Turkish Court of Accounts

Performance Audit Report

COMBATING NOSOCOMIAL INFECTIONS

Summarized Version

DECEMBER - 2007

This report was prepared in accordance with the Additional Article 10 annexed to Turkish Court of Accounts (TCA) Law No: 832 with the Law No: 4149 and it is deemed appropriate to be submitted to the Turkish Grand National Assembly upon the decree No: 5205/1 dated 30.11.2007 of the General Assembly of the TCA.

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SUMMARY

EFFICIENCY OF ACTIVITIES IN COMBATING NOSOCOMIAL INFECTIONS

INTRODUCTION

1. **Nosocomial infection** (Hospital acquired infection) is defined as "*all infections acquired in correlation with healthcare services at inpatient healthcare facilities*" in the *Infection Control Regulation on Inpatient Healthcare Facilities,* which entered into force following its publication in Official Journal dated 11.08.2005. However, in medical literature and in practice, it is defined in general as *infection acquired in hospital by a patient in whom the infection was not incubating at the time of admission and appearing within 48 to 72 hours after admission or within 10 days after discharge*. Nosocomial infections increase the duration of hospitalization, treatment costs and works lost, and threaten not only patients but also hospital staff. In advance cases, especially in patients with decreased immunity (such as newborn, preemie, patients with cancer or AIDS, old-aged patients, etc.) it may even lead to deaths.

2. As is seen in the whole world, nosocomial infections constitute a significant problem in our country as well. Although there are difficulties in accessing sound data, the ratio of hospital-acquired infections in Turkey is regarded between %5-15. On the other hand, especially in recent years, the death of a former Minister and frequently seen infant deaths due to nosocomial infections have been discussed extensively by mass media.

AUDIT TOPIC AND SCOPE

3. This report deals with the activities combating nosocomial infections under the following main titles:
   - *Planning of activities combating nosocomial infections and the effectiveness of its organizational structure,*
   - *Effectiveness of nosocomial infections surveillance and prevention activities.*

   In this context, matters such as organizational structure of Ministry of Health in the center and the public healthcare facilities, effectiveness of infection control committee within the hospitals, physical structure of hospitals, purchasing activities of goods and services to be used in the combat against nosocomial infections, hygiene activities, hospital-acquired infections surveillance system, antibiotics use policies, training activities dealing with nosocomial infections, etc. are examined and evaluated.

4. This audit study covers totally 812 public healthcare facilities, among which 770 hospitals are affiliated to the Ministry of Health and 42 to the State Universities.
5. Due to the fact that the studies for combating nosocomial infections and the materials used for this aim are all covered under overall health services and thus, exact amount of financial resource used for this purpose cannot be calculated, the costs of the studies conducted in this field are excluded from the evaluations.

AUDIT OBJECTIVE

6. Main objective of this audit is to contribute in raising awareness and the level of knowledge concerning the importance of nosocomial infections at all parts of society and to leverage the effectiveness and efficiency of such activities and maintaining their sustainability, and within this framework, to ensure that relevant authorities take necessary measures in order to:
   - *Eradicate problems regarding planning and organizational structure in the prevention of nosocomial infections,*
   - *Remedy deficiencies in hospitals' physical structures, carry out purchasing activities in a way that is to optimize combat against nosocomial infections,*
   - *Ensure effectiveness of hygiene methods applied in prevention of nosocomial infections,*
   - *Continue surveillance and training activities in a way that is to make necessary contribution to the combat against nosocomial infections.*

AUDIT METHODOLOGY

7. In the audit carried out by Performance Audit Group,
   - Matters such as the organizational structure established for preventing nosocomial infections, studies conducted by the Ministry of Health, planned works, relations established with hospitals, etc were evaluated through meetings and interviews with authorized persons from the Ministry.
   - On-the-spot audits were carried out in 10 different provinces, at totally 19 hospitals, 5 of which are affiliated to universities and 14 to the Ministry of Health. At on-the-spot audits, the physical structure and the hygiene activities of the hospitals, especially the units incurring risk in terms of nosocomial infections were observed. Correspondences, decisions and documents likely to be directly or indirectly related with the activities towards combating nosocomial infections were examined, and officials of the infection control committee on the first hand and relevant personnel were interviewed.
   - Having considered that they would contribute to our studies and be an example of good practices; examinations and interviews were made at two private hospitals, one in İstanbul and other in Ankara, that are entitled to have Joint Commission International (JCI) Accreditation Certificate and information concerning the activities towards

combating nosocomial infections was collected.

- A survey composed of 91 questions was conducted. The draft survey was reviewed with the help of a biostatistics expert from the Ministry and finalized following its pilot implementation at a state hospital in Ankara. The number of hospitals that were sent a survey was specified through statistical methods while simple random sampling method was used via a computer program so as to determine which hospitals were sent survey. Total number of operations made at hospitals annually was taken as the basis in the selection, since it is the most risky field of activity in terms of nosocomial infections and totally 119 state hospitals replied.
- Interviews were made with the leaders of Non-Governmental Organizations on the matter of nosocomial infections in our country, and the studies of the Ministry and the hospitals were evaluated. Moreover, certain hospital construction projects that had been tendered by the Ministry were examined in terms of hygiene standards with regard to the architectural structure of hospital; authorities of various chambers of profession and associations were consulted in this regard.
- Literature and studies of other country SAIs and the international organizations such as WHO (World Health Organization), CDC (Centers for Diseases Control and Prevention) concerning this topic were used; many resources such as thesis, articles report, declaration, standards, etc. were analyzed.
- Several experts and academicians from different fields of expertise were consulted as well.

AUDIT FINDINGS, RESULTS AND RECOMMENDATIONS

I-PLANNING AND ORGANIZATIONAL STRUCTURE OF ACTIVITIES IN COMBATING NOSOCOMIAL INFECTIONS

Strategic Planning for Combating Nosocomial Infections

8. **With regard to statistical data related to nosocomial infections and existing possibilities for dealing with such infections in our country; no situation analysis has been made; the Ministry of Health has not established objectives, targets and strategies yet.** In order to clarify the current situation, only the number of the infection control nurses were determined and in accordance with Article 15 of the Infection Control Regulation, an "Annual Activity Report" in which simple data related to nosocomial infections at hospitals in the year 2005, was prepared and sent to hospitals by the Ministry. Mentioned report form was filled completely only by 12 state hospitals. Besides, systematic targets towards certain objectives related to nosocomial infections in our country were not specified; no strategies, activities, projects were designated so as to realize these targets; a sound prioritization was not made in this field and no performance criteria were specified by the Ministry. (Paragraph: 2.1.2 - 2.1.10)
9. **The economic costs resulted from nosocomial infections in our country have not been calculated by the Ministry of Health.** Development of awareness in this issue might be prevented and increase in the efforts paid for combating might be impeded; since that the costs incurred by nosocomial infections are not calculated and the total burden laid on the country's economy by such infections is not precisely put forward. Moreover, lack of sound economic data constitutes a serious hindrance to the realization of an effective analysis, spending of resources according to priorities and development of correct and coherent strategies. (Paragraph: 2.1.11 – 2.1.14)

▪ *The Ministry of Health should conduct a sound situation analysis on the country's current situation, available opportunities and the resources needed with regard to nosocomial infections.*

▪ *With a view to guiding and supporting hospitals in the minimization of nosocomial infection risks, the Ministry should determine long and medium-term objectives and targets first and then, prepare a program at national level, which is to cover strategies and activities in accordance with pre-determined objectives and targets.*

▪ *The Ministry should assess additional costs incurred by the treatments of patients with nosocomial infections through considering the type of the disease and the hospital as well as other risk factors, and calculate the total burden brought by mentioned costs to country's economy.*

Infection Control Program

10. **Most hospitals have not established an infection control program and the existing control programs are not efficient in terms of their contents.** It was observed that there is not a certain systematic applied in the infection control programs developed at certain hospitals or their contents are not comprehensive enough. (Paragraph: 2.1.15 - 2.1.25)

    ▪ *General principles governing how the infection control programs be developed by hospitals and which matters be included should be specified by the Ministerial units in charge of combating nosocomial infections via consulting experts and benefiting from the resources available in this field. It should be ensured that infection control program is developed at every hospital within the framework of these principles.*

Establishing Standards for Surveillance Applications

11. **There are no standards of application with regard to the surveillance systems implemented at hospitals.** Although there are general arrangements concerning by whom the surveillance program is developed, implemented and evaluated at hospitals in the Infection Control Regulation, standards and rules concerning how the operations within the scope of surveillance are carried out are not specified. Besides, guidelines for the development of an effective surveillance system have not been prepared by the Ministry. (Paragraph: 2.1.26 - 2.1.35)

    ▪ *General principles and standards on how and at which scope the surveillance method can be implemented in the most effective way on the basis of the type of the hospital, should be established by the Ministry through benefiting from national and international resources and the hospitals should be guided via the guidelines to be prepared.*

    ▪ *Diagnostic criteria that must be used to diagnose nosocomial infections should be established separately and published for the use of hospitals in the form of guides by the Ministry based on the infection type through benefiting from national and international resources.*

    ▪ *National Nosocomial Infections Surveillance Information System that has been installed by the Ministry and is at the testing phase should be structured effectively, supported by necessary technical equipment and personnel, and implemented as soon as possible.*

Organization in Combating Nosocomial Infections

12. **With regard to the activities towards combating nosocomial infections, no structure that is to operate effectively has been established within the Ministry.** Mainly, the activities in the field of combating nosocomial infections are carried out at central level by National Nosocomial Infections Surveillance and Control Unit (Control Unit) established within Refik Saydam National Hygiene Center Presidency together with the Department of Nursing Services affiliated to the Directorate General of Curative Services. Moreover, a "Nosocomial Infections Scientific Advisory Board" composed of 15 members with the leadership of Refik Saydam National Hygiene Center President was established. Follow-up and implementation of the Board's decisions are among the duties of mentioned General Directorate and Control Unit. However, the total number of personnel serving at each of these units is far from ensuring the effective fulfillment of these duties. (Paragraph: 2.2.1 - 2.2.8)
13. **In the activities concerning nosocomial infections, no coordination is established among the Ministerial units.** Apart from the units assigned in the field of nosocomial infections at central Ministry, some other units affiliated to the Ministry are also observed to carry out several activities with regard to nosocomial infections. However, these activities are mere individual studies; they are not recommended by Advisory Board, not carried out by the Board in coordination with Control Unit, not evaluated by them, and planned or programmed and they are not within the information of the hospitals. (Paragraph: 2.2.9 - 2.2.13)
14. **A structure that is to control the studies conducted by hospitals in the field of combating nosocomial infections has not been established.** Hospitals are not subject to necessary controls with regard to combating nosocomial infections, the only control mechanism is designated to be the hospital management itself and a central control mechanism has not been established. (Paragraph: 2.2.19)

▪ *A sound organization structure should be established within the Ministry, which can fulfill the duties of coordination and surveillance, evaluate appropriately the activity reports, the studies of infection control committees and other data flow and provide feedback to country organization. Concerning the activities dealing with nosocomial infections, the duties and authorities of the relevant units should be defined, coordination among units should be ensured and the works should be specified within a certain program and within the framework of the principles of division of labor.*

▪ *A mechanism that can effectively control the activities carried out by the hospitals within the scope of combating nosocomial infections should be established.*

Infection Control Committees

15. **The number and the qualification of infection control nurses serving at infection control committees of hospitals are not satisfactory.** According to the Regulation on Infection Control, one infection control nurse to each 250 beds is deemed obligatory. However, in the examinations made, it was detected that at a significant number of hospitals, the number of infection control nurses is lower than the number envisaged by the Regulation. (Paragraph: 2.2.27 - 2.2.33)
16. **The support of the members assigned duty at infection control committees except from those working within "infection control teams" to the activities of the committee is unsatisfactory.** Those members other than the members of infection control teams such as deputy medical superintendents, hospital managers, head nurses, etc. do not actively participate in most of the activities. (Paragraph: 2.2.34 - 2.2.35)
17. **The number of the working subgroups expected to support infection control committees is not sufficient.** In the survey conducted within the audit, it was detected that only at % 41 of the hospitals; one or more working subgroup was established in the activity field of infection control committees with a view to supporting them. (Paragraph: 2.2.36 - 2.2.38)

▪ *With a view to succeeding at combating nosocomial infections, the Ministry of Health should ensure the establishment of infection control committees in line with national and international norms at all hospitals and give necessary support to the hospitals in this regard. The rule "one infection control nurse per 250 beds" stated at Implementing Regulation on Infection Control should be adhered to and training of infection control nurses should be continued without interruption within a certain discipline.*

▪ *All members of infection control committees should actively participate in the combat with nosocomial infections and fulfill their duties and responsibilities especially in matters relevant to them. Having sub-organizations within their fields of activity should be made obligatory for ınfection control committees; hospital managements should form working groups composed of qualified personnel on maters relevant to activity fields of infection control committees.*

Training of Infection Control Physicians and Nurses

18. **Knowledge on nosocomial infections provided at schools of medicine and nursing is inadequate. Training of infection control nurses and awarding certificate to them have been delayed.** Instead of providing a special training with regard to nosocomial infections during pre-graduate period at faculties of medicine, this topic is handled at different levels only within the scope of specialization training on infectious

diseases given at post-graduate period to physicians. When it comes to nurses, no such training is provided during pre and post-graduate periods excluding post-graduate programs. Training of infection control nurses is planned to be launched in October 2007 by the Ministry. (Paragraph: 2.2.39 - 2.2.49)

19. **There are not any initiative with regard to training and certification of infection control physicians.** The Regulation does not envisage any program for the training and certification of infection control physicians but it does for infection control nurses. In addition to this, it is also made possible that the physicians having no expertise in the field of nosocomial infections and even being expert at an irrelevant field can be an infection control physician. Thus, no obligation has been introduced by the Ministry with regard to the training and certification of infection control physicians in the field of nosocomial infections. (Paragraph: 2.2.50 - 2.2.55)

- *The Ministry should take necessary steps in order to ensure that lessons on nosocomial infections are sufficiently placed in the curriculums at schools of medicine and nursing.*
- *As is the case with nurses, obligation to participate training to be organized by the Ministry and to have a certificate should be introduced to infection control physicians and the trainings of infection control physicians should be planned and implemented by the Ministry as soon as possible.*

II- EFFECTIVENESS OF MONITORING AND PREVENTION OF NOSOCOMIAL INFECTIONS

Surveillance Applications

20. **At most of the hospitals, an effective and systematic surveillance system that is to display the status of nosocomial infections cannot be developed.** According to the analysis of nosocomial infection activity reports of the year 2005 prepared by Refik Saydam Hygiene Center Presidency; % 57 of the hospitals affiliated to the Ministry of Health do not conduct surveillance. With regard to existing nosocomial infections surveillance at hospitals, it is observed that an effective and systematic structure has not been established and there are still deficiencies. (Paragraph: 3.1.2 - 3.1.10)
21. **At surveillance applications, the microbiology laboratories of hospitals are not used effectively and certain problems in this regard do exist.** The hospitals do not obtain culture specimens and make anti-biogram test on inpatients, even those showing signs of infection as a routine procedure. Today, surveillance and reporting of resistant

microorganisms, which are obstinate, are not satisfactory. At most hospitals, an effective data integration between the surveillance system used by infection control committees and laboratory automation system has not been achieved. (Paragraph: 3.1.11 - 3.1.20)

22. **Some hospital laboratories are far from having structures appropriate to produce sound outputs.** Some hospitals do not have devices necessary for defining bacteria for surveillance; periodic maintenance, calibration, internal and external quality control of the devices and the accreditation of the laboratories are not sufficiently carried out. Moreover, it is observed that at a great number of hospitals, the number of microbiology experts is below standards. (Paragraph: 3.1.21 - 3.1.32)

▪ *Nosocomial infections surveillance, which was started to be applied in general after the Regulation had been published, but is still not conducted at a great number of hospitals, should be expanded to cover all hospitals. Hospital managements should form written program and instructions that cover all the elements of surveillance such as the scope and method of the surveillance, personnel in charge of surveillance and their duties in this regard, criteria and instruments to be used, etc. These should be applied in compliance with the nature of their organizations within the framework of standards and principles to be established by the Ministry.*

▪ *Data on nosocomial infections obtained within the surveillance activities should be compared with the data collected from similar hospitals at home or abroad.*

▪ *At hospitals within the scope of surveillance; it should be ensured that the processes of taking culture specimens, conducting effectively the laboratory examinations, and transmitting its results to relevant physicians, access of infection control committees to laboratory results without any interruptions are conducted perfectly in accordance with pre-determined instructions and procedures in all cases of necessity.*

▪ *In order to benefit effectively from microbiology laboratories during surveillance; it should be ensured that work, clearance and security instructions of laboratories are prepared, deficiencies in terms of devices and personnel are supplied, and controlling of devices such as calibration, internal-external quality and periodic maintenance are carried out in conformity with standards.*

Feedback in Infection Control Studies

23. **There are defects in communicating the information concerning ratio and tendencies of nosocomial infections and the necessary measures to the management and relevant clinical personnel.** Although at certain hospitals, reporting is made at intervals shorter than three months, most of them do not even report. (Paragraph: 3.1.34 - 3.1.36)
24. **There is not a particular standard concerning the format and content of**

surveillance reports. It is seen that in most of the surveillance reports submitted to the offices of medical superintendents and to relevant units at many hospitals, only numeric data are presented and there are not any statement with regard to recommendations for solutions and the measures required to be taken in addition to numeric data. Moreover, there is not a determined standard for the calculation and the way of presentation of existing numeric data. (Paragraph: 3.1.37 - 3.1.39)

▪ *It should be ensured that surveillance reports are prepared regularly at all hospitals and communicated to relevant persons timely via an effective reporting mechanism. General principles concerning the format and content of surveillance reports should be determined by the Ministry in a way that is to increase the effectiveness of feedback function and the hospitals should report within the framework of these principles.*

▪ *Nosocomial infections ratios and tendencies of all clinics including the data belonging to previous years should be reported to all units of the hospital and in this way, the clinics would be able to make self-evaluation through comparing their situation with those of hospitals and the clinics similar to them.*

Antibiotics Use in Combating Nosocomial Infections

25. **No national policies and targets regarding the use of antibiotics have been defined in our country.** Not only does the Ministry of Health have no concrete targets and policies concerning antibiotics use, it has also no data regarding the annual amount of antibiotics consumption in the country. (Paragraph: 3.2.6)
26. **Most of the hospitals have not prepared any guidelines of antibiotics use specific to them.** Lack of guidelines of antibiotics use may lead to erroneous and unnecessary antibiotics use and arbitrary applications. Budget Implementation Directive is thought to be insufficient in this field. (Paragraph: 3.2.7 - 3.2.9)
27. **At most hospitals, culture-antibiogram test is not made.** Because of this situation, whether the antibiotics selected for the treatment will be effective or not cannot be known precisely. Thus, it leads to unnecessary and false antibiotics use. (Paragraph: 3.2.11 - 3.2.12)
28. **Satisfactory training regarding antibiotics use is not provided to physicians at hospitals.** Thus, the physicians may decide on false and unnecessary practices in terms of antibiotics use. Hence, activities dealing with nosocomial infections are adversely affected. (Paragraph: 3.2.14)

▪ *The Ministry of Health should obtain appropriate statistics at certain periods concerning antibiotics use at hospitals in our country and through using these statistics, develop policies to be implemented country-wide. Every hospital should set*

general objectives and targets in line with the policies to be developed by the Ministry, and within this context, a comprehensive guideline specific to hospital designating which antibiotics can or cannot be used and how according to the type of infection, should be prepared.

▪ *Arrangements rendering anti-biogram test compulsory before antibiotics treatments excluding emergency and exceptional cases should be made by the Ministry and the hospital managements, and trainings on the use of antibiotics should be given at certain intervals.*

National Infection Control Principles

29. **It is observed that the infection control principles are not determined by the Ministry and for this reason, there are different applications among hospitals.** Despite the fact that it is stated in the Infection Control Regulation that the guidelines covering the infection control standards for infection control activities of hospitals shall be arranged with a circular to be issued within at least six months following the publication of the Regulation; not much has been done concerning the preparation of mentioned guidelines by the Ministry in the time elapsed. (Paragraph: 3.3.2 - 3.3.8)

▪ *In order to eradicate the differences among the applications of hospitals and for the implementation of methods complying to international standards; general principles of infection control procedures should be set by the Ministry of Health through considering the opinions and recommendations of the universities, implementers and non-governmental organizations active in this field.*

Infection Control Instructions at Hospitals

30. **It is observed that there are many deficiencies in the preparations of instructions for infection control activities at hospitals in general.** A certain system and arrangement have not been established and there are some deficiencies at most of the hospitals with regard to instructions for practices such as disinfection, sterilization, hand washing, use of barrier material, waste management, isolation, cleaning, etc. within the framework of infection control. (Paragraph: 3.3.9 - 3.3.13)
31. **The infection control rules are not observed by at hospital at a sufficient level, and a satisfactory and systematic control regarding whether the rules and instructions are obeyed is not made.** There are defects in the activities especially those with regard to disinfection, sterilization, and hospital cleaning. Besides, almost at none of the hospitals, a systematic control mechanism does not exist; no written control forms at control studies are used, and in most cases of undue acts, verbal warning is regarded to be sufficient. (Paragraph: 3.3.14 - 3.3.25)

▪ *Detailed instructions specific to hospital should be prepared at all hospitals by infection control committee in coordination with relevant units; instructions should be announced to all units by hospital management; preparation of more than one instruction on the same issue should be prevented. The instructions prepared should be updated when necessary, and especially when the technical specification for procurement of cleaning services, these instructions should be taken into account.*

▪ *Necessary precautions should be taken by the hospital managements in order to ensure the infection control instructions be prepared by infection control committees be fully obeyed by all units. Trainings should be provided to hospital staff in quick succession so that they can increase their knowledge and develop habit in terms of hygiene rules, and activities to increase their motivation should be launched. The infection control committees should be active in the supporting services such as housekeeping, laundry, culinary services, waste management, sterilization, etc. to put them under control in terms of nosocomial infections.*

▪ *A control team including also the authorized persons from hospital management and infection control nurses should be established to ensure the desired level of observance of infection control instructions at hospitals; controls should be made at hospitals at regular intervals, and written control forms should be used in these controls.*

Personal Hygiene and Nosocomial Infections

32. **Personal hygiene rules such as hand washing, using barrier material such as gloves, masks, caps, etc. not wearing jewelry in risky units are not sufficiently observed.** It is seen that hospital staff have not made a routine for observing the rules such as hygienic hand washing, not wearing jewelries such as watch, ring, bracelets, etc during working hours, wearing appropriate cloths and using barrier materials, etc which are of great importance to ensure personal hygiene. (Paragraph: 3.3.31 - 3.3.38)
33. **Necessary precautions for the protection of hospital staff against professional risks are not sufficiently taken.** Each hospital staff likely to contact with patients and their blood and body fluids and to breathe the air in an environment shared with an infected patient during their daily activities is at high-risk in terms of contagious diseases. Today, it is possible to protect the staff from nosocomial infections through using various methods and instruments. However, the measures taken in our country in this regard are not satisfactory. (Paragraph: 3.3.39 - 3.3.47)

▪ *Ways to increase observance of hygiene rules at hospitals should be searched through problem-oriented approach, and factors causing inappropriate behaviors should be eradicated.*

▪ *Applied trainings with regard to nosocomial infections and the ways of self-protection should be provided to hospital staff. Those staff whose work at certain units would be unfavorable due to the nature of the work and their health conditions should be assigned work at other units. Besides it should be ensured cutters and penetrators be disposed after use and necessary equipments and methods should be used for the collection of such wastes.*

Purchase of Goods and Services at Hospitals

34. **The standards minimizing the risk of infection are not appropriately taken into account at purchases of goods and services required for combating nosocomial infections.** The goods and services to be purchased must comply with certain minimal standards (the composition, thickness, quality, raw material of the supplies) according to bacteria resistance showing variation. However, to guide the hospitals, certain quality standards that are to minimize the infection risk at purchases of goods and services necessary for dealing with nosocomial infections are not determined by the Ministry of Health. (Paragraph: 3.4.1 - 3.4.8)

    ▪ *Pre-determination of minimum standards required for goods and services used in dealing with nosocomial infections, and the materials and devices bearing high risk of infection shall bring benefit.*

35. **During the purchases of goods and services used for combating nosocomial infections, either the infection control committees are not consulted at all or their recommendations are not implemented.** It is of vital importance that the infection control committees do take part in the preparations of technical specifications for the purchase of goods and services used in combating nosocomial infections and those likely to lead such infections and their opinions be taken. (Paragraph: 3.4.9 - 3.4.10)

    ▪ *In the purchases of all goods and services related to nosocomial infections, participation of at least one member of infection control committee who has knowledge on the technical features of the goods being supplied in the preparation phase of the technical specifications and the inspection approval commission at purchases of all goods and services relevant to nosocomial infections.*

Physical Structure of Hospital Buildings

36. **The Ministry of Health has not determined hygiene standards for the architecture of hospital buildings**. The physical conditions of a hospital play an important role both in the appearance of nosocomial infections and in the effectiveness of the combat with those infections already appeared. However, there is not any sufficient study by the

Ministry concerning the preparation and the approval of hospital building projects, as well as, the architectural standards required to be observed while implementing these projects. Some existing studies are also unsatisfactory in terms of scope and content. (Paragraph: 3.5.7 - 3.5.11)

37. **Building requirements programs, punch lists, and technical specifications do not comply with each other and these documents are not taken into consideration during the preparations of the projects.** Harmonization among building requirements programs, punch lists and technical specifications, which are the technical documents drafted before the construction of buildings is of great importance in terms of project preparations and prevention of accidents likely to happen during the construction. The current practices in this matter do adversely affect activities dealing with nosocomial infections, as well as general healthcare services. (Paragraph: 3.5.12 - 3.5.17)
38. **The project design and building control authority is not equipped with sufficient information on health architecture and hygiene.** This makes the harmonization to standards of hospital hygiene during project design and construction difficult. (Paragraph: 3.5.18 - 3.5.20)
39. **The opinions and recommendations of infection control committees are not taken in the preparation of technical specifications for procurements and inspection approval operations.** It is necessary that infection prevention principles are implemented in the goods and services purchase, as well as during the activities of maintenance and restoration and thus, infection control committee members should be included in the process for relevant issues. (Paragraph: 3.5.21)
40. **Sufficient isolation precautions are required to be taken at places where maintenance and restoration are performed.** This situation poses risk especially in terms of airborne diseases. (Paragraph: 3.5.22 - 3.5.23)
41. **Most hospital units do not have a physical structure appropriate for dealing with nosocomial infections.** Impractical physical conditions have an adverse effect on both the appearance of nosocomial infections and the effectiveness of the activities dealing with such infections. (Paragraph: 3.5.24 - 3.5.53)

- *The Ministry of Health should determine in detail the national hygiene standards of hospital architecture concerning the interior design plans of hospital units and their locations inside the building, plans for passages among units, air-conditioning, elevators and the status of sanitary installation systems, the features of the construction materials to be used, etc.*
- *Published formal documents such as building requirement program, punch list, technical specification, etc. should be reviewed, their deficiencies should be eradicated and their compliance to each other should be ensured so as to cover all hospital units and architectural elements in terms of both architectural plan and the*

materials used through applying a multidisciplinary approach at all technical areas. Measures in order to ensure compliance with building requirement program and punch list should be taken during the preparations of hospital building plans by the Ministry. A project should be developed for the hospital buildings in accordance with predetermined architectural standards, and necessary administrative and organization structure should be established in order to ensure that hospital buildings are constructed in accordance with these projects.

▪ *Structures of existing control committees should be reinforced. Those personnel assigned duty both in project design and building construction should be given trainings concerning health architecture standards and their implementation within a certain program in the form of in-services trainings, and these trainings should be updated in parallel with new technological developments.*

▪ *Infection control committees should be ensured to take active part in restoration and maintenance activities, as well as in the preparations of technical specifications concerning the supply of construction material and in inspection approval operations.*

▪ *Control measures that are to provide necessary isolation measures at hospital units under restoration should be developed, and possible risks should be minimized through cooperating with infection control committee on this matter.*

▪ *While preparing projects for and structuring of hospitals units bearing high risk of nosocomial infections such as operating theatres, central sterilization unit, intensive care unit, ect., generally accepted scientific criteria should be taken into account, and deficiencies of these units in terms of medical devices and materials should be covered. Especially, through considering patient density in the whole country, those hospitals in need of newborn and adult intensive care units should be detected, and the patient density in these units should be decreased through putting new fully equipped units into operation.*

Observing Decisions of Infection Control Committee

42. **In general, infection control committees do not gain an institutional identity within the hospitals.** This does adversely affect the image of infection control committees in the eyes of hospital staff, lead to irregularity and undisciplined acts within the committee and its relations with hospital management. (Paragraph: 3.6.2)
43. **Decisions taken by infection control committees are not announced effectively to the general hospital.** Thus, a common action cannot be achieved in the implementation of the required measures. (Paragraph: 3.6.3 - 3.6.5)
44. **Support of hospital management to decisions taken by infection control**

committees and application of them by hospital staff are not at desired levels. The activities and the decisions of infection control committees form the basis of infection prevention; thus, this situation is the leading factor negatively affecting infection prevention. Moreover, the support given by the hospital management is, generally, limited with the interest of medical superintendents to the topic. (Paragraph: 3.6.6 - 3.6.15)

45. **Activities and behaviors required in combating nosocomial infections are not controlled at a sufficient level.** Several control activities made so far are far from being regular, continuous and systematic. (Paragraph: 3.6.16- 3.6.19)

    - *The decision-making, correspondence and record processes of the infection control committees should be based on a certain formal format and order. All the decisions of infection control committees the implementation of which are compulsory should be communicated fully to relevant hospital units by the medical superintendents of hospitals, and it should be controlled whether the decisions taken are observed or not.*

    - *Acts incompatible with the decisions of infection control committee should be followed by hospital management, the reasons for disobeyance should be detected, and problem-oriented solutions should be developed by the clinics. Studies towards increasing knowledge and awareness with regard to nosocomial infections of hospital staff should be performed.*

    - *Hospital management should notify in writing the establishment, responsibilities, and authorities of infection control committee to all units, and give necessary support for the implementation of decisions rendered by the committee within the scope of existing possibilities. Hospital managements should prepare workforce planning and develop an effective control mechanisms required to ensure that the infection control committees fulfill their control duties, and when necessary, materialize deterrent and encouraging arrangements so as to increase observance to the activities of infection control committees.*

Training Hospital Staff

46. **Trainings on nosocomial infections provided at most hospitals to medical personnel and supporting stuff are not satisfactory in terms of program, content and participation.** This negatively affects activities dealing with nosocomial infections mostly based on the factor of personnel at hospitals, and leads to a decrease in the interest and sensitivity of personnel to mentioned issue. (Paragraph: 3.7.1 - 3.7.9)
47. **Training objectives are not determined beforehand, and the results of the realized trainings are not evaluated.** It would be wrong to expect high benefit from those trainings with no pre-determined objectives. Besides, evaluation of how far the objectives

are achieved shall lead to future training programs. (Paragraph: 3.7.10)

▪ *With a view to ensuring the nosocomial infections trainings that is to be provided at hospitals reach a certain standard, the Ministry of Health should prepare manuals to guide hospitals for their training programs on nosocomial infections, and should give necessary support to hospitals so that they benefit from contemporary adult training methods.*

▪ *All medical and supporting personnel, especially newcomers, should be provided with regular trainings within the scope of a program appropriate to the work of target audience and they should be informed about the control and prevention of nosocomial infections.*

▪ *The targets expected from trainings should be explicitly stated, and whether the training targets are achieved should be evaluated through survey, test and observance methods performed before and after the realization of the training.*

Training Patients' Caretakers

48. **Steps taken for informing the society at national level and the patients and their caretakers at hospitals and raising awareness among them concerning nosocomial infections are far from being satisfactory.** (Paragraph: 3.7.12-3.7.14)

▪ *Apart from information regarding patient's disease and its treatment, patients and their caretakers should be given information systematically on hospital-acquired infections and the activities dealing with these infections through using appropriate instruments. In this way, awareness would be raised among patients and their caretakers and their observance of rules would be ensured. The Ministry of Health should determine general objectives, essentials, procedures, and principles in order to meet the information need of society regarding nosocomial infections; when necessary, cooperate with training institutes and non-governmental organizations on this issue.*

(NOTE: Full text is available in Turkish at :

http://www.sayistay.gov.tr/rapor/rapor3.asp?id=76