Additional File 1. Full indicator lists and AHP weights for EMS evaluation systems

This file contains the complete indicator systems and AHP-derived weights for both leading hospitals (61 indicators) and member institutions (43 indicators), organized by Donabedian's Structure-Process-Outcome dimensions.

Part 1. Indicator System for Leading Hospitals (61 indicators)

Primary indicator	Weight	Secondary indicator	Weight	Tertiary indicator	Weight	Composite weight
1 Structure dimension	0.3291	1.1 Emergency network coordination	0.2222	1.1.1 Establishment of county-township two-level emergency network	1	0.0731
		1.2 Hardware and facilities	0.3778	1.2.1 Establishment of emergency center	0.2382	0.0296
				1.2.2 ED construction compliance with Guidelines for ED Construction and Management (Trial)	0.2821	0.0351
				1.2.3 ED construction compliance with Expert Consensus on ED Construction Standards for Chinese County Hospitals	0.0227	0.0028
				1.2.4 Chest Pain Center accreditation	0.1633	0.0203
				1.2.5 Stroke Center accreditation	0.1596	0.0198
				1.2.6 Trauma Center accreditation	0.0725	0.0090
				1.2.7 Critical Maternal Care Center accreditation	0.0331	0.0041

Primary indicator	Weight	Secondary indicator	Weight	Tertiary indicator	Weight	Composite weight
				1.2.8 Critical Neonatal Care Center accreditation	0.0286	0.0036
		1.3 Workforce development	0.2231	1.3.1 Professional title and education structure of ED staff	0.2058	0.0151
				1.3.2 Establishment of multidisciplinary team (MDT)	0.1311	0.0096
				1.3.3 Staff familiarity with emergency care work	0.3343	0.0245
				1.3.4 Staff evaluation of emergency care services	0.0823	0.0060
				1.3.5 Frequency of staff participation in degree education and long/short-term training	0.2466	0.0181
		1.4 Informatization	0.0351	1.4.1 Deployment of pre-hospital emergency command and dispatch platform	0.3504	0.0040
				1.4.2 Ambulance equipped with mobile transmission system	0.1251	0.0014
				1.4.3 Deployment of emergency referral system	0.1006	0.0012
				1.4.4 Deployment of emergency teleconsultation system	0.2176	0.0025
				1.4.5 Use of electronic medical records	0.2062	0.0024
		1.5 Financial investment	0.0626	1.5.1 Government financial investment in emergency care	0.3455	0.0071
				1.5.2 Hospital internal financial investment in emergency care	0.6545	0.0135

Primary indicator	Weight	Secondary indicator	Weight	Tertiary indicator	Weight	Composite weight
		1.6 Regulatory mechanism	0.0791	1.6.1 Establishment of ED regulations, job responsibilities, and clinical protocols	0.3848	0.0100
				1.6.2 Development of triage procedures and principles	0.1397	0.0036
				1.6.3 Emergency collaboration mechanism between “120” center, five centers, and CCMA members	0.4183	0.0109
				1.6.4 Standardization of emergency care billing items	0.0572	0.0015
2 Process dimension	0.4677	2.1 Pre-hospital emergency workload	0.2478	2.1.1 Service radius (km)	0.0618	0.0072
				2.1.2 Service population (10,000 persons)	0.0629	0.0073
				2.1.3 Number of “120” dispatch missions received	0.1926	0.0223
				2.1.4 Actual dispatches completed	0.3236	0.0375
				2.1.5 Number of patients treated	0.3590	0.0416
		2.2 In-hospital emergency workload	0.2692	2.2.1 Total ED visits	0.6672	0.0840
				2.2.2 Total ED deaths	0.3328	0.0419
		2.3 Chest Pain Center workload	0.1507	2.3.1 Total Chest Pain Center visits	0.6828	0.0481
				2.3.2 Total Chest Pain Center deaths	0.3172	0.0224

Primary indicator	Weight	Secondary indicator	Weight	Tertiary indicator	Weight	Composite weight
		2.4 Stroke Center workload	0.1321	2.4.1 Total Stroke Center visits	0.6604	0.0408
				2.4.2 Total Stroke Center deaths	0.3396	0.0210
		2.5 Trauma Center workload	0.0844	2.5.1 Total Trauma Center visits	0.6228	0.0246
				2.5.2 Total Trauma Center deaths	0.3772	0.0149
		2.6 Critical Maternal Care Center workload	0.0515	2.6.1 Total Critical Maternal Care Center visits	0.5080	0.0122
				2.6.2 Total Critical Maternal Care Center deaths	0.4920	0.0119
		2.7 Critical Neonatal Care Center workload	0.0299	2.7.1 Total Critical Neonatal Care Center visits	0.5177	0.0072
				2.7.2 Total Critical Neonatal Care Center deaths	0.4823	0.0067
		2.8 Hierarchical referral practices	0.0186	2.8.1 Total referrals received from member institutions (upward)	0.5485	0.0048
				2.8.2 Total emergency consultations	0.2507	0.0022
				2.8.3 Total referrals to higher-level institutions	0.1146	0.0010
				2.8.4 Total referrals to member institutions (downward)	0.0861	0.0007
		2.9 Support to member institutions	0.0157	2.9.1 Technical support provided for emergency care	0.6410	0.0047
				2.9.2 Emergency care resource support provided	0.1061	0.0008

Primary indicator	Weight	Secondary indicator	Weight	Tertiary indicator	Weight	Composite weight
				2.9.3 Number of treatment units established at member institutions under support	0.2529	0.0019
3 Outcome dimension	0.2032	3.1 Emergency care quality control	0.6311	3.1.1 ED physician-to-patient ratio	0.0279	0.0036
				3.1.2 ED nurse-to-patient ratio	0.0185	0.0024
				3.1.3 Proportion of Level I (critical) patients (%)	0.2994	0.0384
				3.1.4 Proportion of Level II (severe) patients (%)	0.0549	0.0070
				3.1.5 Door-to-drug time compliance for AMI patients	0.0258	0.0033
				3.1.6 Door-to-balloon time compliance for AMI patients	0.1287	0.0165
				3.1.7 Median ED resuscitation room length of stay (min)	0.0396	0.0051
				3.1.8 ED resuscitation room mortality rate (%)	0.2889	0.0370
				3.1.9 ROSC success rate (%)	0.1163	0.0149
		3.2 Staff and patient satisfaction	0.2725	3.2.1 Staff job satisfaction	0.5087	0.0282
		3.3 Public education and training	0.0963	3.3.1 Frequency of emergency care knowledge and skills education at county level	1	0.0196

Part 2. Indicator System for Member Institutions (43 indicators)

Primary indicator	Weight	Secondary indicator	Weight	Tertiary indicator	Weight	Composite weight
1 Structure dimension	0.3360	1.1 Hardware and facilities	0.3885	1.1.1 Establishment of pre-hospital emergency station	0.2453	0.0320
				1.1.2 ED construction compliance with Expert Consensus on Emergency System Construction in County Medical Alliances	0.2616	0.0341
				1.1.3 Chest Pain Treatment Unit accreditation	0.2698	0.0352
				1.1.4 Stroke Treatment Unit accreditation	0.1054	0.0138
				1.1.5 Trauma Treatment Unit accreditation	0.0635	0.0083
				1.1.6 Critical Maternal Care Unit accreditation	0.0355	0.0046
				1.1.7 Critical Neonatal Care Unit accreditation	0.0189	0.0025
		1.2 Workforce development	0.3339	1.2.1 Professional title and education structure of ED staff	0.1002	0.0112
				1.2.2 Staff familiarity with emergency care work	0.4156	0.0466
				1.2.3 Staff evaluation of emergency care services	0.0883	0.0099
				1.2.4 Frequency of staff participation in degree education and long/short-term training	0.3959	0.0444
		1.3 Informatization	0.0465	1.3.1 Ambulance equipped with mobile transmission system	0.1759	0.0027

Primary indicator	Weight	Secondary indicator	Weight	Tertiary indicator	Weight	Composite weight
				1.3.2 Deployment of emergency referral system	0.1004	0.0016
				1.3.3 Deployment of emergency teleconsultation system	0.4660	0.0073
				1.3.4 Use of electronic medical records	0.2578	0.0040
		1.4 Financial investment	0.0813	1.4.1 Government financial investment in emergency care	0.3192	0.0087
				1.4.2 CCMA internal financial investment in emergency care	0.6808	0.0186
		1.5 Regulatory mechanism	0.1497	1.5.1 Establishment of ED regulations, job responsibilities, and clinical protocols	0.3914	0.0197
				1.5.2 Development of triage procedures and principles	0.1327	0.0067
				1.5.3 Emergency collaboration mechanism with leading hospital's “120” center and five centers	0.4146	0.0209
				1.5.4 Standardization of emergency care billing items	0.0613	0.0031
2 Process dimension	0.5668	2.1 Pre-hospital emergency workload	0.2527	2.1.1 Number of “120” dispatch missions received	0.2961	0.0424
				2.1.2 Actual dispatches completed	0.3142	0.0450
				2.1.3 Number of patients treated	0.3897	0.0558
		2.2 In-hospital emergency workload	0.2776	2.2.1 Total ED visits	0.6734	0.1060

Primary indicator	Weight	Secondary indicator	Weight	Tertiary indicator	Weight	Composite weight
				2.2.2 Total ED deaths	0.3266	0.0514
		2.3 Chest Pain Treatment Unit workload	0.1356	2.3.1 Total Chest Pain Treatment Unit visits	0.6678	0.0513
				2.3.2 Total Chest Pain Treatment Unit deaths	0.3322	0.0255
		2.4 Stroke Treatment Unit workload	0.1083	2.4.1 Total Stroke Treatment Unit visits	0.6730	0.0413
				2.4.2 Total Stroke Treatment Unit deaths	0.3270	0.0201
		2.5 Trauma Treatment Unit workload	0.1058	2.5.1 Total Trauma Treatment Unit visits	0.6672	0.0400
				2.5.2 Total Trauma Treatment Unit deaths	0.3328	0.0200
		2.6 Critical Maternal Care Unit workload	0.0387	2.6.1 Total Critical Maternal Care Unit visits	0.8025	0.0176
				2.6.2 Total Critical Maternal Care Unit deaths	0.1975	0.0043
		2.7 Critical Neonatal Care Unit workload	0.0227	2.7.1 Total Critical Neonatal Care Unit visits	0.8171	0.0105
				2.7.2 Total Critical Neonatal Care Unit deaths	0.1829	0.0024
		2.8 Hierarchical referral practices	0.0463	2.8.1 Total referrals to leading hospital	0.4648	0.0122
				2.8.2 Total emergency consultations	0.1044	0.0027
				2.8.3 Total referrals received from leading hospital (downward)	0.4308	0.0113

Primary indicator	Weight	Secondary indicator	Weight	Tertiary indicator	Weight	Composite weight
		2.9 Support to village clinics	0.0122	2.9.1 Technical support provided for emergency care	1	0.0069
3 Outcome dimension	0.0972	3.1 Staff and patient satisfaction	0.7755	3.1.1 Staff job satisfaction	0.5177	0.0390
				3.1.2 Patient satisfaction	0.4823	0.0364
		3.2 Public education and training	0.2245	3.2.1 Frequency of emergency care knowledge and skills education at township level	1	0.0218