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Evolution and Trends About Number of Physicians In Spain: Dynamic Analysis

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EVOLUTION AND TRENDS ABOUT NUMBER OF PHYSICIANS IN SPAIN: DYNAMIC ANALYSIS

Nowadays, Spain has one of the biggest amount of physicians per capita. This situation is worrying in comparison with other countries in our environment (for example U.K, Italy, France or Germany).

That is due to the inappropriate planning policies carried for a long time, which basically are typified by the lack of anticipation and by the prevalence of short-term. As a result of that, in our country there is an unbalance between demand and supply of physicians (a fact which is bringing the system up to an untenable situation that risk the future of physicians profession and increases the sanitary costs).

However, past and present governmental politic trends use adjustment policies instead of preventive policies, which become the problem in a latent and permanent (in the long-term) one.

This work argues about the rationality of present planning policies and simulates the evolution of number of physicians for the next twenty years, based on the formation process carried for a long time and on the politic trends.

CONTENTS

PROBLEM IDENTIFICATION

Core causes

Deficient planning of human resources in the sector

UNBALANCE BETWEEN EMPLOYMENT AND FORMATION

Irrationality of the politics about positions summons in the specialized medical formation (MIR)

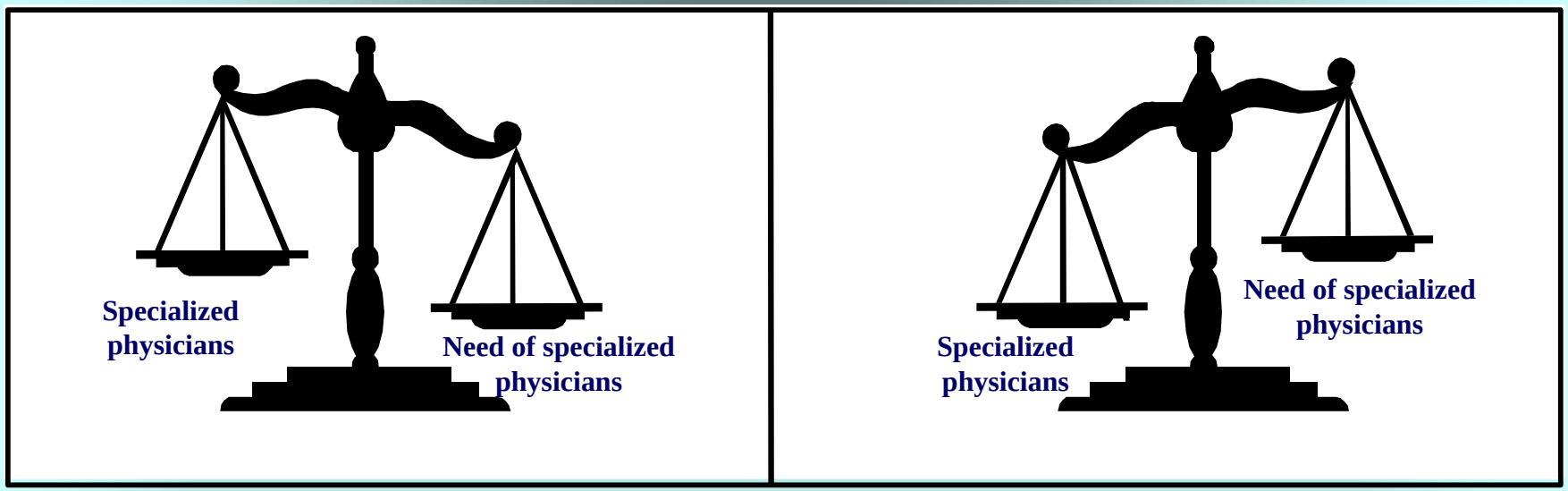
Lack of anticipation

No-delay controls

PROBLEM IDENTIFICATION

Important unbalance between supply and demand of specialized physicians

SPECIFIC SEQUENCE OF POSITIONS SUPPLY IN THE SPECIALIZED MEDICAL FORMATION IN THE 80'S AND 90'S



Eighties

Nineties

ORIGINS OF THE PROBLEM

Seventies and early eighties

- Universities ...
  - High demand of undergraduate positions in the medical field
  - Lack of de incentive to reduce them
- Positions summon of Internal Resident Physician (MIR) ...
  - Reduced amount of positions in the specialized medical formation - MIR formation (limitations)
- Social needs ...
  - Less Generalist Physicians=Primary Care Medicine (surplus of graduates)
  - More Specialist Physicians (shortage of specialized physicians)

"Historic Bag" of graduates without specialization

Specialized Physicians without official diploma (MESTOS)

ORIGINS OF THE PROBLEM

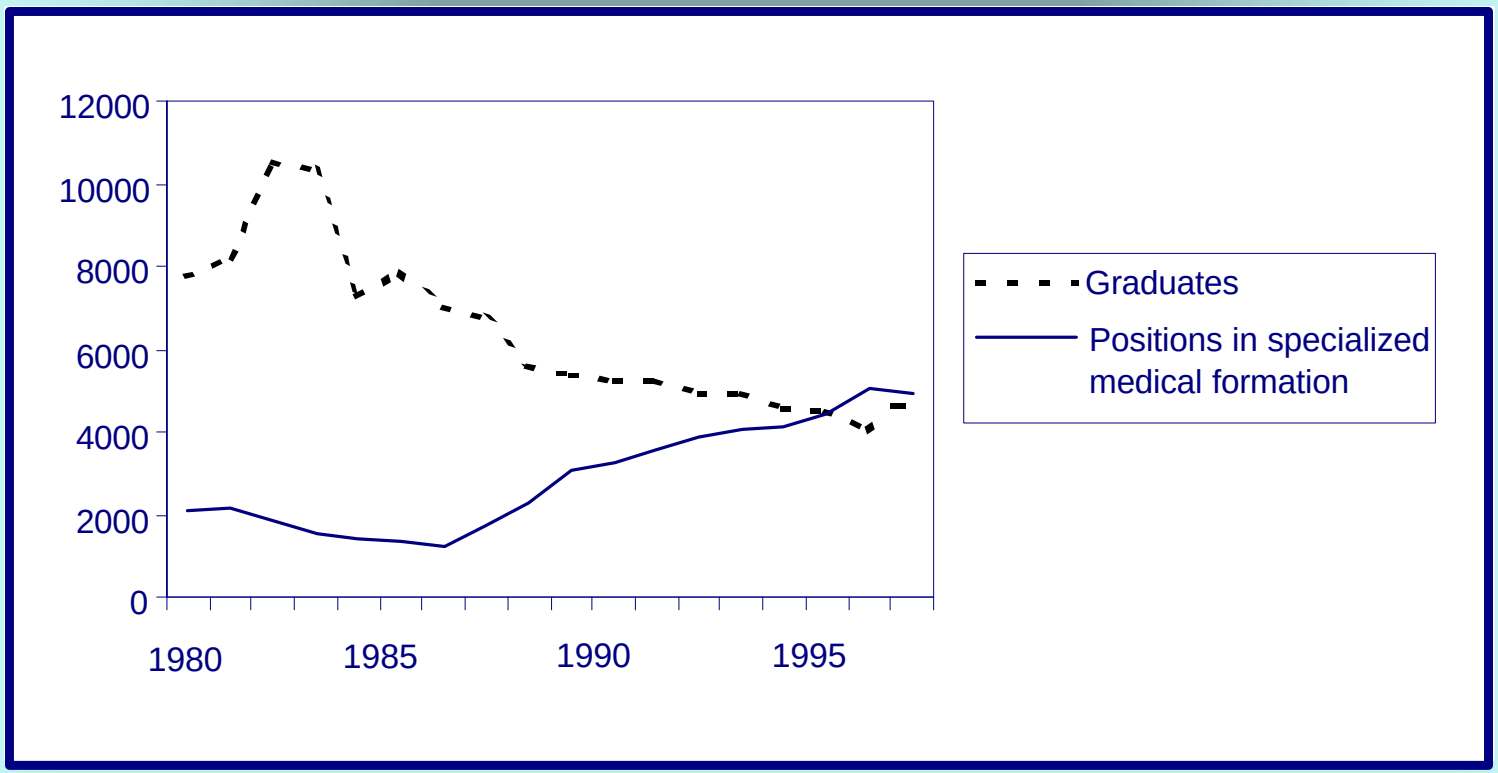
Late eighties and nineties

- Universities ...
  - Diminution of undergraduate positions (insufficient)
- Positions summon of Internal Resident Physician (MIR) ...
  - Progressive increment in the amount of positions summoned until 1995
  - Harmonization norms from the European Union
  - Since 1995, positions summoned excel in number to the graduates
- Social needs ...
  - Less Generalist Physicians =Primary Care Medicine (surplus of graduates)
  - Less Specialist Physicians (surplus of specialized graduates)

"Historic Bag" of graduates without specialization

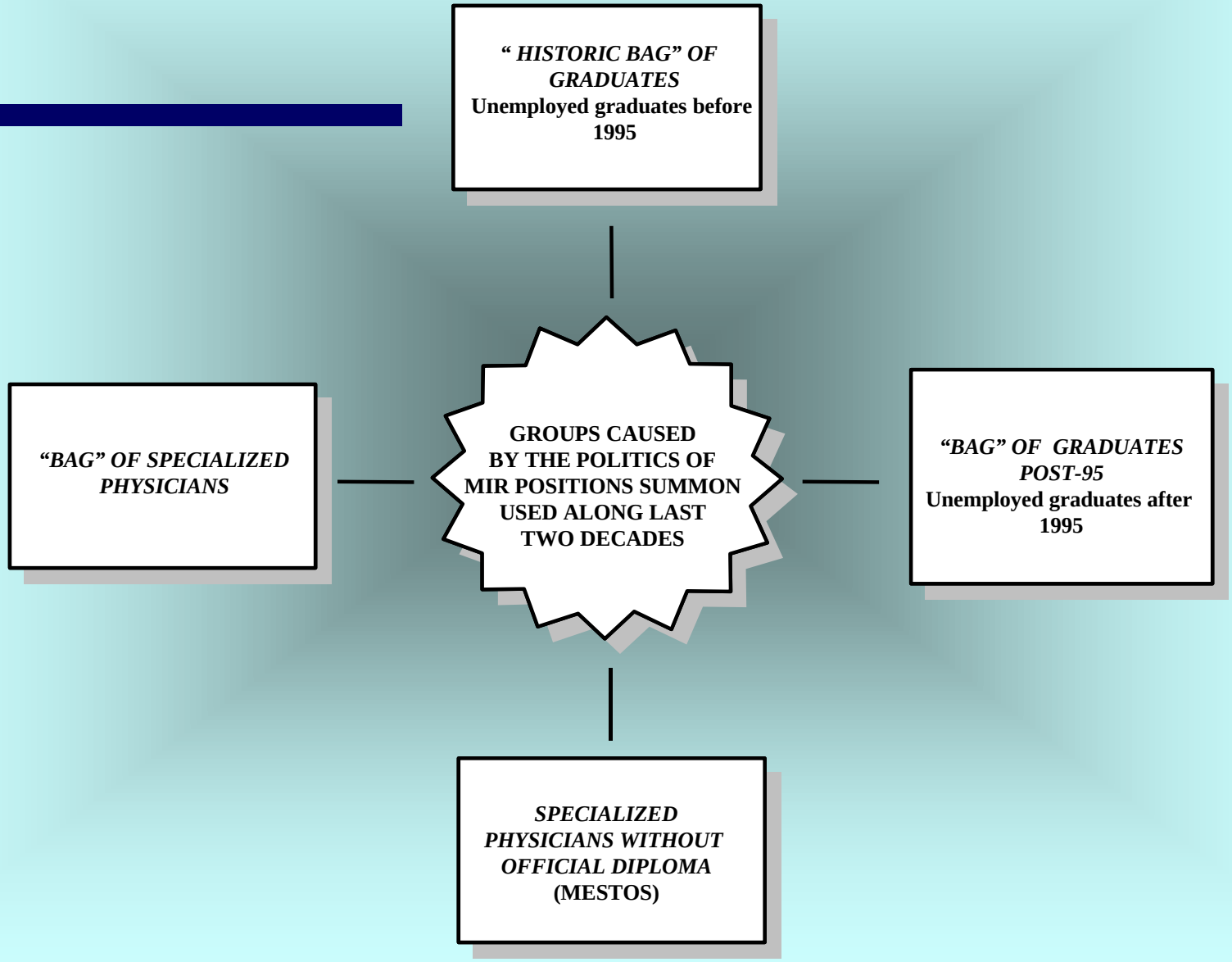
"Bag" of Specialized Physicians with official diploma

ORIGINS OF THE PROBLEM

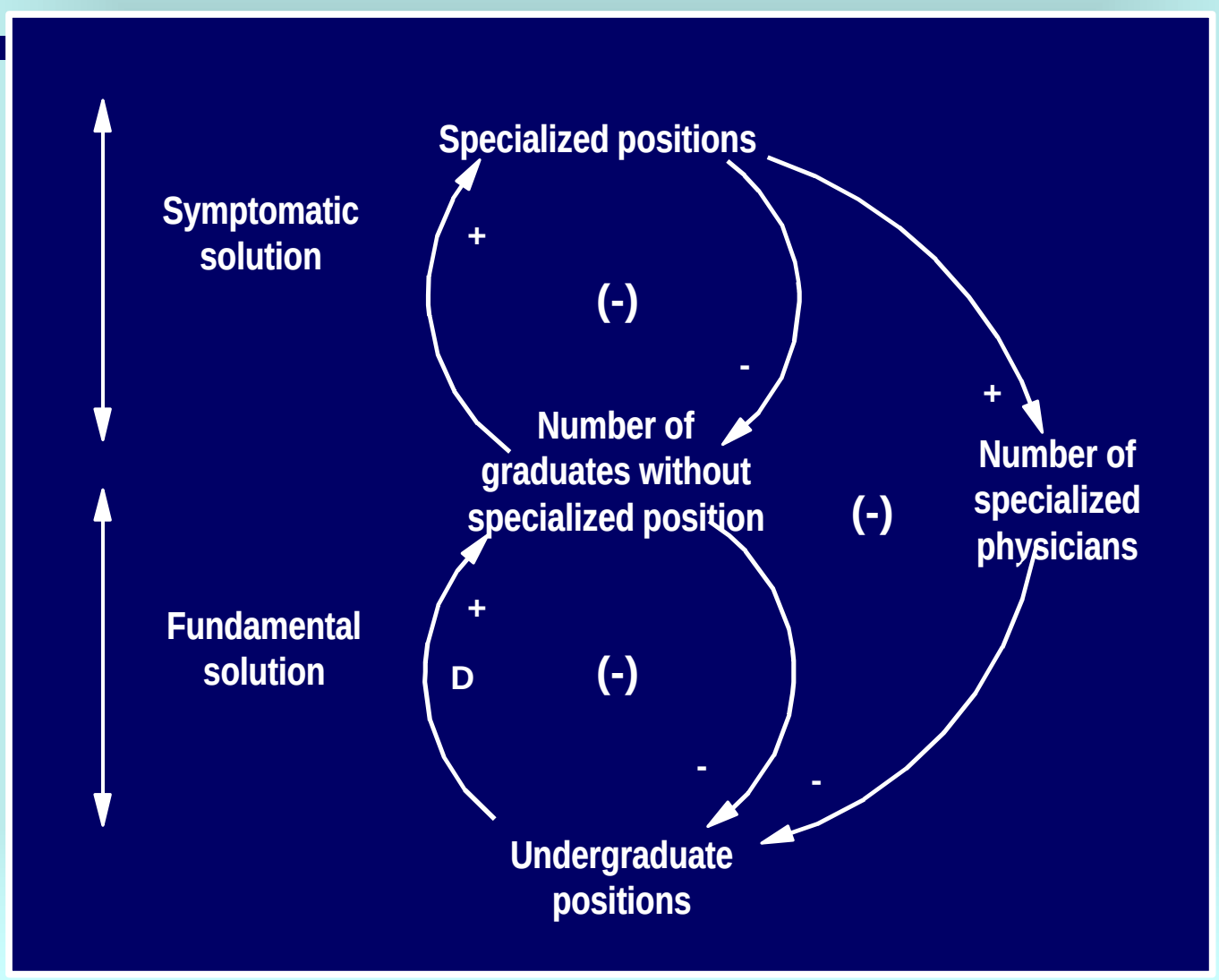


ORIGINS OF THE PROBLEM

Physician groups created by the different summon politics



FUTURE CONSEQUENCES



FUTURE CONSEQUENCES

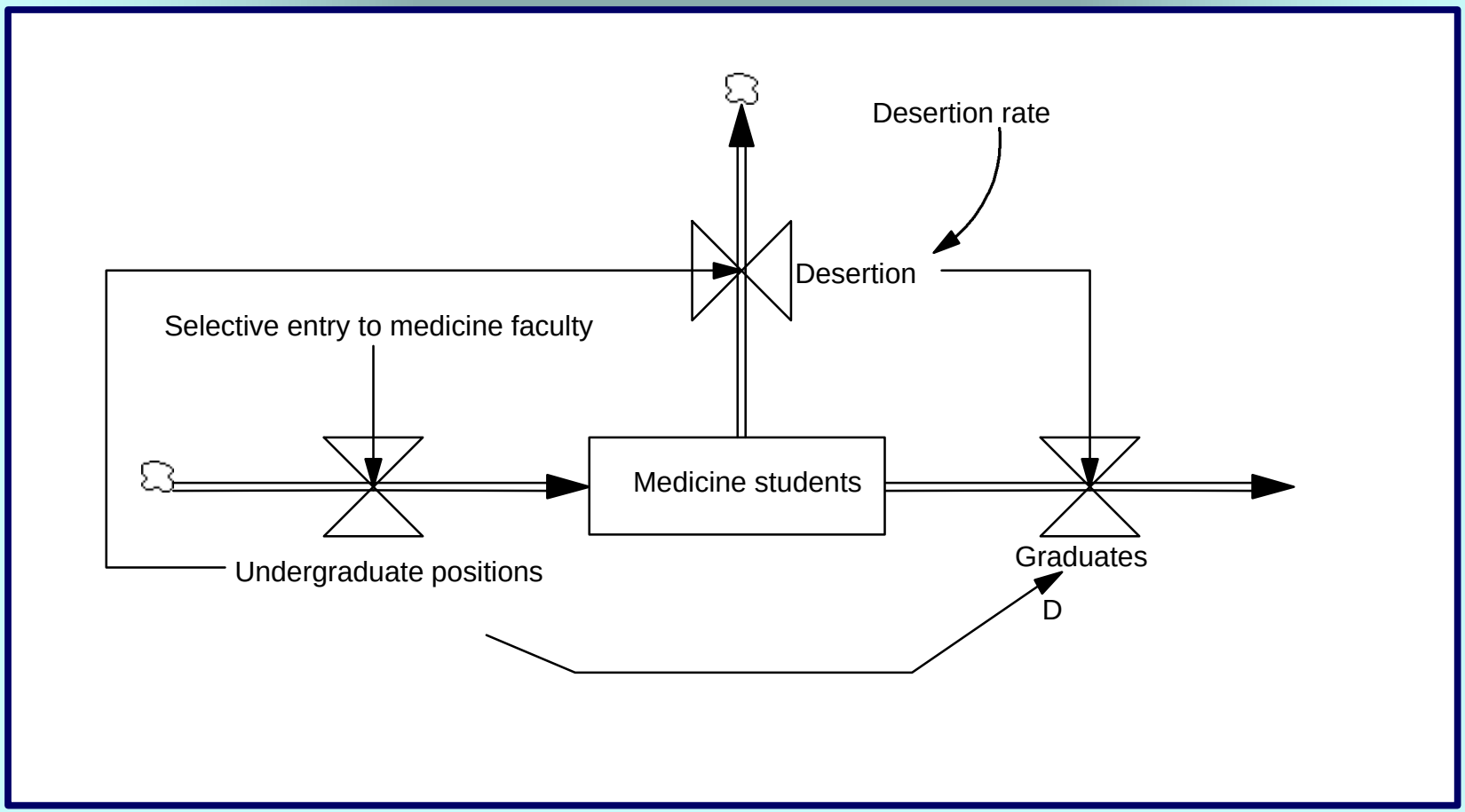
PRESENT SITUATION → FUTURE SITUATION

SCENARIO:

* Selective entry to medicine faculty is kept on actual levels
* Supply of MIR positions is around the value of last five year's mean
* Obligatory retirement at the age of seventy

1. The system is inclined to saturate
2. Exclusion of non-specific specialties
3. Incorporation of specialties with different length of time (five, four, three and two years); MIR positions summons in 1995, 1996, 1997 and 1998
4. The distribution of positions in each specialty is equal to the value of last five year's mean, and is kept along the simulation
5. Simulation period: 2000-2020

MODEL ELABORATION



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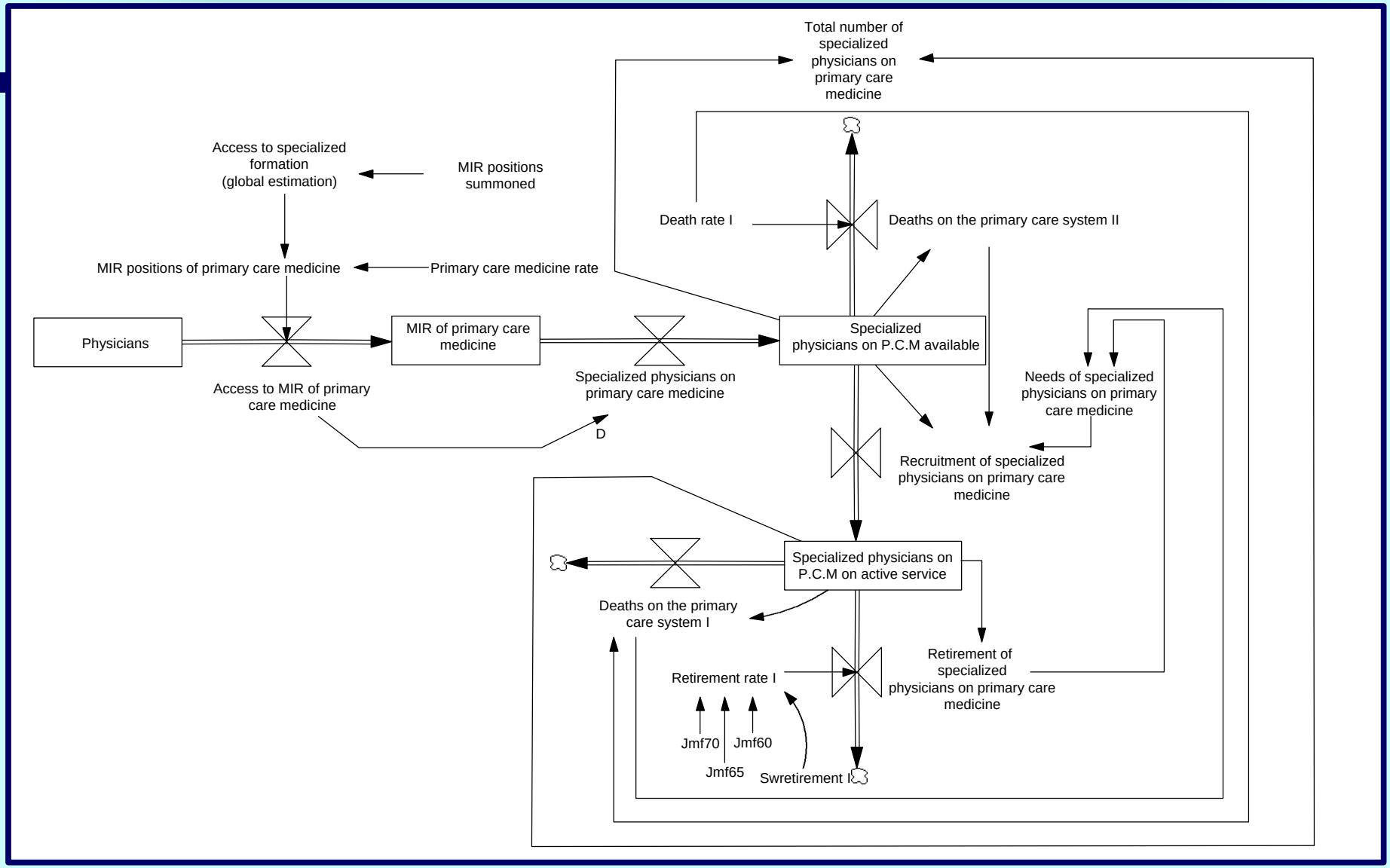

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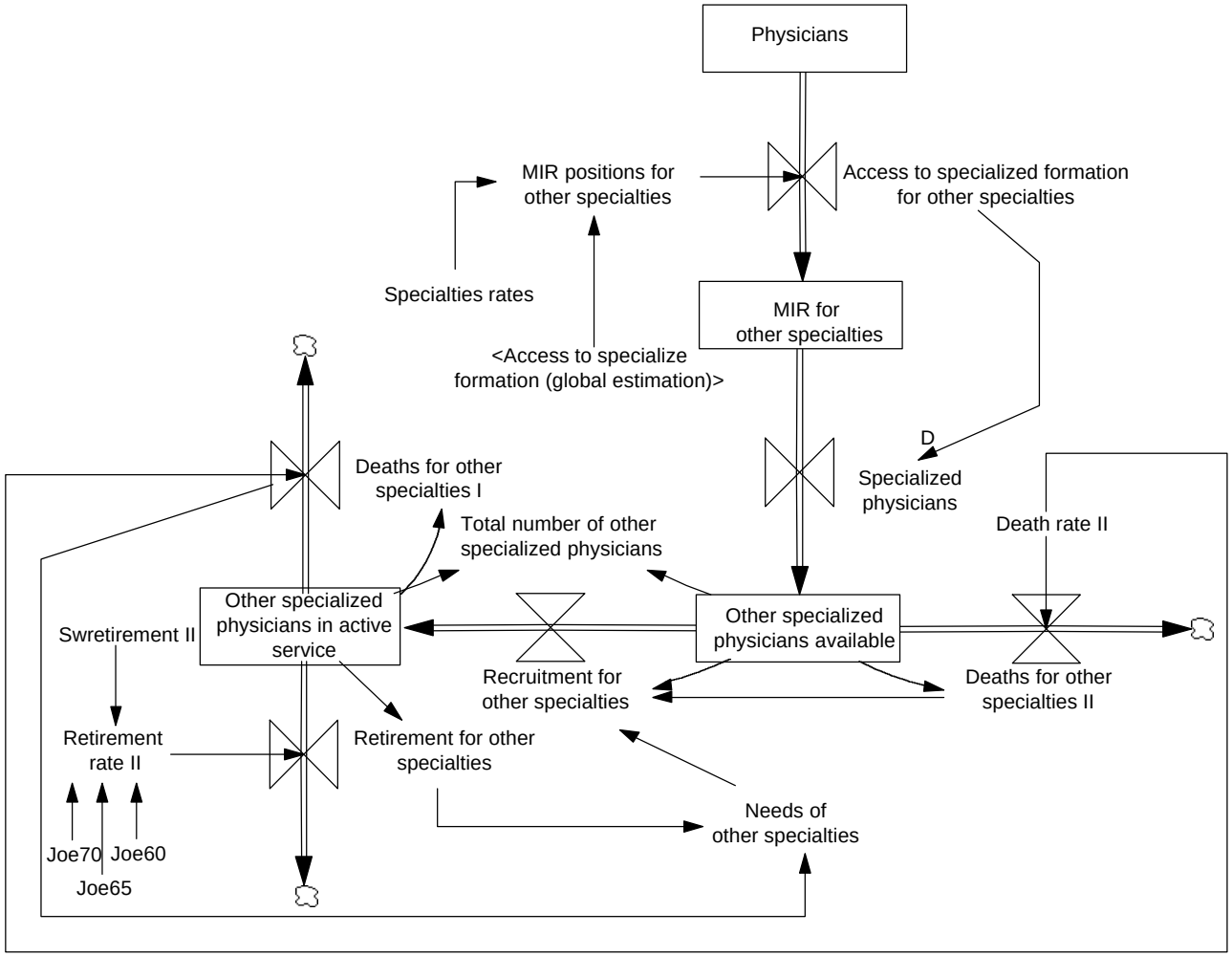

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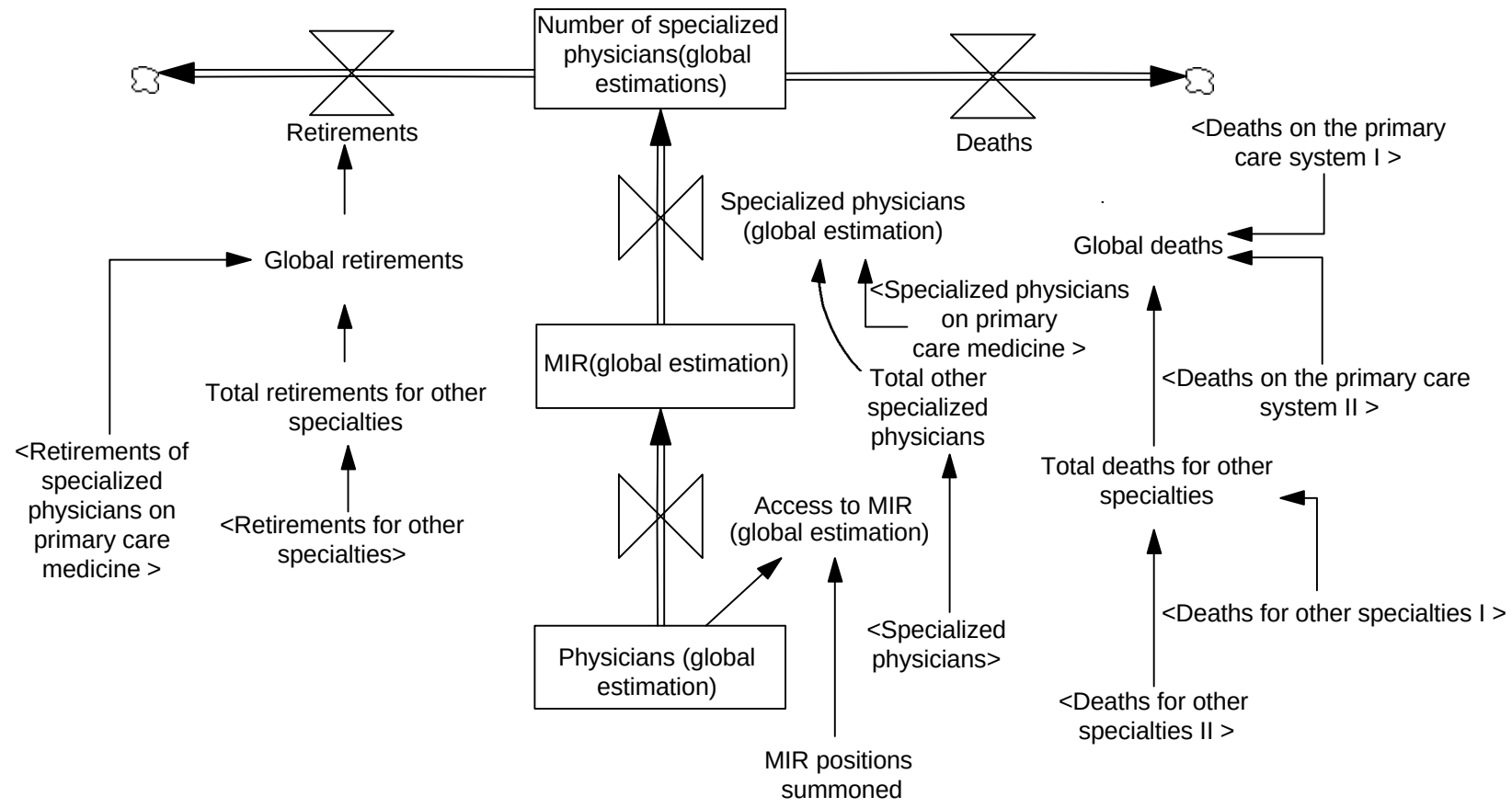

RESULTS OF SIMULATION

ALLERGOLOGY

	NUMBER	INCREASE	PERCENTAGE	
2000	469	0	-	-
2005	680	211	44,98	44,98
2010	863	394	57,94	84
2015	1022	553	64,07	117,91
2020	1169	700	68,49	149,25

MORBID ANATOMY AND HISTOPATHOLOGY

	NUMBER	INCREASE	PERCENTAGE	
2000	886	0	-	-
2005	1086	200	22,57	22,57
2010	1279	393	36,18	44,35
2015	1372	486	37,99	54,85
2020	1377	491	35,78	55,41

ANAESTHETICS

	NUMBER	INCREASE	PERCENTAGE	
2000	2810	0	-	-
2005	3617	807	28,71	28,71
2010	4237	1427	39,45	50,78
2015	4566	1756	41,44	62,49
2020	4607	1797	39,35	63,95

ANGIOLOGY AND VASCULAR SURGERY

	NUMBER	INCREASE	PERCENTAGE	
2000	208	0	-	-
2005	321	113	54,32	54,32
2010	420	212	66,04	101,92
2015	517	309	73,57	148,55
2020	564	356	68,85	171,15

GASTROENTEROLOGY

	NUMBER	INCREASE	PERCENTAGE	
2000	1028	0	-	-
2005	1321	293	28,5	28,5
2010	1576	548	41,48	53,3
2015	1732	704	44,67	68,48
2020	1780	752	43,41	73,15

CARDIO-VASCULAR DISEASES

	NUMBER	INCREASE	PERCENTAJE	
2000	1085	0	-	-
2005	1463	378	34,83	34,83
2010	1756	671	45,86	61,84
2015	1945	860	48,97	72,96
2020	1990	905	46,52	83,41

RESULTS OF SIMULATION

CARDIO–VASCULAR SURGERY

	NUMBER	INCREASE	PERCENTAGE	
2000	136	0	-	-
2005	166	30	22,05	22,05
2010	185	49	29,51	36,02
2015	192	56	30,27	41,17
2020	181	45	23,43	33,08

GENERAL SURGERY

	NUMBER	INCREASE	PERCENTAGE	
2000	2066	0	-	-
2005	2367	301	14,56	14,56
2010	2652	586	24,75	28,36
2015	2760	694	26,16	33,59
2020	2534	468	16,95	22,65

ORAL AND MAXILLO–FACIAL SURGERY

	NUMBER	INCREASE	PERCENTAGE	
2000	202	0	-	-
2005	325	123	60,89	60,89
2010	425	223	68,61	110,39
2015	512	310	72,94	153,46
2020	588	386	75,39	191,08

PAEDIATRIC SURGERY

	NUMBER	INCREASE	PERCENTAGE	
2000	172	0	-	-
2005	197	25	14,53	14,53
2010	211	39	19,79	22,67
2015	210	38	18	22,09
2020	169	-3	-1,42	-1,74

THORACIC SURGERY

	NUMBER	INCREASE	PERCENTAGE	
2000	76	0	-	-
2005	106	30	39,47	39,47
2010	131	55	51,88	72,36
2015	147	71	54,19	93,42
2020	153	77	52,38	101,31

PLASTIC SURGERY

	NUMBER	INCREASE	PERCENTAGE	
2000	360	0	-	-
2005	501	141	39,16	39,16
2010	607	247	49,3	68,61
2015	682	322	53,04	89,44
2020	714	354	51,9	98,33

RESULTS OF SIMULATION

DERMATOLOGY AND VENEREOLOGY

	NUMBER	INCREASE	PERCENTAGE	
2000	655	0	-	-
2005	869	214	32,67	32,67
2010	1045	390	44,87	59,54
2015	1171	516	49,37	78,77
2020	1223	568	48,5	86,71

ENDOCRINOLOGY AND DIABETES MELLITUS

	NUMBER	INCREASE	PERCENTAGE	
2000	513	0	-	-
2005	618	105	20,46	20,46
2010	706	193	31,22	37,62
2015	762	249	35,26	48,53
2020	790	277	36,35	53,99

CLINICAL PHARMACOLOGY AND THERAPEUTICS

	NUMBER	INCREASE	PERCENTAGE	
2000	192	0	-	-
2005	280	88	45,83	45,83
2010	355	163	58,21	84,89
2015	427	235	66,19	122,39
2020	469	277	64,87	144,27

GERIATRICS

	NUMBER	INCREASE	PERCENTAGE	
2000	265	0	-	-
2005	434	169	63,77	63,77
2010	584	319	73,5	120,37
2015	718	453	77,56	170,94
2020	825	560	77,99	211,32

HAEMATOLOGY AND HAEMOTHERAPY

	NUMBER	INCREASE	PERCENTAGE	
2000	957	0	-	-
2005	1157	200	20,89	20,89
2010	1319	362	31,28	37,82
2015	1378	421	31,91	43,99
2020	1291	334	24,23	34,9

INTENSIVE CARE MEDICINE

	NUMBER	INCREASE	PERCENTAGE	
2000	955	0	-	-
2005	1423	468	49	49
2010	1850	895	62,89	93,71
2015	2164	1209	65,35	126,59
2020	2227	1272	58,78	133,19

RESULTS OF SIMULATION

GENERAL MEDICINE

	NUMBER	INCREASE	PERCENTAGE	
2000	3174	0	-	-
2005	4511	1337	42,12	42,12
2010	5103	1929	42,76	60,77
2015	5403	2229	43,68	70,22
2020	5109	1935	35,81	60,96

NUCLEAR MEDICINE

	NUMBER	INCREASE	PERCENTAGE	
2000	290	0	-	-
2005	400	110	37,93	37,93
2010	509	219	54,75	75,51
2015	599	309	60,7	106,55
2020	654	364	60,76	125,51

COMMUNITY MEDICINE

	NUMBER	INCREASE	PERCENTAGE	
2000	483	0	-	-
2005	695	212	43,89	43,89
2010	876	393	56,54	81,36
2015	1040	557	63,58	115,32
2020	1150	667	64,13	138,09

RENAL DISEASES

	NUMBER	INCREASE	PERCENTAGE	
2000	528	0	-	-
2005	671	143	27,08	27,08
2010	800	272	40,53	51,51
2015	866	338	42,25	64,01
2020	829	301	34,75	57

RESPIRATORY MEDICINE

	NUMBER	INCREASE	PERCENTAGE	
2000	891	0	-	-
2005	1083	192	21,54	21,54
2010	1275	384	35,45	43,09
2015	1410	519	40,7	58,24
2020	1446	555	39,36	62,28

NEUROLOGICAL SURGERY

	NUMBER	INCREASE	PERCENTAGE	
2000	179	0	-	-
2005	243	64	35,75	35,75
2010	292	113	46,5	63,12
2015	313	134	45,89	74,86
2020	298	119	38,01	66,48

RESULTS OF SIMULATION

CLINICAL NEUROPHYSIOLOGY

	NUMBER	INCREASE	PERCENTAGE	
2000	316	0	-	-
2005	487	171	54,11	54,11
2010	643	327	67,14	103,48
2015	757	441	68,58	139,55
2020	811	495	65,38	156,64

NEUROLOGY

	NUMBER	INCREASE	PERCENTAGE	
2000	769	0	-	-
2005	1071	302	39,27	39,27
2010	1350	581	54,24	75,55
2015	1562	793	58,74	103,12
2020	1692	923	59,09	120,02

OBSTETRICS AND GYNAECOLOGY

	NUMBER	INCREASE	PERCENTAGE	
2000	2350	0	-	-
2005	3044	694	29,53	29,53
2010	3595	1245	40,9	52,97
2015	3949	1599	44,47	68,04
2020	4063	1713	43,37	72,89

OPHTHALMOLOGY

	NUMBER	INCREASE	PERCENTAGE	
2000	1375	0	-	-
2005	1667	292	21,23	21,23
2010	1951	576	34,55	41,89
2015	2146	771	39,51	56,07
2020	2143	768	35,78	55,85

MEDICAL ONCOLOGY

	NUMBER	INCREASE	PERCENTAGE	
2000	406	0	-	-
2005	653	247	60,83	60,83
2010	888	482	73,81	118,71
2015	1093	687	77,36	169,21
2020	1260	854	78,13	210,34

RADIOTHERAPY

	NUMBER	INCREASE	PERCENTAGE	
2000	328	0	-	-
2005	437	109	33,23	33,23
2010	557	229	52,4	69,81
2015	651	323	57,98	98,47
2020	731	403	61,9	122,86

RESULTS OF SIMULATION

OTOLARYNGOLOGY

	NUMBER	INCREASE	PERCENTAGE	
2000	1035	0	-	-
2005	1241	206	19,90	19,90
2010	1437	402	32,39	38,84
2015	1561	526	36,60	50,82
2020	1542	507	32,47	48,98

PAEDIATRICS

	NUMBER	INCREASE	PERCENTAGE	
2000	4214	0	-	-
2005	4879	665	15,78	15,78
2010	5464	1250	25,62	29,66
2015	5817	1603	29,33	38,03
2020	5796	1582	27,19	37,54

PSYCHIATRY

	NUMBER	INCREASE	PERCENTAGE	
2000	1707	0	-	-
2005	2285	578	33,86	33,86
2010	2760	1053	46,08	61,68
2015	3062	1355	49,09	79,37
2020	3228	1521	49,67	89,10

DIAGNOSTIC RADIOLOGY

	NUMBER	INCREASE	PERCENTAGE	
2000	1618	0	-	-
2005	2024	406	25,09	25,09
2010	2399	781	38,58	48,26
2015	2639	1021	42,55	63,10
2020	2682	1064	40,31	65,76

REHABILITATION

	NUMBER	INCREASE	PERCENTAGE	
2000	840	0	-	-
2005	1135	295	35,11	35,11
2010	1378	538	47,40	64,04
2015	1554	714	51,81	85,00
2020	1611	771	49,61	91,78

RHEUMATOLOGY

	NUMBER	INCREASE	PERCENTAGE	
2000	585	0	-	-
2005	749	164	28,03	28,03
2010	889	304	40,58	51,96
2015	988	403	45,33	68,88
2020	1019	434	43,92	74,18

RESULTS OF SIMULATION

ORTHOPAEDIC SURGERY

	NUMBER	INCREASE	PERCENTAGE	
2000	1854	0	-	-
2005	2472	618	33,33	33,33
2010	2976	1122	45,38	60,51
2015	3289	1435	48,21	77,40
2020	3322	1468	44,63	79,18

UROLOGY

	NUMBER	INCREASE	PERCENTAGE	
2000	711	0	-	-
2005	869	158	22,22	22,22
2010	1027	316	36,36	44,44
2015	1128	417	40,60	58,64
2020	1105	394	34,92	55,41

PRIMARY CARE MEDICINE

	NUMBER	INCREASE	PERCENTAGE	
2000	67006	0	-	-
2005	72149	5143	7,67	7,67
2010	77060	10054	13,93	15,00
2015	80698	13692	17,76	20,43
2020	78671	11665	14,45	17,40

ESTOMATOLOGY

	NUMBER	INCREASE	PERCENTAGE	
2000	2938	0	-	-
2005	2786	-152	-5,17	-5,17
2010	2659	-279	-10,01	-9,49
2015	2492	-446	-16,77	-15,18
2020	2172	-766	-30,73	-26,07

HYDROLOGY

	NUMBER	INCREASE	PERCENTAGE	
2000	222	0	-	-
2005	308	86	38,73	38,73
2010	383	161	52,27	72,52
2015	455	233	60,83	104,95
2020	509	287	63,07	129,27

PHYSICAL EDUCATION MEDICINE

	NUMBER	INCREASE	PERCENTAGE	
2000	731	0	-	-
2005	950	219	29,95	29,95
2010	1141	410	43,15	56,08
2015	1330	599	52,49	81,94
2020	1497	766	57,59	104,78

RESULTS OF SIMULATION

LEGAL MEDICINE

	NUMBER	INCREASE	PERCENTAGE	
2000	260	0	-	-
2005	343	83	31,92	31,92
2010	411	151	44,02	58,07
2015	477	217	52,79	83,46
2020	513	253	53,03	97,3

	Total number	Increase	Percentage	
2000	108604	0	-	-
2001	111864	3260	3	3
2002	115096	6492	5,8	5,97
2003	118297	9693	8,42	8,92
2004	121510	12906	10,9	11,88
2005	124563	15959	13,13	14,69
2006	127565	18961	15,22	17,45
2007	130540	21936	17,19	20,19
2008	133488	24884	19,06	22,91
2009	136121	27517	20,61	25,33
2010	138725	30121	22,12	27,73
2011	141304	32700	23,57	30,1
2012	143864	35260	24,95	32,46
2013	145402	36798	25,57	33,88
2014	146923	38319	26,35	35,28
2015	148428	39824	27,1	36,66
2016	149922	41318	27,83	38,04
2017	149278	40674	27,13	37,45
2018	148644	40040	26,82	36,86
2019	148016	39412	26,51	36,28
2020	147398	38794	26,2	35,72

CONCLUSIONS

- The amount of physicians in Spain will continue growing up next two decades
- Important unbalance between system-in (joining) and system-out (retirement). People between 36-50 age, will limit future distribution by obstructing the access of new professionals to labor markets during the next years
- Specialties with younger physicians have less capacity of absorption new professionals
- Some specialties are considerably increased, for example Oral and Maxillo-Facial Surgery, Geriatrics and Medical Oncology, which will cause important unemployment
- Other specialties will be deficit ones, for example Pediatrics Surgery and Estomatology