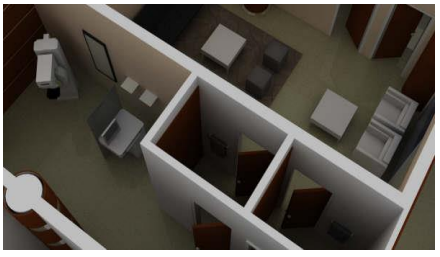
PLANNING AND DESIGN

DIAGNOSTIC IMAGING AND RADIOTHERAPY

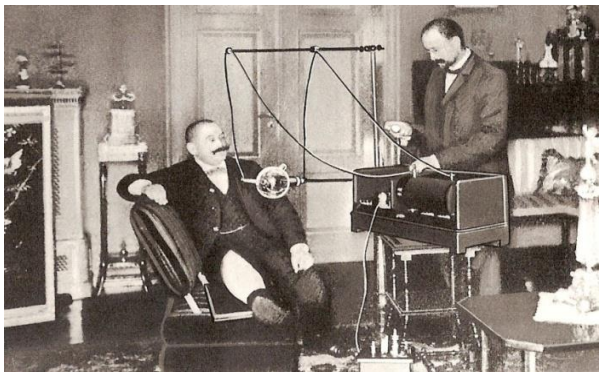
DEPARTMENTS



J.A. GARCIA

CONTENT

I.- HISTORICAL EVOLUTION



I. RADIOLOGY

II. RADIOTHERAPY

III. NUCLEAR MEDICINE

IV. ULTRASOUND

V. COMPUTED TOMOGRAPHY

VI. MAGNETIC RESONANCE

VII. OTHER IMAGING TECHNIQUES

VIII. INFORMATION SYSEMS. PACS

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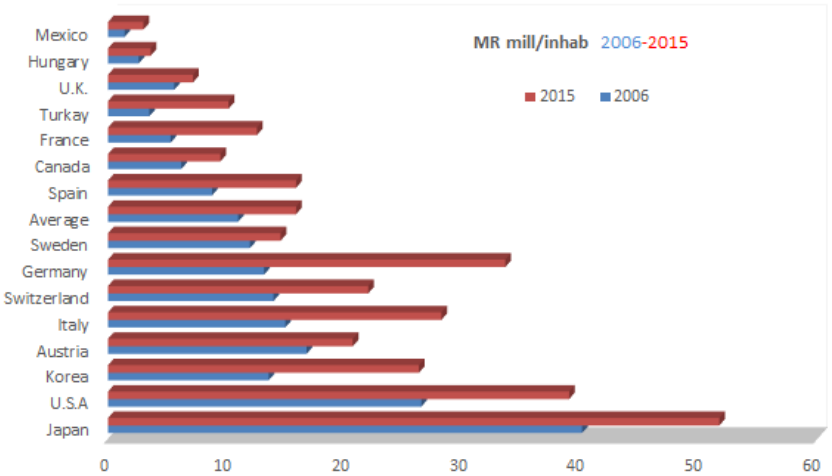

I. **HISTORIC EVOLUTION OF DIAGNOSTIC IMAGING COMSUMPTION**

II. **FREQUENCY**

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IV. **EXAMINATION TIME**

V. **POINTS TECHNIQUES**

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III. REGIONAL HOSPITALS

IV. GENERAL HOSPITALS

V. VERY LARGE HOSPITALS

VI. MONOGRAPHIC HOSPITALS

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VIII. MOBILE DIAGNOSTIC IMAGING

IX. IMAGING IN THE HOSPITAL OUTSIDE DE IMAGING DEPARTMENT

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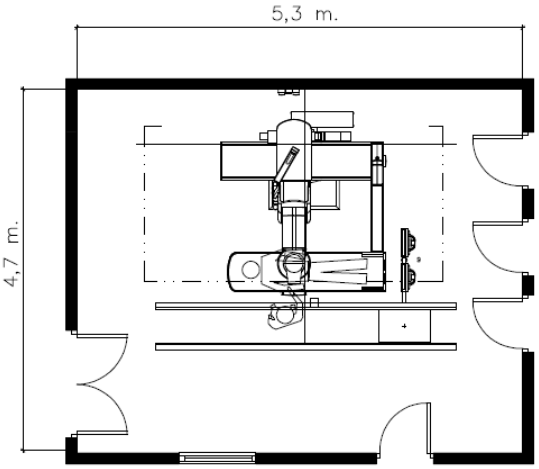


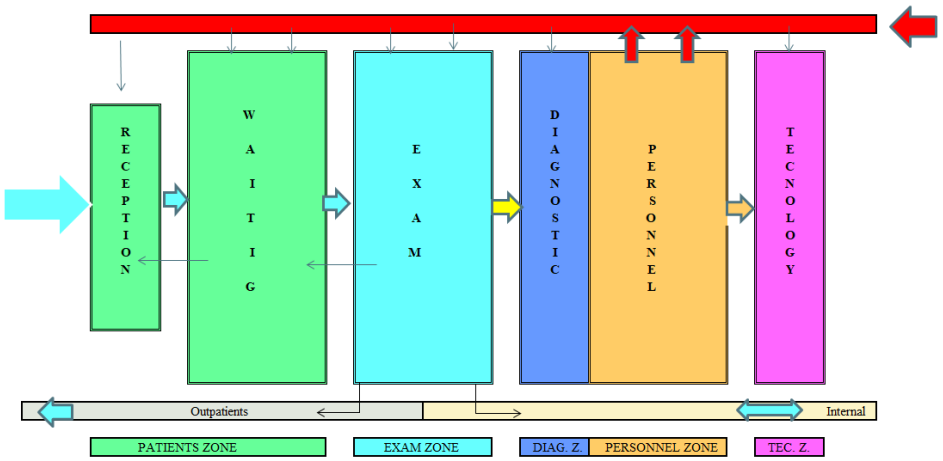
I.- RADIOLOGICAL TECHNIQUE MODALITIES

II.- SLICE TECHNIQUE MODALITIES

III.- NUCLEAR MEDICINE MODALITIES

IV.- RADIOTHERAPY SYSTEMS

V.- ZONES AND SPACES



I. ZONES

II. LOCATION OF THE IMAGING DEPARTMENT

III. CALCULATION OF THE DEPARTMENT SURFACE:

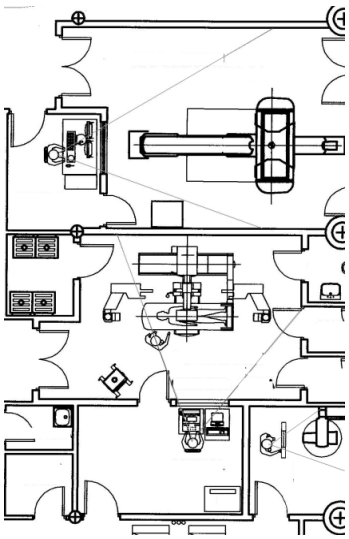
III.I IMAGING

III.II NUCLEAR MEDICINE

III.III RADIOTHERAPY

IV SPACES

VI.- DESIGN OF IMAGING ROOMS



I. ASPECTS RELATED WITH THE PATIENT

II. RELATED WITH THE PERSONNEL

III. RELATED WITH THE EQUIPMENT

IV. RELATED WITH THE ARCHITECTURE AND CONSTRUCTION

V. WITH THE TECHNOLGY

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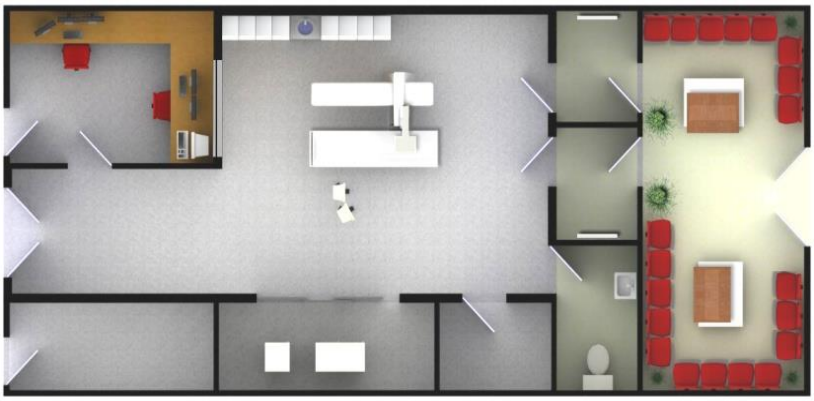

I. RADIOGRAPHIC ROOMS

II. FLUOROGRAPHY RADIOGRAPHIC ROOMS

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IV. ANGIOGRAPHY AND ANGIOCARDIOGRAPHY

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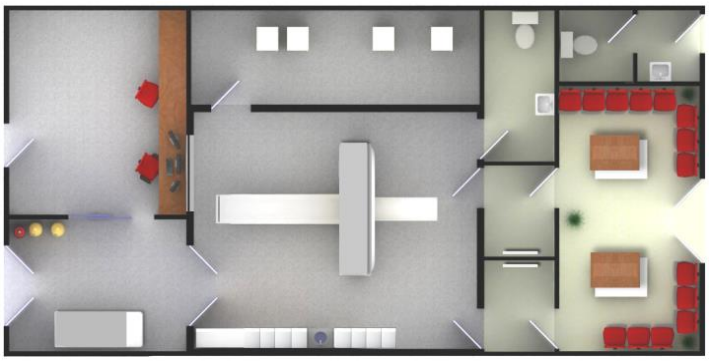
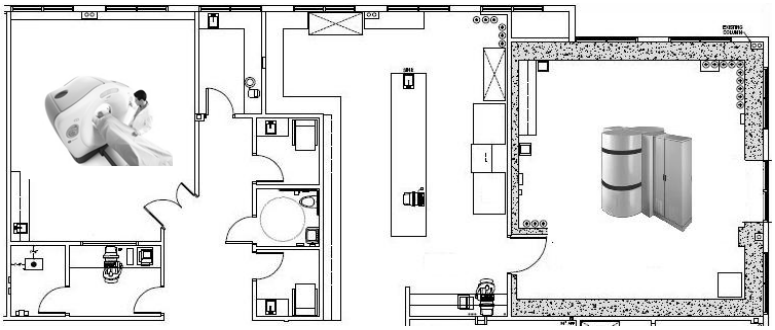


I. ULTRASOUND

II. COMPUTED TOMOGRAPHY

III. MAGNETIC RESONANCE

IX.- NUCLEAR MEDICINE AND RADIOTHERAPY ROOMS DESIGN



I. GAMMACAMERAS

II. SPECT- COMPUTED TOMOGRAPHY

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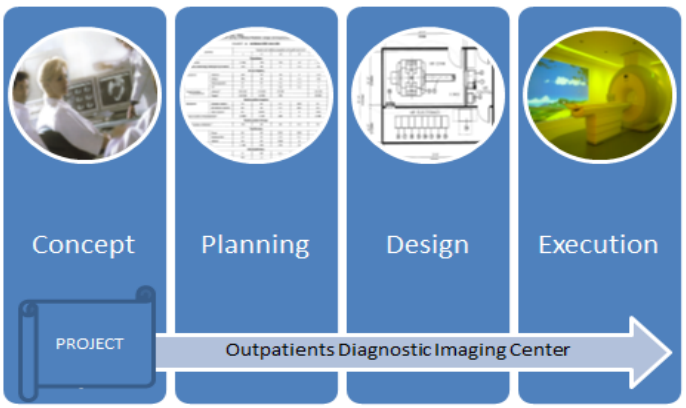
II. CIRCULATIONS AND BLOCK DIAGRAMS

III. SPACE WITH BLOCK DIAGRAMS

IV. ARCHITECTURAL DESIGN

V. MODULAR PROGRAMS

XI.- PROJECT DEVELOPMENT



I. CONCEPT

II. PLANNING

III. DESIGN

IV. EXECUTION

V. METHODOLOGY FOR FOLLOW UP AND CONTROL

XII.- STANDARDS AND RECOMMENDATIONS

I. RECOMMENDATIONS IN RADIOLOGY

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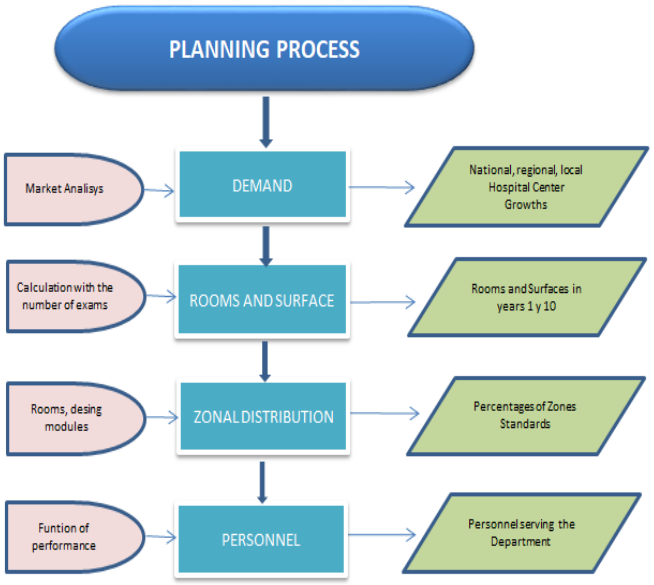
III. RECOMMENDATIONS IN RADIOTHERAPY

IV. RECOMMENDATIONS IN MAGNETIC RESONANCE

V. ARCHITECTURAL LEGISLATION

VI. COMPUTING STANDARDS

XIII.-THE PLANNING PROCESS



I. **DEMAND ANALYSIS**

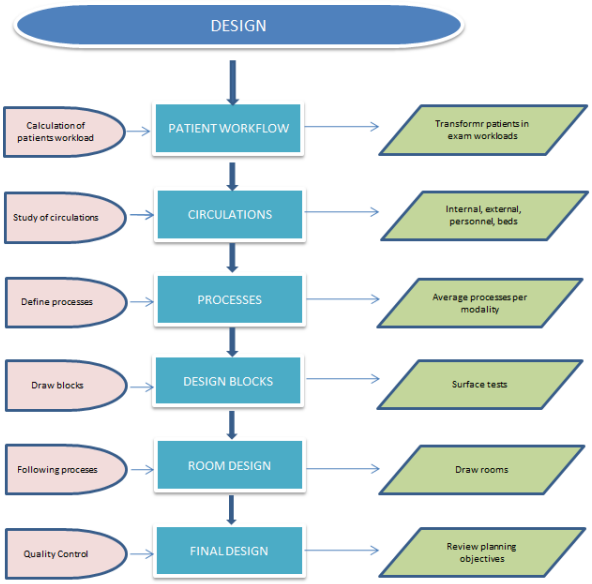
II. **ROOMS AND SURFACE**

III. **ZONES DISTRIBUTION**

IV. **PERSONNEL**

V. **DESIGN**

XIV.- THE DESIGN PROCESS



I. PATIENTS WORKFLOW

II. CIRCULATIONS

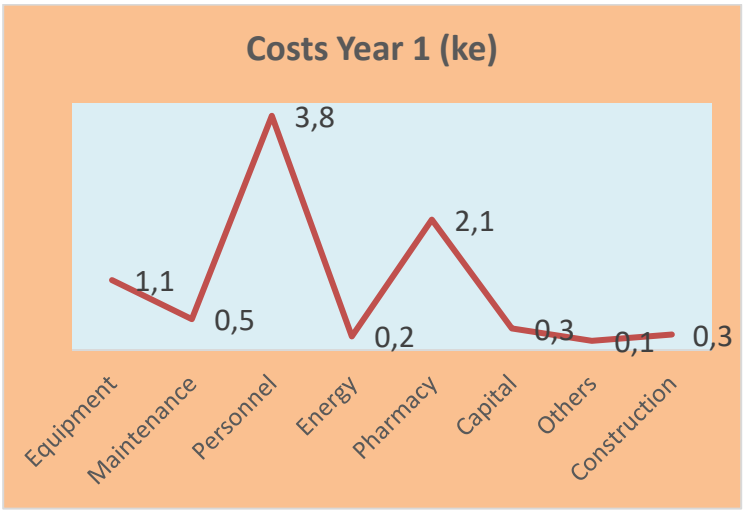
III. CLINICAL PROCESSES

IV. DESIGN BLOCKS

V. ROOMS DESIGN

VI. DEPARTMENT DESIGN

XV.- BUSINESS PLAN



I. INVOICING

II. COSTS

III. COSTS PER EXAM

IV. CASH FLOW AND RESULTS

Population	Frequency	Modality	%	Exams	t exa	Medium Production	R	R	Medium Surface	Net Surface	Population Growth	R	R	Modality Growth	R	R	Total Net Surface
Population	Exam/1000				min	Exams			m 2	m 2	%						m 2
160.000	1.000	DR	34	54.400	3	26.250	2,1	3	20	60		2,5	3,0	0	2,5	3	60
		FL	3	4.800	15	5.250	0,9	1	25	25		1,1	1,0	0	1,1	1	25
		ORT	1	1.600	6	13.125	0,1	1	8	8		0,1	1,0	0	0,1	1	8
		DEN	1	1.600	15	5.250	0,3	1	15	15		0,4	1,0	4	0,5	1	15
		MAM.	3	4.800	10	7.875	0,6	1	12	12		0,7	1,0	4	1,0	1	12
		CT	6	9.600	15	10.500	0,9	2	30	60		1,1	1,0	4	1,5	2	60
		MR	8	12.800	25	6.300	2,0	2	35	70		2,4	3,0	5	3,7	4	140
		US	8	12.800	15	5.250	2,4	2	15	30		2,9	3,0	5	4,4	5	75
		VAS	1	1.600	60	1.313	1,2	1	35	35	2	1,5	1,0	5	2,2	2	70
160.000	1.000	US	3	4.800	15	26.280	0,2	1	15	15		0,2	1,0	5	0,3	1	15
		DR	30	48.000	3	131.400	0,4	1	20	20		0,4	1,0	0	0,4	1	20
		CT	2	3.200	15	26.280	0,1	0	35	0		0,1	0,0	4	0,2	0	0
			100														
0	0	DR	67	0	8	19.688	0,0	0	20	0		0,0	0,0	0	0,0	0	0
		FL	7	0	30	5.833	0,0	0	25	0		0,0	0,0	0	0,0	0	0
		US	10	0	20	5.625	0,0	0	15	0		0,0	0,0	5	0,0	0	0
		CT	8	0	25	6.300	0,0	0	30	0		0,0	0,0	4	0,0	0	0
		MR	8	0	60	2.625	0,0	0	35	0		0,0	0,0	5	0,0	0	0
			100														
				160.000				16		350			17,0			22	500
NET EXAMINATION SURFACE										350							500

DEPARTMENT GROSS SURFACE	2.100	GREATER NEED OF SPACE BECAUSE: * Population Growth * Modality Demand Increase	3.000
	22.604 ft2		32.291 ft2

PLANNING properly the needs of diagnostic imaging and radiotherapy of a community is a complex task that requires experience and specialization and a lot of creativity for the next task that is the design.

DESIGN the department properly is the next stage which leads to many years of good performance, productivity in the work of the personnel and satisfaction in the care of the patient.

Facilities that provide the correct diagnosis and treatment to patients are the target of this book, and through its pages can will know techniques and procedures with which health managers, medical administrators, medical doctors, radiologists, oncologists, engineers, physicists, architects and other professionals in the sector can perform their task with satisfaction and efficiency, so patients will find, once the departments are in operation, safe and comfortable.

And its final goal is to have diagnostic imaging and radiotherapy departments that ratify the patient in their dignity as a person.

J.A. GARCIA