to a lack of men and those that are related to a lack of women over 45. In fact, this study shows that nurses leave wards where there are many doctors involved and nursing aides leave wards with a special relational involvement. From this sexual division of work we had deduced the idea that the organization was banking on women's capacity to cope with a certain number of psychological constraints (in particular: incoherent instructions and junior

roles). It now seems that this "aptitude" does not stand up to aging any more than man's capacity to carry heavy loads.

These results show the limits of the attitude that consists of trying to settle problems at work by using a given group that is presumed to have a special aptitude. They lead us to think that prevention of the effects of aging on hospital personnel should be tackled, first and foremost, in terms of organization of work, rather than in terms of personnel management.