

Supplementary Table 1. The changes made in the hospital components when restructuring non-teaching hospitals into teaching hospitals

GENERAL NON-TEACHING HOSPITALS		RESTRUCTURING INTO GENERAL TEACHING HOSPITALS	RESEARCH STAGES
Goals and mission of the organizations			
Unity of purposes	-Failure of the principle of unity of purpose (increase in organizational goals and integration of education and treatment goals) - Complexity in prioritizing organizational goals		Learning from previous experiences of hospital restructuring
Balancing missions	- Missions overcoming each other - Increase in the need to fit missions with facilities		
Clinical and support departments			
Number of departments and beds/number of wards	Inpatient wards	New wards: Some ICUs, Intermediate Care Unit, Adult and Pediatric Specialties Decrease: Pediatric, Internal, LDR, Postpartum, Reconstructive Surgery, and Hematology wards Increase: CCU, some ICUs, Surgeries related to women and infants, as well as Burn, Eye, and Transplant wards	Checking the status quo
	Star wards ¹	New wards: Angiography and IVF Decrease: Postpartum, Dialysis, and Outpatient Emergency Departments Increase: Obstetrics-related wards, Emergency Operating Room, as well as Chemotherapy, Thalassemia, and Hemophilia wards	
	Clinical wards	New wards: Oncology, Immunology, Diagnostics and Rehabilitation, and Adult and Pediatric Surgery wards Decrease: Hemophilia and Cardiac Rehabilitation wards Increase: Internal, Infectious, Dermatological, and Nutrition wards	
	Paraclinical wards	New wards: Angio, Nuclear Medicine, Density, Extracorporeal Crusher, Cobalt Therapy, Excimer Laser Increase: Medical and Pathology Laboratory, Pharmacy, Radiology, Ultrasound, CT-scan	
Development of departments	Specialized and sub-specialized wards	Increasing the number of wards and providing the ground for increasing the number of shifts	Examining the current situation/experiences of previously restructured hospitals/systematic search
	Official and support units	Quantitative and qualitative development of wards	
	Hospital Committees	Forming new committees and making them more active	Learning from previous experiences of hospital restructuring
	Medical Equipment	Increasing the number and variety of medical equipment in the wards	
	-	The strong desire of hospital staff to restructure the hospital into a research hospital	
Physical space of the hospital			

¹ Beds occupied for a short while are star beds, which include beds in dialysis, thalassemia, operating room, maternity, oncology, hemophilia, chemotherapy, and emergency departments.

GENERAL NON-TEACHING HOSPITALS		RESTRUCTURING INTO GENERAL TEACHING HOSPITALS		RESEARCH STAGES	
Based on standards	<div>24665-37150 square meters</div> <div><div>77 % of the entire hospital</div><div><div><div>Inpatient wards (44%)</div><div>Star wards</div></div><div><div>Paraclinical wads</div><div>Support wards</div></div></div></div>	<div>27415-39936 square meters</div> <div>21 % increase (5200 square meters)</div> <div><div>71 % of the entire hospital with a 16% increase</div><div><div><div><div>Inpatient wards (44%) 16% increase</div><div>Star wards 8% increase</div></div><div><div>Paraclinic wards 30% increase</div><div>Clinical wards 14% increase</div></div><div><div>Teaching wards (3% of the entire)</div><div>Support wards 18% increase</div></div></div></div></div>	<div>- Increase:</div> <div><div><div>area of wards</div><div>Active bed in inpatient ward</div></div><div><div>area of Paraclinical wards</div><div>Active hospital bed</div></div></div> <div>area of clinic wards</div> <div>Active Hospital bed</div> <div>space available per staff</div> <div>decrease:</div> <div><div>area of star wards</div><div>active bed in star wards</div></div>	Reviewing standards/Learning from previous experiences of hospital restructuring	
	<div>11496 square meters</div> <div><div>42% of the entire hospital</div><div><div><div>Inpatient wards</div><div>Star wards</div></div><div><div>Paraclinic wards</div><div>Other buildings</div></div></div></div>	<div>13481 square meters</div> <div>17 % increase (1985 square meters)</div> <div><div>45% of the entire hospital with an increase of 25%</div><div><div><div><div>Inpatient wards 19% Increase</div><div>Star wards 0.14% decrease</div></div><div><div>Paraclinic wards 72% increase</div><div>Clinical wards 69% increase</div></div><div><div></div><div>Other buildings</div></div></div></div></div>	<div>Increase:</div> <div><div><div>area of hospital wards</div><div>active bed of hospital ward</div></div><div><div>Area of clinic wards</div><div>active hospital bed</div></div></div> <div><div>Area of paraclinical wards</div><div>Area of star wards</div></div> <div>active hospital bed</div> <div>active bed of star wards</div> <div>Available space per patient in inpatient, Star, and paraclinical wards;</div> <div>Space available per staff</div>	Examining the current situation / learning from previous experiences of hospital restructuring	
Clients					
Frequency of hospitalized	Inpatient wards	Decrease: Frequency of hospitalized patients ; <div><div>Patients in inpatient wards</div><div>Active bed in inpatient wards</div></div>			Composition and type of patients
	Star wards	Decrease: Frequency of patients in star wards Increase: <div><div>Patients in star wards</div><div>Active bed in star wards</div></div>			
	Paraclinical wards	Increase: frequency of paraclinical patients ; <div><div>Paraclinical hospitalized patients</div><div>Active hospital bed</div></div> ; <div><div>Outpatients in Paraclinical wards</div><div>Active hospital bed</div></div>			
Hospitalized patients on a	Referral and non-referral patients	Decrease in referral patients			Composition and type of patients
	Type of insurance	Increase: Providing services under the insurance coverage of organizations, supplementary insurance, and basic insurance Decrease: Providing services under the insurance coverage of vulnerable groups			
	Service provider	Increase: Clinical wards Decrease: Inpatient, Emergency, and Paraclinical wards			
Patients based on their files	Referral and non-referral patients	Decrease in referral patients			Composition and type of patients
	Type of insurance	Increase: Providing services under the insurance coverage of organizations, supplementary insurance, basic insurance, and insurance for vulnerable groups			
	Service provider	Increase: Clinical wards Decrease: Inpatient, Emergency and Paraclinical, Intensive Care, Intermediate Care, and Surgery			
	Type of admission	Decrease in hospital admission, outpatient, and emergency			
Skilled staff					

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Number of staff / organizational positions		Increase: 115 people based on current status (14%), and 157 positions based on standards (18%); $\frac{\text{Number of staff}}{\text{Active hospital bed}}$		Checking the status quo	
Number of staff/positions based on field of activity		- Increase in all areas of activity: the highest increase in the field of nursing (46% based on current status, and 55% based on standards), expertise and support staff (31% based on current status and 29% based on standards), and faculty members - Increase: $\frac{\text{skilled workers}}{\text{support workers}}$			
Type of employment		Increase: Formal, contractual, and corporate Decrease: Service obligation, service purchase contract, and without employment relation			
Instructions and processes for role-playing		Content change		Learning from previous experiences of hospital restructuring	
Empowerment and continuous training of the workforce		Requirement change			
Virtual access		The need to provide virtual access to attending physicians			
Supervision of service delivery		The need to strengthen supervision of service delivery			
-		Shift in labor force (using students in service delivery)			
Internal and external relations					
Intra-organizational	Individual and group communication	Increasing the number and level of communications		Learning from previous experiences of hospital restructuring	
	The role and position of senior managers	- Changing the role and position - Changing the coordination of job descriptions with authorities and responsibilities - Changing the distribution of power due to position and authority			
	Levels of conflict	Improving the interpersonal, group, and organizational levels			
Extra-organizational	The islanding performance of the upstream organization	Improving the impact		Learning from previous experiences of hospital restructuring	
	Obtaining permits	Multiplicity of supervisory organizations in obtaining licenses			
	Contracts	Increasing the number and level of contracts			
	Related natural and legal persons	- Increasing the number and type of people associated with the hospital - The need for a transparent communication process between the hospital and the faculties			
Type and level of services					
Received services		- Increase: Patients receiving rehabilitation services; Patients receiving the number of services equal to the average; Patients receiving more services than average - Decrease: Patients receiving paraclinical services; Patients receiving one service; Patients receiving three services; Patients receiving services below average - Increase in the frequency and level of services - Clinical complexity of patients		Patient composition/hospital experience / systematic search	
Type of the patient file document		Increase: Inpatient and global file type Decrease: Outpatient file type		Experiences of previously restructured hospitals	
Orders		Increase in paraclinical orders		Hospital experience/systematic search	
Dispatching the patient		Increase in realizing the dream of not sending the patient to receive services			

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Access to services	<ul style="list-style-type: none"> - Upgrading the frequency, type, and level of government tariff services for disadvantaged areas - Faster access to services at nights and holidays 		Learning from previous experiences of hospital restructuring
Hospital processes			
Frequency of key processes	<ul style="list-style-type: none"> - Increase: the number of key processes; the repetition of processes - Formation of new processes: Implementing teaching courses, training non-medical learners, monitoring the implementation of teaching accreditation, evaluating learning performance for learners and two-way feedback, holding morning, implementation of grand round, delivery of tools and equipment to learners - Reinforced processes: Dispatching/transferring patients, medical consultation, medical equipment, monitoring the implementation of accreditation documents, admission of hospitalized patients, admission and assignment of patients in the emergency department, assignment of patients in the clinic, training new clinical staff, dealing with critically ill patients in wards, dealing with critically ill patients in the clinic, monitoring the correct completion of the patient file 		Analysis of key processes/learning from previous experiences of hospital restructuring/systematic search
Number of steps of the process	<ul style="list-style-type: none"> - Increase in the number of steps in similar processes (sometimes doubling) - Increase in the steps requires different decisions depending on the workstations. 		
People responsible for completing the steps of the process	<ul style="list-style-type: none"> - Change in the number and variety of people - Possibility of replacing students with medical staff (according to instructions) - Simultaneous presence of students and medical staff in some steps 		
Steps and paths of the process	Increasing the decision-making stages and variety of routes		
Planning	Improving the dependence of unit planning on committee approvals		Learning from previous experiences of hospital restructuring
Organizing teaching missions			
-	- The need to develop an organized structure to ensure the interests of educators and learners		Learning from previous experiences of hospital restructuring
-	- The need to develop motivational leverage for residents as elements of attraction		
-	The need to develop guidelines for observing the principle of respect for the learner		
-	The need to organize the guidance and supervision of non-medical education		
-	The need to monitor the proportional distribution of patients among learners		
Internal and external customer satisfaction			
Centers of satisfaction	Increase in diversity		Learning from experiences of restructuring hospitals/systematic search
Level of and reasons for satisfaction	<ul style="list-style-type: none"> - Decrease in level of satisfaction - Changes in reasons for dissatisfaction 		
-	The need to inform and clarify missions for domestic and foreign customers		
-	Developing a mechanism to cover potential material and spiritual costs for clients		
Performance evaluation			

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Hospital performance	<ul style="list-style-type: none">- Overall: Hospital performance decreased- Increase: Percentage of bed occupancy in inpatient wards; Total length of stay in the hospital; Duration of stay in inpatient wards; Duration of stay from four to 30 days- Decrease: Duration of stay more than 30 days; Less than 24 hours; Flat turnover rate	Patient composition/ learning from previous experiences of hospital restructuring / systematic search	
Clearance status	Increase: patients discharged with full recovery and death rate Decrease: patients discharged with partial recovery and transferred to another center	Composition and type of patients	
Performance evaluation system	<ul style="list-style-type: none">- Changing the components of the system- Increasing the evaluation indicators- Changing the response centers- Increasing the need to develop encouraging internal regulations- The need to develop a codified system for evaluating the performance and two-way feedback of the education system	Learning from previous experiences of hospital restructuring	
Empowerment of human capital			
Skill and information level of the staff	Creating grounds for enhancing all levels of the organization by confronting new topics and people	Learning from previous experiences of hospital restructuring	
Motivation and diligence of the staff	Creating grounds for increasing motivation and diligence of the staff		
Education courses	Easier access		
Organizational behavior			
Individual and group behavior	Changes at all levels and units	Learning from previous experiences of hospital restructuring	
Organizational motivation and commitment	<ul style="list-style-type: none">- Increase (in the ideal teaching hospital)- Changing areas of motivation		
Effective interaction	Increase in the need for effective interaction training		
Individual and group decision-making	Changes in levels and practices		
Income-cost management			
Dedicated income	The increase in hospital capacity to admit patients	Learning from previous experiences of hospital restructuring	
Treatment costs	The increase for the patient and the health system		
Performance-based payment	The need to change the structure (educational performance in parallel with therapeutic performance)		
Non-financial motivation of staff	The increase in the need to develop mechanisms		
Reimbursement of expenses	The need to change repayment methods		
Hospital costs	<ul style="list-style-type: none">- Increase in information management, facilities, and equipment costs- Emergence of hidden costs on education		
Cost-effectiveness and efficiency			
Centers influencing effectiveness and efficiency	Increase in diversity	Learning from previous experiences of hospital restructuring	
Senior executives and effectiveness and efficiency	Change in the role of senior managers		
Providing hospital resources and missions	<ul style="list-style-type: none">- The complexity of coordinating policy demands with the provision of resources for hospital missions- The complexity of providing comprehensive arrangements tailored to hospital missions		
The quality of services			
Quality of services	Decrease in the quality of clinical services		

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Clinical performance of nurses	Increase: expertise of nurses		Learning from previous experiences of hospital restructuring /systematic search
Quality of information registration	Increase: death information record		
Hospital waste production	Increase in production rate (especially hazardous waste)		
Legal and social responsibility			
Legal and social responsibility of the management team	Increase		Learning from previous experiences of hospital restructuring
Corruption of the health system	Increase in cases of bribing for guiding the patient out of the hospital		
–	Gaining general reputation and branding		
–	Hospitalization in the media and news agencies		
Governance and policy-making			
Monitoring	- Change in accountability mechanisms - Increase in the need for transparent contracts and memoranda of understanding directly or under the supervision of the ministry as the hospital trustee		Learning from previous experiences of hospital restructuring
Treatment grading system	Change in the position of the hospital		
Missions expected by policymakers	The need for transparency and level change		
Structure	- The need to review and change the organizational hierarchy of the hospital - Failure of the principle of unity of command - The need to review and clarify the duties and powers of the management team		