

Table 1 presents the mandatory global core list of medicines required by World Health Organization (WHO) methodology for cross-country comparability in affordability studies. It includes therapeutic categories, generic names, strengths, dosage forms, and primary indications for each medicine, serving as the standardized foundation for international benchmarking.

Number	Drug category	Generic name	Strength	Dosage form	Disease
1	Antidepressant (Tricyclic)	Amitriptyline	25 mg	Tablet	Neurology
2	Antibiotic (Penicillin)	Amoxicillin	500 mg	Capsule	Antibiotics
3	Cardiovascular Drug (Beta-Blocker)	Bisoprolol	5 mg	Tablet	Cardiovascular
4	Antihypertensive (ACE Inhibitor)	Captopril	25 mg	Tablet	Cardiovascular
5	Antibiotic (Cephalosporin)	Ceftriaxone	1 g	Vial	Antibiotics
6	Antibiotic (Fluoroquinolone)	Ciprofloxacin	500 mg	Tablet	Antibiotics
7	Antibiotic (Sulfonamide combination)	Cotrimoxazole	8+40 mg/ml	Suspension	Antibiotics
8	Benzodiazepine	Diazepam	5 mg	Tablet	Neurology
9	Nonsteroidal Anti-inflammatory Drugs (NSAID)	Diclofenac	50 mg	Tablet	Pain and inflammation
10	Antidiabetic (Biguanide)	Metformin	500 mg	Tablet	Diabetes
11	Gastrointestinal Drug (Proton Pump Inhibitor)	Omeprazole	20 mg	Capsule	Digestive
12	Analgesic, Antipyretic	Acetaminophen	24 mg/ml	Suspension	Pain and inflammation
13	Respiratory Drug (Beta-2 Agonist)	Salbutamol	75 mg	Inhaler	Asthma and bronchitis
14	Lipid-lowering agent (selective cholesterol absorption inhibitors)	Ezetimibe	10 mg	Tablet	Cardiovascular

Table 1 14 WHO Core List of 14 Essential Medicines

Table 2 details all medicines analyzed in the study (14 WHO core + 37 Iran-specific additions), including Anatomical Therapeutic Chemical (ATC) codes, Defined Daily Doses (DDD), dosage form/DDD ratios, prescription quantities, disease types (acute/chronic), and estimated monthly usage. The data enables granular analysis of medication access patterns aligned with Iran’s disease burden and treatment protocols.

Num ber	Gene ric code	Generic name	ATC code	DDD	Dose form/ DDD	Number Per Prescript ion	Diseas e Type	Monthl y Usage
1	68	Amitriptyline25mg	N06AA 09	75mg	0.33	30	Chroni c	90
2	77	Amoxicilline500mg	J01CA0 4	1.5gr	0.33	20	Acute	30
3	7125	Bisoprolol5mg	C07AB0 7	10mg	0.5	30	Chroni c	60
4	205	Captopril25mg	C09AA 01	50mg	0.5	90	Chroni c	60
5	237	Ceftriaxone1gr	J01DD0 4	2gr	0.5	2	Acute	3
6	296	Ciprifloxacin500mg	J01MA0 2	1gr	0.5	20	Acute	20
7	340	Syrup Co-trimoxazol	J01EE0 1		1	1	Acute	1
8	420	Diazepam5mg	N05BA 01	10mg	0.5	30	Acute	10
9	15917	Diclofenac50mg	M01AB 05	0.1gr	0.5	20	Acute	20
10	817	Metformin500mg	A10BA 02	2gr	0.25	100	Chroni c	120
11	931	Omeprazole20mg	A02BC0 1	20mg	1	28	Acute	28
12	4	Syrup Acetaminophen60mg/ml	N02BE0 1	3gr	0.48	1	Acute	1

13	15068	Spray Salbutamol	R03AC02	0.8mg	25	1	Chronic	1
14	5657	Tab Ezetimibe	C10AX09	10mg	1	30	Chronic	30
15	2475	Carvedilol 6.25mg	C07AG02	37.5mg	0.16	90	Chronic	180
16	436	Digoxin.025mg	C01AA05	0.25mg	1	90	Chronic	30
17	2043	Enoxaparin4000	B01AB05	2tu	2	14	Acute	14
18	1933	Lozartan50mg	C09CA01	50mg	1	90	Chronic	30
19	1788	Clopidogrel75mg	B01AC04	75mg	1	90	Chronic	30
20	571	Furosemide40mg	C03CA01	40mg	1	90	Chronic	30
21	2099	Spirolactone100mg	C03DA01	75mg	1.33	90	Chronic	30
22	1395	Aspirin80mg	B01AC06	1tablet	1	90	Chronic	30
23	70	Amelodipine5mg	C08CA01	5mg	1	90	Chronic	30
24	7066	Propranolol20mg	C07AA05	0.16gr	0.12	60	Chronic	90
25	717	Isosorbide dinitrate10mg	C01DA08	60mg	0.16	90	Chronic	60
26	1910	Atorvastatin10mg	C10AA05	20mg	0.5	90	Chronic	60
27	50266	Hydrochlorothiazide12.5mg	C03AA03	25mg	0.5	90	Chronic	60
28	1328	Methylphenidate10mg	N06BA04	30mg	0.33	100	Chronic	90
29	52301	Levodopa - C 100/25mg	N04BA02	0.6gr	0.20	90	Chronic	144
30	334	Clozapine100mg	N05AH02	0.3gr	0.33	90	Chronic	90

31	767	Lithium carbonate300mg	N05AN01	24mmol	0.16	90	Chronic	177
32	277	Amp Chlorpromazine25mg/ml	N05AA01	0.1gr	0.25	1	Acute	4
33	1871	Sodium Valproate500mg	N03AG01	1.5gr	0.33	90	Chronic	90
34	40	Alprazolam 0.5mg	N05BA12	1mg	0.5	90	Chronic	60
35	1512	Fluoxetine10mg	N06AB03	20mg	0.5	30	Chronic	60
36	979	Phenobarbital100mg	N03AA02	0.1gr	1	90	Chronic	30
37	164	Biperiden2mg	N04AA02	10mg	0.2	90	Chronic	150
38	208	Carbamazepine200mg	N03AF01	1gr	0.2	90	Chronic	150
39	2465	Tamoxifen20mg	L02BA01	20mg	1	20	Chronic	30
40	751	Levothyroxine0.1mg	H03AA01	0.15mg	0.66	90	Chronic	45
41	7338	Insulin glargine	A10AE04	40u	7.5	3	Chronic	4
42	674	Insulin regular	A10AB01	40u	25	3	Chronic	1.2
43	1523	Gliclazide80mg	A10BB09	60mg	1.33	90	Chronic	22
44	595	Glibenclamide5mg	A10BB01	10mg	0.5	90	Chronic	60
45	1045	Prednisolone5mg	A01AC04	No DDDs have been established in this group	0.5	5	Chronic	60
46	400	Amp Dexamethasone8mg/ml	A01AC02	No DDDs have been established	5.33	1	Acute	4

				d in this group				
47	1182	Sulfasalazine500mg	A07EC01	2gr	0.25	90	Chronic	120
48	17336	Beclomethasone inhaler spray		0.8MG	25	1	Chronic	1.2
49	1424	Cetirizine10mg	R06AE07	10MG	1	20	Acute	20
50	1226	Timolol eye drop	S01ED01	-	25	1	Chronic	1.2
51	659	Ibuprofen400mg	M01AE01	1.2mg	0.33	20	Acute	20

Table 2 Comprehensive List of 51 Studied Medicines with Therapeutic and Utilization Metrics. Abbreviation: DDD: Defined Daily Doses

Table 3 reports the monthly Out of Pocket (OOP) expenditures for all 51 medicines, converted to USD using Purchasing Power Parity (PPP) exchange rates. Costs reflect medication procurement expenses (excluding administration fees) and highlight affordability challenges, with high-cost agents (e.g., enoxaparin: \$152/month) contrasted against low-cost generics (e.g., diazepam: \$0.41/month).

Generic name	ATC code	2016 mont hly cost	2017 mont hly cost	2018 mont hly cost	2019 mont hly cost	2020 mont hly cost	2021 mont hly cost	2022 mont hly cost	Average of the mont hly cost
Amitriptyline25mg	N06AA09	3.746	3.452	6.924	4.976	5.058	3.651	3.780	4.512
Amoxicilline500mg	J01CA04	6.602	6.241	3.980	2.893	3.793	3.199	5.912	4.660
Bisoprolol5mg	C07AB07	8.768	9.757	9.803	7.560	5.910	4.353	12.993	8.449
Captopril25mg	C09AA01	1.973	2.017	3.545	2.548	3.277	2.288	2.174	2.546
Ceftriaxone1gr	J01DD04	6.152	6.645	5.448	5.730	4.295	3.799	5.343	5.345
Ciprifloxacin500mg	J01MA02	3.599	3.523	7.783	6.202	3.699	2.525	3.533	4.409
Syrup Co-trimoxazole	J01EE01	2.281	2.391	1.986	1.427	1.647	1.089	2.758	1.940

Diazepam5mg	N05B A01	0.398	0.371	0.650	0.467	0.466	0.311	0.254	0.417
Diclofenac50mg	M01A B05	0.953	1.404	1.539	1.444	1.062	0.723	0.532	1.094
Metformin500mg	A10B A02	9.155	8.728	8.594	8.704	9.304	6.562	11.47 5	8.932
Omeprazole20mg	A02BC 01	3.957	4.032	4.418	3.688	3.008	2.241	2.447	3.399
Syrup Acetaminophen60m g/ml	N02BE 01	1.784	2.411	2.774	2.209	2.164	1.738	2.301	2.197
Spray Salbutamol	R03AC 02	9.073	9.186	7.230	6.281	7.147	5.889	6.121	7.275
Tab Ezetimibe	C10A X09	5.111	5.517	4.964	3.822	3.004	2.236	3.025	3.954
Carvedilol 6.25mg	C07A G02	10.98 6	11.61 8	11.96 6	10.54 1	8.455	7.975	7.927	9.924
Digoxin.025mg	C01A A05	1.795	1.945	1.787	1.609	1.639	1.105	1.491	1.625
Enoxaparin4000	B01AB 05	162.3 48	156.2 83	136.1 46	144.7 27	122.1 00	163.7 10	179.6 78	152.1 42
Lozartan50mg	C09CA 01	2.586	2.981	2.666	2.252	2.264	1.931	1.771	2.350
Clopidogrel75mg	B01AC 04	2.477	2.573	7.564	5.733	8.593	5.757	20.92 2	7.660
Furosemide40mg	C03CA 01	1.816	1.867	1.581	1.260	1.193	0.870	0.903	1.356
Spironolactone100 mg	C03D A01	1.068	2.370	6.267	4.561	5.644	3.947	8.238	4.585
Aspirin80mg	B01AC 06	1.376	2.090	2.468	2.032	1.748	1.275	1.111	1.728
Amelodipine5mg	C08CA 01	1.923	2.049	2.221	1.741	1.508	1.109	1.077	1.661
Propranolol20mg	C07A A05	2.762	3.239	6.403	4.601	4.514	3.066	2.563	3.878
Isosorbide dinitrate10mg	C01D A08	1.999	2.311	2.361	1.947	1.753	1.910	2.133	2.059
Atorvastatin10mg	C10A A05	4.471	4.837	4.194	3.506	3.139	2.746	2.451	3.621
Hydrochloorthiazid e12.5mg	C03A A03	0.931	1.181	1.790	1.483	1.551	1.098	0.963	1.285
Methylphenidate10 mg	N06B A04	18.56 1	19.48 0	15.71 0	11.55 3	8.535	6.305	7.006	12.45 0
Levodopa -C 100/25mg	N04B A02	15.19 7	17.74 0	17.65 6	15.14 1	15.73 1	37.37 2	31.16 9	21.42 9
Clozapine100mg	N05A H02	20.40 8	20.42 4	17.26 3	14.33 9	12.59 8	8.476	11.62 6	15.01 9
Lithium carbonate300mg	N05A N01	20.10 5	27.07 6	57.52 5	43.57 9	42.38 4	28.39 7	30.12 3	35.59 9

Amp Chlorpromazine25 mg/ml	N05A A01	4.754	6.559	5.560	4.475	3.766	3.290	3.036	4.492
Sodium Valproate500mg	N03A G01	32.27 1	31.86 3	32.74 4	25.17 8	22.24 7	14.79 6	31.76 4	27.26 6
Alprazolam 0.5mg	N05B A12	3.209	3.064	3.460	2.586	2.538	1.711	2.005	2.653
Fluoxetine10mg	N06A B03	3.418	3.262	3.439	2.477	3.275	4.201	4.376	3.492
Phenobarbital100mg	N03A A02	1.592	1.766	1.750	1.357	1.645	1.141	2.384	1.662
Biperiden2mg	N04A A02	13.96 1	13.96 5	13.50 8	10.19 8	13.28 2	9.210	11.48 6	12.23 0
Carbamazepine200 mg	N03AF 01	15.70 3	16.80 2	15.29 9	12.28 7	14.83 4	13.99 9	17.07 0	15.14 2
Tamoxifen20mg	L02BA 01	3.759	4.674	6.208	5.886	4.573	4.410	2.507	4.574
Levothyroxine0.1mg	H03A A01	3.761	3.797	3.462	3.107	2.991	2.309	2.152	3.083
Insulin glargine	A10AE 04	99.54 2	90.34 8	71.20 3	53.09 2	39.39 7	34.27 0	39.11 4	60.99 5
Insulin regular	A10A B01	12.61 5	11.25 3	10.40 5	8.221	7.854	5.371	4.810	8.647
Gliclazide80mg	A10BB 09	1.102	1.490	1.673	1.330	1.333	0.947	2.378	1.465
Glibenclamide5mg	A10BB 01	2.080	3.500	3.545	2.869	2.485	1.715	1.395	2.513
Prednisolone5mg	A01A C04	3.626	3.358	4.492	3.725	3.421	2.403	2.373	3.343
Amp Dexamethasone8mg /ml	A01A C02	3.243	3.055	3.808	2.980	2.617	2.034	2.020	2.822
Sulfasalazine500mg	A07EC 01	12.66 4	15.47 2	13.94 8	10.53 8	15.19 2	11.35 9	14.14 1	13.33 1
Beclomethasone inhaler spray		1.263	1.213	1.002	8.273	8.622	5.970	5.232	4.511
Cetirizine10mg	R06AE 07	1.260	1.770	1.539	1.211	1.138	0.801	0.883	1.229
Timolol eye drop	S01ED 01	2.722	2.605	2.145	1.638	1.529	1.579	1.293	1.930
Ibuprofen400mg	M01A E01	1.466	1.527	1.340	1.145	2.451	3.384	2.658	1.996

Table 3 Calculated Monthly Out-of-Pocket (OOP) Costs for Essential Medicines in Iran (2016–2022, PPP-adjusted USD)

Table 4 summarizes Average Annual Percentage Change (AAPC) in OOP payments under Iran's two primary insurers. Statistically significant trends ($p < 0.05$) are flagged, revealing rising burdens

for drugs like ezetimibe and declining costs for insulin glargine. Confidence intervals and significance markers clarify policy-relevant variations in financial accessibility.

Drug	Insurance (0=SSO, 1=IHIO)	Joinpoint Model	Start	End	AAPC	AAPC C.I. Low	AAPC C.I. High	Statistically Significant (0=No, 1=Yes)
Amitriptyline25mg	0	0	2016	2022	-1.5124	-4.0697	1.1168	0
Amoxicilline500mg	0	1	2016	2022	-7.5389	-13.2829	0.0189	0
Bisoprolol5mg	0	0	2016	2022	-2.9101	-9.3259	4.1029	0
Captopril25mg	0	0	2016	2022	-0.8313	-4.1011	2.7059	0
Ceftriaxone1gr	0	0	2016	2022	0.8955	-2.7644	4.7541	0
Ciprofloxacin500mg	0	0	2016	2022	-2.9272	-10.7861	5.9152	0
Syrup Co-trimoxazole	0	0	2016	2022	-1.3597	-6.2674	3.9635	0
Diazepam5mg	0	0	2016	2022	-0.8751	-7.3493	6.1839	0
Diclofenac50mg	0	1	2016	2022	1.1146	-0.4256	2.6978	0
Metformin500mg	0	1	2016	2022	-8.8065	13.9405	-1.7287	1
Omeprazole20mg	0	0	2016	2022	-2.9305	-7.3618	1.7861	0
Syrup Acetaminophen60mg/ml	0	0	2016	2022	-4.8493	-9.5452	0.1602	0
Spray Salbutamol	0	0	2016	2022	-1.8341	-3.6642	0.0075	0
Tab Ezetimibe	0	0	2016	2022	2.704	0.3162	5.1161	1
Carvedilol 6.25mg	0	1	2016	2022	-3.3647	-6.6817	0.3433	0
Digoxin.025mg	0	1	2016	2022	7.5421	2.5119	11.4336	1
Enoxaparin4000	0	1	2016	2022	-4.0911	-5.6	-2.5572	1
Lozartan50mg	0	1	2016	2022	-4.7983	-9.1269	0.5109	0
Clopidogrel75mg	0	1	2016	2022	-6.3706	-9.8263	-1.3633	1
Furosemide40mg	0	0	2016	2022	0.5622	-4.1944	5.6362	0
Spirolactone100mg	0	1	2016	2022	8.2914	-0.6978	15.7987	0
Aspirin80mg	0	0	2016	2022	-4.1522	-11.515	4.0364	0
Amelodipine5mg	0	1	2016	2022	-1.2346	-5.3022	3.7409	0
Propranolol20mg	0	0	2016	2022	-2.7243	-4.5024	-0.9423	1

Isosorbide dinitrate10mg	0	1	2016	2022	-2.7737	-5.2191	-0.4552	1
Atorvastatin10mg	0	1	2016	2022	-1.1678	-6.4833	3.8082	0
Hydrochloorthiazide12.5mg	0	0	2016	2022	-4.0466	12.6113	5.4115	0
Methylphenidate10mg	0	0	2016	2022	-3.6065	-8.8921	2.0526	0
Levodopa - C 100/25mg	0	0	2016	2022	-0.0836	-2.9214	2.7865	0
Clozapine100mg	0	0	2016	2022	-3.4829	-8.4248	1.8071	0
Lithium carbonate300mg	0	0	2016	2022	-7.6059	12.9223	-1.8346	1
Amp Chlorpromazine25 mg/ml	0	0	2016	2022	1.4468	0.7409	2.1796	1
Sodium Valproate500mg	0	0	2016	2022	-5.3084	-9.6033	-0.6918	1
Alprazolam 0.5mg	0	0	2016	2022	-0.9193	-5.4775	3.9576	0
Fluoxetine10mg	0	1	2016	2022	-6.1918	-9.1743	-2.7695	1
Phenobarbital100 mg	0	0	2016	2022	-5.3598	-14.2288	4.8902	0
Biperiden2mg	0	1	2016	2022	-6.6874	-11.0277	-1.4489	1
Carbamazepine200mg	0	1	2016	2022	-6.9693	-12.3597	-0.1241	1
Tamoxifen20mg	0	1	2016	2022	0.0928	-0.4552	0.6097	0
Levothyroxine0.1 mg	0	1	2016	2022	-4.7297	-9.8816	1.6161	0
Insulin glargine	0	1	2016	2022	-3.1987	-5.2662	-0.4412	1
Insulin regular	0	1	2016	2022	-3.2203	-5.5044	-0.1694	1
Gliclazide80mg	0	0	2016	2022	-3.7874	-6.7224	-0.7177	1
Glibenclamide5mg	0	0	2016	2022	-2.1345	-7.6075	3.6433	0
Prednisolone5mg	0	0	2016	2022	0.0003	-2.6806	2.8016	0
Amp Dexamethasone8mg/ml	0	0	2016	2022	0.4116	-1.2214	2.0901	0
Sulfasalazine500mg	0	1	2016	2022	-2.7713	-4.9184	-0.6292	1
Beclomethasone inhaler spray	0	0	2016	2022	-10.9633	-18.936	-2.3077	1
Cetirizine10mg	0	0	2016	2022	-1.379	-4.6424	2.0409	0
Timolol eye drop	0	1	2016	2022	0.4276	-0.8277	1.5793	0

Ibuprofen400mg	0	1	2016	2022	-6.5962	- 10.0335	-2.6511	1
Amitriptyline25mg	1	0	2016	2022	-1.5124	-4.0697	1.1168	0
Amoxicilline500mg	1	1	2016	2022	-7.9734	- 13.7556	-0.1734	1
Bisoprolol5mg	1	0	2016	2022	-2.9101	-9.3259	4.1029	0
Captopril25mg	1	0	2016	2022	-0.8313	-4.1011	2.7059	0
Ceftriaxone1gr	1	0	2016	2022	0.8955	-2.7644	4.7541	0
Ciprifloxacin500mg	1	0	2016	2022	-2.9272	- 10.7861	5.9152	0
Syrup Co-trimoxazole	1	1	2016	2022	-8.2155	- 13.2325	-1.1636	1
Diazepam5mg	1	0	2016	2022	-0.8751	-7.3493	6.1839	0
Diclofenac50mg	1	0	2016	2022	0.2358	-3.6991	4.3523	0
Metformin500mg	1	1	2016	2022	-8.8065	- 13.9405	-1.7287	1
Omeprazole20mg	1	0	2016	2022	-2.9305	-7.3618	1.7861	0
Syrup Acetaminophen60 mg/ml	1	0	2016	2022	-4.8493	-9.5452	0.1602	0
Spray Salbutamol	1	0	2016	2022	-1.8341	-3.6642	0.0075	0
Tab Ezetimibe	1	0	2016	2022	2.704	0.3162	5.1161	1
Carvedilol 6.25mg	1	1	2016	2022	-3.3647	-6.6817	0.3433	0
Digoxin.025mg	1	0	2016	2022	-3.7722	-11.108	4.1995	0
Enoxaparin4000	1	1	2016	2022	-4.0911	-5.6	-2.5572	1
Lozartan50mg	1	1	2016	2022	-3.7672	-7.1075	0.2047	0
Clopidogrel75mg	1	1	2016	2022	-6.3706	-9.8263	-1.3633	1
Furosemide40mg	1	0	2016	2022	0.5622	-4.1944	5.6362	0
Spironolactone100 mg	1	0	2016	2022	-6.5417	- 10.0712	-2.7023	1
Aspirin80mg	1	0	2016	2022	-4.1522	-11.515	4.0364	0
Amelodipine5mg	1	1	2016	2022	-1.2346	-5.3022	3.7409	0
Propranolol20mg	1	0	2016	2022	-2.7243	-4.5024	-0.9423	1
Isosorbide dinitrate10mg	1	1	2016	2022	-2.7737	-5.2191	-0.4552	1
Atorvastatin10mg	1	1	2016	2022	-1.1678	-6.4833	3.8082	0
Hydrochlorothiazide12.5mg	1	0	2016	2022	-4.0466	- 12.6113	5.4115	0
Methylphenidate10mg	1	0	2016	2022	-3.6065	-8.8921	2.0526	0

Levodopa - C 100/25mg	1	0	2016	2022	-0.0836	-2.9214	2.7865	0
Clozapine100mg	1	0	2016	2022	-3.4829	-8.4248	1.8071	0
Lithium carbonate300mg	1	0	2016	2022	-7.6059	- 12.9223	-1.8346	1
Amp Chlorpromazine25 mg/ml	1	0	2016	2022	1.4468	0.7409	2.1796	1
Sodium Valproate500mg	1	0	2016	2022	-5.3084	-9.6033	-0.6918	1
Alprazolam 0.5mg	1	0	2016	2022	-0.9193	-5.4775	3.9576	0
Fluoxetine10mg	1	1	2016	2022	-6.1918	-9.1743	-2.7695	1
Phenobarbital100 mg	1	0	2016	2022	-5.3598	- 14.2288	4.8902	0
Biperiden2mg	1	1	2016	2022	-6.6874	- 11.0277	-1.4489	1
Carbamazepine20 0mg	1	1	2016	2022	-6.9693	- 12.3597	-0.1241	1
Tamoxifen20mg	1	0	2016	2022	-3.6661	-6.3152	-0.9089	1
Levothyroxine0.1 mg	1	1	2016	2022	-4.7297	-9.8816	1.6161	0
Insulin glargine	1	1	2016	2022	- 12.599 3	- 19.3612	-3.2861	1
Insulin regular	1	1	2016	2022	- 12.393 4	- 18.9345	-3.2201	1
Gliclazide80mg	1	1	2016	2022	7.5143	0.4606	13.266 5	1
Glibenclamide5mg	1	0	2016	2022	-2.1345	-7.6075	3.6433	0
Prednisolone5mg	1	0	2016	2022	0.0003	-2.6806	2.8016	0
Amp Dexamethasone8m g/ml	1	0	2016	2022	0.4116	-1.2214	2.0901	0
Sulfasalazine500m g	1	1	2016	2022	-2.7713	-4.9184	-0.6292	1
Beclomethasone inhaler spray	1	0	2016	2022	- 10.963 3	-18.936	-2.3077	1
Cetirizine10mg	1	0	2016	2022	-1.3917	-4.6772	2.0557	0
Timolol eye drop	1	1	2016	2022	0.4276	-0.8277	1.5793	0
Ibuprofen400mg	1	1	2016	2022	-6.5962	- 10.0335	-2.6511	1

Table 4 Joinpoint Regression Analysis of Annual OOP Payment Trends by Medicine and Insurance Type (2016–2022)

Abbreviation: SSO: Social Security Organization, IHIO: Iran Health Insurance Organization.

Generic name	2016		2017	
	SSO	IHIO	SSO	IHIO
Acetaminophen 60mg	50.50%	43.10%	52.60%	47.30%
Alperazolam 0.5mg	47.20%	42.50%	46.70%	53.40%
Amelodipine5mg	44.30%	39.40%	41.50%	36.10%
Amitriptyline5mg2	58.80%	57.20%	64.30%	71.60%
Amoxicilline500mg	42.90%	37.30%	45.60%	37.70%
Amp Chlorpromazine	74.80%	43.00%	72.10%	45.20%
Aspirin80mg	49.60%	48.20%	43.50%	45.80%
Atorvastatin10mg	42.50%	58.20%	53.40%	59.60%
Beclomethasone inhal	62.80%	42.10%	66.20%	48.20%
Biperiden2mg	48.30%	57.20%	45.30%	55.80%
Bisoprolol5mg	43.00%	74.80%	45.20%	72.10%
Captopril25mg	45.20%	54.80%	50.30%	69.90%
Carbamazepine200mg	37.60%	62.80%	44.00%	66.20%
Carvedilol 6.25mg	39.90%	51.70%	46.50%	48.00%
Ceftriaxone1gr	67.00%	45.20%	67.10%	50.30%
Cetirizine10mg	60.30%	51.90%	62.40%	54.20%
Ciprofloxacin500mg	42.10%	48.90%	48.20%	45.60%
Clopidogrel75mg	57.20%	50.50%	42.40%	52.60%
Clozapine100mg	38.70%	81.60%	37.80%	83.70%
Co-trimoxazol (Syrup	51.90%	38.50%	54.20%	47.80%
Dexamethasone 8mg/	81.60%	58.80%	83.70%	64.30%
Diazepam5mg	57.20%	41.50%	71.60%	45.20%
Diclofenac50mg	63.40%	67.00%	60.60%	67.10%
Digoxin.025mg	40.50%	38.90%	45.20%	38.60%
Enoxaparin4000	41.10%	53.60%	44.20%	50.50%
Ezetimibe (Tab)	41.10%	43.40%	43.50%	42.00%
Fluoxetine10mg	58.20%	41.40%	59.60%	40.70%
Furosemide40mg	43.10%	42.50%	47.30%	42.80%
Glibenclamide5mg	57.20%	41.10%	48.60%	43.50%
Gliclazide80mg	51.70%	57.20%	48.00%	42.40%
Hydrochloorthiazide1	54.80%	39.90%	69.90%	46.50%
Ibuprofen400mg	58.40%	63.40%	59.90%	60.60%
Insulin glargine	36.30%	52.40%	37.20%	53.90%
Insulin regular	38.90%	79.70%	38.60%	85.00%
Isosorbide dinitrate10	49.00%	49.60%	50.90%	43.50%
Levodopa - C 100/25r	34.80%	58.40%	39.60%	59.90%
Levothyroxine0.1mg	43.40%	38.70%	42.00%	37.80%
Lithium carbonate300	42.50%	47.20%	42.80%	46.70%
Lozartan50mg	38.50%	41.10%	47.80%	42.00%
Metformin500mg	41.40%	37.60%	40.70%	44.00%
Methylphenidate10mg	39.40%	57.20%	36.10%	48.60%
Omeprazole20mg	44.20%	34.80%	50.20%	39.60%
Phenobarbital100mg	48.90%	44.30%	45.60%	41.50%
Prednisolone5mg	79.70%	42.90%	85.00%	45.60%
Propranolol20mg	57.20%	44.20%	55.80%	50.20%

Salbutamol (Spray)	41.50%	48.30%	45.20%	45.30%
Sodium Valproate500	37.30%	60.30%	37.70%	62.40%
Spirolactone100mg	48.20%	49.00%	45.80%	50.90%
Sulfasalazine500mg	41.10%	36.30%	42.00%	37.20%
Tamoxifen20mg	53.60%	40.50%	50.50%	45.20%
Timolol eye drop	52.40%	41.10%	53.90%	44.20%

Out-of-Pocket (OOP) Percentages for Studied Medicines (2016-2022). Abbreviation: SSO: Social Security Organi

2018		2019		202
SSO	IHIO	SSO	IHIO	SSO
50.30%	47.80%	50.20%	46.40%	45.00%
44.80%	51.50%	46.60%	47.40%	49.60%
45.30%	38.50%	46.80%	37.30%	48.40%
56.40%	59.90%	55.00%	59.80%	52.90%
51.40%	34.60%	54.40%	35.40%	46.10%
75.70%	45.80%	77.10%	46.00%	77.20%
43.90%	35.80%	51.60%	39.70%	42.00%
51.50%	57.70%	47.40%	59.50%	43.50%
71.70%	40.10%	44.20%	39.10%	40.30%
42.20%	50.50%	45.00%	52.00%	40.40%
45.80%	75.70%	46.00%	77.10%	43.90%
45.80%	56.80%	47.10%	52.60%	42.00%
40.40%	71.70%	42.20%	44.20%	37.20%
49.10%	47.70%	48.60%	49.30%	50.20%
70.90%	45.80%	68.70%	47.10%	72.00%
61.90%	54.80%	63.10%	56.60%	58.80%
40.10%	44.10%	39.10%	49.10%	41.20%
36.00%	50.30%	35.50%	50.20%	33.60%
35.80%	81.00%	37.20%	83.40%	36.40%
54.80%	41.20%	56.60%	45.30%	49.80%
81.00%	56.40%	83.40%	55.00%	83.10%
59.90%	43.20%	59.80%	41.80%	54.40%
60.30%	70.90%	57.80%	68.70%	58.20%
46.50%	40.30%	44.00%	41.80%	42.00%
42.70%	47.20%	43.60%	44.20%	39.80%
43.70%	43.20%	44.00%	45.10%	45.40%
57.70%	41.50%	59.50%	40.40%	55.00%
47.80%	33.50%	46.40%	35.20%	49.90%
46.80%	43.70%	49.40%	44.00%	49.50%
47.70%	36.00%	49.30%	35.50%	42.80%
56.80%	49.10%	52.60%	48.60%	46.00%
65.80%	60.30%	65.40%	57.80%	74.50%
37.60%	57.10%	39.70%	56.70%	37.40%
40.30%	82.10%	41.80%	82.30%	39.40%
59.60%	43.90%	54.50%	51.60%	48.80%
39.10%	65.80%	39.10%	65.40%	38.10%
43.20%	35.80%	45.10%	37.20%	42.50%
33.50%	44.80%	35.20%	46.60%	34.80%
41.20%	42.00%	45.30%	43.00%	44.00%
41.50%	40.40%	40.40%	42.20%	39.40%
38.50%	46.80%	37.30%	49.40%	38.00%
46.30%	39.10%	45.20%	39.10%	43.60%
44.10%	45.30%	49.10%	46.80%	43.90%
82.10%	51.40%	82.30%	54.40%	78.30%
50.50%	46.30%	52.00%	45.20%	52.10%

43.20%	42.20%	41.80%	45.00%	41.70%
34.60%	61.90%	35.40%	63.10%	33.20%
35.80%	59.60%	39.70%	54.50%	35.00%
42.00%	37.60%	43.00%	39.70%	39.30%
47.20%	46.50%	44.20%	44.00%	42.30%
57.10%	42.70%	56.70%	43.60%	52.40%

ization, IHIO: Iran Health Insurance Organization.

20	2021		2022	
IHIO	SSO	IHIO	SSO	IHIO
49.90%	51.30%	57.50%	33.50%	39.30%
43.50%	55.30%	46.60%	37.40%	41.80%
38.00%	49.00%	41.60%	37.10%	25.60%
54.40%	59.60%	64.50%	54.90%	58.30%
33.20%	50.80%	35.40%	23.90%	23.70%
43.90%	79.40%	52.60%	79.60%	29.90%
35.00%	45.70%	36.50%	32.80%	30.00%
55.00%	46.60%	52.30%	41.80%	38.50%
41.20%	41.30%	47.20%	35.20%	32.00%
52.10%	40.50%	53.20%	29.30%	45.20%
77.20%	52.60%	79.40%	29.90%	79.60%
46.00%	48.10%	54.50%	44.40%	47.20%
40.30%	37.20%	41.30%	24.40%	35.20%
42.80%	44.70%	45.30%	33.30%	91.80%
42.00%	73.50%	48.10%	68.10%	44.40%
49.80%	65.70%	58.60%	52.10%	26.60%
43.90%	47.20%	47.80%	32.00%	28.40%
45.00%	35.00%	51.30%	40.70%	33.50%
83.10%	38.60%	86.50%	27.20%	82.20%
44.00%	58.60%	39.50%	44.70%	32.50%
52.90%	86.50%	59.60%	82.20%	54.90%
41.70%	64.50%	41.80%	58.30%	37.20%
72.00%	68.20%	73.50%	65.70%	68.10%
39.40%	51.20%	41.40%	68.90%	13.90%
42.30%	38.10%	46.40%	31.50%	41.50%
42.50%	53.70%	46.70%	45.20%	28.50%
39.40%	52.30%	43.60%	38.50%	19.80%
34.80%	57.50%	35.20%	39.30%	22.90%
45.40%	52.40%	53.70%	43.60%	45.20%
33.60%	45.30%	35.00%	38.90%	40.70%
50.20%	54.50%	44.70%	47.20%	33.30%
58.20%	44.80%	68.20%	41.70%	60.60%
52.40%	38.70%	54.20%	28.20%	54.70%
78.30%	41.40%	85.60%	29.70%	80.60%
42.00%	48.30%	45.70%	38.10%	32.80%
74.50%	41.40%	44.80%	33.90%	41.70%
36.40%	46.70%	38.60%	28.50%	27.20%
49.60%	35.20%	55.30%	22.90%	37.40%
39.30%	39.50%	41.40%	29.90%	32.60%
37.20%	43.60%	37.20%	19.80%	24.40%
49.50%	41.60%	52.40%	25.60%	43.60%
38.10%	48.70%	41.40%	34.80%	33.90%
48.40%	47.80%	49.00%	28.40%	37.10%
46.10%	85.60%	50.80%	80.60%	23.10%
43.60%	53.20%	48.70%	45.20%	34.80%

40.40%	41.80%	40.50%	37.20%	29.30%
58.80%	35.40%	65.70%	23.70%	52.00%
48.80%	36.50%	48.30%	92.30%	38.10%
37.40%	41.40%	38.70%	32.60%	12.90%
42.00%	46.40%	51.20%	54.50%	26.90%
39.80%	54.20%	38.10%	54.70%	31.50%