

Ontology for Symptomatic Treatment of Multiple Sclerosis

Supplement B. Full list of rules

1	STMSO:Has age(?patient, ?age) ^ swrlb:greaterThan(?age, 60) -> STMSO:Should prescribe with caution(?patient, STMSO:Pramipexole)	Drug- patient's status: Age
2	STMSO:Has age(?patient, ?age) ^ swrlb:greaterThan(?age, 60) -> STMSO:Should prescribe with caution(?patient, STMSO:Oxybutynin)	Drug- patient's status: Age
3	STMSO:Has age(?patient, ?age) ^ swrlb:greaterThan(?age, 60) -> STMSO:Should prescribe with caution(?patient, STMSO:Citalopram)	
4	STMSO:Should not prescribe(?patient, ?treatment) -> STMSO:pregnancy forbidden treatment(?treatment)	
5	STMSO:Has age(?patient, ?age) ^ swrlb:greaterThan(?age, 60) -> STMSO:Should prescribe with caution(?patient, STMSO:Clonazepam)	
6	STMSO:Has age(?patient, ?age) ^ swrlb:greaterThan(?age, 60) -> STMSO:Should prescribe with caution(?patient, STMSO:Lorazepam)	
7	STMSO:Has age(?patient, ?age) ^ swrlb:greaterThan(?age, 60) -> STMSO:Should prescribe with caution(?patient, STMSO:Zolpidem)	
8	swrlb:lessThan(?age, 18) ^ STMSO:Has age(?patient, ?age) -> STMSO:Should prescribe with caution(?patient, STMSO:Botox)	
9	STMSO:Should_prescribe(?patient, ?treatment) ^ STMSO:Should_prescribe_with_caution(?patient, ?treatment) -> STMSO:conflict_treatment(?treatment)	
10	STMSO:Has_sickness(?patient, STMSO:diabet_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Imipramine)	
11	STMSO:Has_sickness(?patient, STMSO:diabet_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Mianserin)	
12	STMSO:Has_sickness(?patient, STMSO:diabet_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Diazepam)	
13	STMSO:Has_sickness(?patient, STMSO:diabet_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Mirtazapine)	
14	STMSO:Has_sickness(?patient, STMSO:diabet_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Atenolol)	
15	STMSO:Has_sickness(?patient, STMSO:diabet_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Cannabis_sativa_L)	
16	STMSO:Has_sickness(?patient, STMSO:diabet_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Fampridine)	
17	STMSO:Has_sickness(?patient, STMSO:diabet_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Baclofen)	

Ontology for Symptomatic Treatment of Multiple Sclerosis

Supplement B. Continued

18	STMSO:Has_sickness(?patient, STMSO:diabet_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO: Levothyroxine)	
19	STMSO:Patient(?patient) ^ STMSO:Has_EDSS(?patient, ?edss) ^ swrlb:lessThan(?edss, 5) -> STMSO:Should be used(?patient, STMSO: Aerobic)	
20	STMSO:Patient(?patient) ^ STMSO:Has_EDSS(?patient, ?edss) ^ swrlb:lessThan(?edss, 7) -> STMSO:Should be used(?patient, STMSO: Endurance training)	
21	STMSO:Patient(?patient) ^ STMSO:Has_EDSS(?patient, ?edss) ^ swrlb:lessThan(?edss, 7) -> STMSO:Should be used(?patient, STMSO: Treadmill walking)	
22	STMSO:Has_sickness(?patient, STMSO:glaucoma_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Mirtazapine)	
23	STMSO:Has_sickness(?patient, STMSO:glaucoma_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Imipramine)	
24	STMSO:Has_sickness(?patient, STMSO:glaucoma_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Meclizine)	
25	STMSO:Has_sickness(?patient, STMSO:glaucoma_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Mianserin)	
26	STMSO:Has_sickness(?patient, STMSO:heart_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Desmopressin)	
27	STMSO:Has_sickness(?patient, STMSO:glaucoma_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Duloxetine)	
28	STMSO:Has_sickness(?patient, STMSO:glaucoma_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Sertraline)	
29	STMSO:Has_sickness(?patient, STMSO:glaucoma_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Topiramate)	
30	STMSO:Has_sickness(?patient, STMSO:glaucoma_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Trihexyphenidyl)	
31	STMSO:Has_sickness(?patient, STMSO:glaucoma_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Hyoscyamine)	
32	STMSO:Has_sickness(?patient, STMSO:glaucoma_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Venlafaxine)	

Ontology for Symptomatic Treatment of Multiple Sclerosis

Supplement B. Continued

33	STMSO:Has_sickness(?patient, STMSO:heart_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Vardenafil)	
34	STMSO:Has_sickness(?patient, STMSO:heart_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Mirtazapine)	
35	STMSO:Has_sickness(?patient, STMSO:heart_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Desmopressin)	
36	STMSO:Has_sickness(?patient, STMSO:heart_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Atenolol)	
37	STMSO:Has_sickness(?patient, STMSO:heart_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Venlafaxine)	
38	STMSO:Has_sickness(?patient, STMSO:heart_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Biperiden)	
39	STMSO:Has_sickness(?patient, STMSO:heart_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Apomorphine)	
40	STMSO:Has_sickness(?patient, STMSO:heart_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Trazodone)	
41	STMSO:Has_sickness(?patient, STMSO:kidney_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Trazodone)	
42	STMSO:Has_sickness(?patient, STMSO:kidney_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Sildenafil)	
43	STMSO:Has_sickness(?patient, STMSO:kidney_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Venlafaxine)	
44	STMSO:Has_sickness(?patient, STMSO:kidney_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Desmopressin)	
45	STMSO:Has_sickness(?patient, STMSO:kidney_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Isoniazid)	
46	STMSO:Has_sickness(?patient, STMSO:kidney_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Mirtazapine)	
47	STMSO:Has_sickness(?patient, STMSO:kidney_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Vardenafil)	

Ontology for Symptomatic Treatment of Multiple Sclerosis

Supplement B. Continued

48	STMSO:Has_sickness(?patient, STMSO:kidney_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Hyoscyamine)	
49	STMSO:Has_sickness(?patient, STMSO:kidney_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Trihexyphenidyl)	
50	STMSO:Has_sickness(?patient, STMSO:kidney_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Levetiracetam)	
51	STMSO:Has_sickness(?patient, STMSO:kidney_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Topiramate)	
52	STMSO:Has_sickness(?patient, STMSO:kidney_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Baclofen)	
53	STMSO:Has_sickness(?patient, STMSO:liver_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Biperiden)	
54	STMSO:Has_sickness(?patient, STMSO:liver_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Solifenacin)	
55	STMSO:Has_sickness(?patient, STMSO:glaucoma_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Trihexyphenidyl)	
56	STMSO:Has_sickness(?patient, STMSO:liver_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Levofloxacin)	
57	STMSO:Has_sickness(?patient, STMSO:liver_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Sildenafil)	
58	STMSO:Has_sickness(?patient, STMSO:liver_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Mianserin)	
59	STMSO:Has_sickness(?patient, STMSO:liver_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Escitalopram)	
60	STMSO:Has_sickness(?patient, STMSO:liver_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Tolterodine)	
61	STMSO:Has_sickness(?patient, STMSO:liver_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Alfuzosin)	
62	STMSO:Has_sickness(?patient, STMSO:liver_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Zolpidem)	
63	STMSO:Has_sickness(?patient, STMSO:liver_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Vardenafil)	

Ontology for Symptomatic Treatment of Multiple Sclerosis

Supplement B. Continued

64	STMSO:Has_sickness(?patient, STMSO:liver_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Baclofen)	
65	STMSO:Has_sickness(?patient, STMSO:liver_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Apomorphine)	
66	STMSO:Has_sickness(?patient, STMSO:liver_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Mirtazapine)	
67	STMSO:Has_sickness(?patient, STMSO:liver_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Venlafaxine)	
68	STMSO:Has_sickness(?patient, STMSO:liver_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Levetiracetam)	
69	STMSO:Has_sickness(?patient, STMSO:liver_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO: Trazodone)	
70	STMSO:Has_sickness(?patient, STMSO:liver_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO: Tizanidine)	
71	STMSO:Has_sickness(?patient, STMSO:liver_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO: Sertraline)	
72	STMSO:Has_sickness(?patient, STMSO:liver_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO: Memantine)	
73	STMSO:Has_sickness(?patient, STMSO:liver_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO: Isoniazid)	
74	STMSO:Has_sickness(?patient, STMSO:pregnant) -> STMSO:Should_not_prescribe(?patient, STMSO:Atenolol)	
75	STMSO:Has_sickness(?patient, STMSO:pregnant) -> STMSO:Should_not_prescribe(?patient, STMSO:Cannabis_sativa_L)	
76	STMSO:Has_sickness(?patient, STMSO:pregnant) -> STMSO:Should_not_prescribe(?patient, STMSO:Diazepam)	
77	STMSO:Has_sickness(?patient, STMSO:pregnant) -> STMSO:Should not_prescribe(?patient, STMSO:Imipramine)	
78	STMSO:Has_sickness(?patient, STMSO:pregnant) -> STMSO:Should not_prescribe(?patient, STMSO: Fampridine)	
79	STMSO:Has_sickness(?patient, STMSO:Partial) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Dalfampridine)	
80	STMSO:Has_sickness(?patient, STMSO:seizure_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Lamotrigine)	

Ontology for Symptomatic Treatment of Multiple Sclerosis

Supplement B. Continued

81	STMSO:Has_sickness(?patient, STMSO:Seizures) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Baclofen)	
82	STMSO:Has_sickness(?patient, STMSO:seizure_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Memantine)	
83	STMSO:Has_sickness(?patient, STMSO:seizure_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Topiramate)	
84	STMSO:Has_sickness(?patient, STMSO:seizure_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Venlafaxine)	
85	STMSO:Has_sickness(?patient, STMSO:seizure_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Carbamazepine)	
86	STMSO:Has_sickness(?patient, STMSO:seizure_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Mirtazapine)	
87	STMSO:Has_sickness(?patient, STMSO:seizure_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Citalopram)	
88	STMSO:Has_sickness(?patient, STMSO:seizure_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Levothyroxine)	
89	STMSO:Has_sickness(?patient, STMSO:seizure_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Imipramine)	
90	STMSO:Has_sickness(?patient, STMSO:seizure_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Sertraline)	
91	STMSO:Has_sickness(?patient, STMSO:seizure_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Mianserin)	
92	STMSO:Has_sickness(?patient, STMSO:seizure_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Isoniazid)	
93	STMSO:Has_sickness(?patient, STMSO:seizure_disease) -> STMSO:Should_prescribe_with_caution(?patient, STMSO:Bupropion)	
94	STMSO:Has_underlying_disease(?p, STMSO:Fecal_Incontinence) -> STMSO:Should_be_checked_for_side_effect_of(?p, STMSO:Dimethyl_fumarate)	Distinguishing rules between side effects of disease modifying drugs and symptoms

Ontology for Symptomatic Treatment of Multiple Sclerosis

Supplement B. Continued

95	STMSO:Has_symptom(?p, STMSO:Fatigue) -> STMSO:Should_be_checked_for_side_effect_of(?p, STMSO:Ocrelizumab)	
96	STMSO:Has_symptom(?p, STMSO:Urinary_tract_infection) -> STMSO:Should_be_checked_for_side_effect_of(?p, STMSO:Fingolimod)	
97	STMSO:Has_(?patient, STMSO:low Socioeconomic) -> STMSO:Should_prescribe an alternative medication(?patient, STMSO:Alfuzosin)	
98	STMSO:Has_(?patient, STMSO:low Socioeconomic) -> STMSO:Should_prescribe an alternative medication(?patient, STMSO:Amifampridine)	
99	STMSO:Has_(?patient, STMSO:low Socioeconomic) -> STMSO:Should_prescribe an alternative medication(?patient, STMSO:Amphetamine)	
100	STMSO:Has_(?patient, STMSO:low Socioeconomic) -> STMSO:Should_prescribe an alternative medication(?patient, STMSO:Cannabis_sativa_L)	
101	STMSO:Has_(?patient, STMSO:low Socioeconomic) -> STMSO:Should_prescribe an alternative medication(?patient, STMSO:Capsaicin_topical)	
102	STMSO:Has_(?patient, STMSO:low Socioeconomic) -> STMSO:Should_prescribe an alternative medication(?patient, STMSO:Carisoprodol)	
103	STMSO:Has_(?patient, STMSO:low Socioeconomic) -> STMSO:Should_prescribe an alternative medication(?patient, STMSO:Cyclobenzaprine)	
104	STMSO:Has_(?patient, STMSO:low Socioeconomic) -> STMSO:Should_prescribe an alternative medication(?patient, STMSO:Dalfampridine)	
105	STMSO:Has_(?patient, STMSO:low Socioeconomic) -> STMSO:Should_prescribe an alternative medication(?patient, STMSO:Desvenlafaxine)	
106	STMSO:Has_(?patient, STMSO:low Socioeconomic) -> STMSO:Should_prescribe an alternative medication(?patient, STMSO:Fesoterodine)	

Ontology for Symptomatic Treatment of Multiple Sclerosis

Supplement B. Continued

107	STMSO:Has_(?patient, STMSO:low Socioeconomic) -> STMSO:Should_prescribe an alternative medication(?patient, STMSO:Ginkgo)	
108	STMSO:Has_(?patient, STMSO:low Socioeconomic) -> STMSO:Should_prescribe an alternative medication(?patient, STMSO:Hyoscyamine)	
109	STMSO:Has_(?patient, STMSO:low Socioeconomic) -> STMSO:Should_prescribe an alternative medication(?patient, STMSO:Interferon_beta-1a)	
110	STMSO:Has_(?patient, STMSO:low Socioeconomic) -> STMSO:Should_prescribe an alternative medication(?patient, STMSO:Intravenous_immunoglobulin)	
111	STMSO:Has_(?patient, STMSO:low Socioeconomic) -> STMSO:Should_prescribe an alternative medication(?patient, STMSO:Lacosamide)	
112	STMSO:Has_(?patient, STMSO:low Socioeconomic) -> STMSO:Should_prescribe an alternative medication(?patient, STMSO:Laxatives)	
113	STMSO:Has_(?patient, STMSO:low Socioeconomic) -> STMSO:Should_prescribe an alternative medication(?patient, STMSO:Levetiracetam)	
114	STMSO:Has_(?patient, STMSO:low Socioeconomic) -> STMSO:Should_prescribe an alternative medication(?patient, STMSO:Levocarnitine)	
115	STMSO:Has_(?patient, STMSO:low Socioeconomic) -> STMSO:Should_prescribe an alternative medication(?patient, STMSO:Levofloxacin)	
116	STMSO:Has_(?patient, STMSO:low Socioeconomic) -> STMSO:Should_prescribe an alternative medication(?patient, STMSO:Levomilnacipran)	
117	STMSO:Has_(?patient, STMSO:low Socioeconomic) -> STMSO:Should_prescribe an alternative medication(?patient, STMSO:Levothyroxine)	
118	STMSO:Has_(?patient, STMSO:low Socioeconomic) -> STMSO:Should_prescribe an alternative medication(?patient, STMSO:Lisdexamfetamine)	

Ontology for Symptomatic Treatment of Multiple Sclerosis

Supplement B. Continued

119	STMSO:Has_(?patient, STMSO:low Socioeconomic) -> STMSO:Should_prescribe an alternative medication(?patient, STMSO:lubricating_jelly)	
120	STMSO:Has_(?patient, STMSO:low Socioeconomic) -> STMSO:Should_prescribe an alternative medication(?patient, STMSO:Mazindol)	
121	STMSO:Has_(?patient, STMSO:low Socioeconomic) -> STMSO:Should_prescribe an alternative medication(?patient, STMSO:Meclizine)	
122	STMSO:Has_(?patient, STMSO:low Socioeconomic) -> STMSO:Should_prescribe an alternative medication(?patient, STMSO:Memantine)	
123	STMSO:Has_(?patient, STMSO:low Socioeconomic) -> STMSO:Should_prescribe an alternative medication(?patient, STMSO:Metaxalone)	
124	STMSO:Has_(?patient, STMSO:low Socioeconomic) -> STMSO:Should_prescribe an alternative medication(?patient, STMSO:Mianserin)	
125	STMSO:Has_(?patient, STMSO:low Socioeconomic) -> STMSO:Should_prescribe an alternative medication(?patient, STMSO:Mirabegron)	
126	STMSO:Has_(?patient, STMSO:low Socioeconomic) -> STMSO:Should_prescribe an alternative medication(?patient, STMSO:Mirtazapine)	
27	STMSO:Has_(?patient, STMSO:low Socioeconomic) -> STMSO:Should_prescribe an alternative medication(?patient, STMSO:Modafinil)	
128	STMSO:Has_(?patient, STMSO:low Socioeconomic) -> STMSO:Should_prescribe an alternative medication(?patient, STMSO:Nabilone)	
129	STMSO:Has_(?patient, STMSO:low Socioeconomic) -> STMSO:Should_prescribe an alternative medication(?patient, STMSO:Nefazodone)	
130	STMSO:Has_(?patient, STMSO:low Socioeconomic) -> STMSO:Should_prescribe an alternative medication(?patient, STMSO:Paroxetine)	

Ontology for Symptomatic Treatment of Multiple Sclerosis

Supplement B. Continued

131	STMSO:Has_(?patient, STMSO:low Socioeconomic) -> STMSO:Should_prescribe an alternative medication(?patient, STMSO:Pemoline)	
132	STMSO:Has_(?patient, STMSO:low Socioeconomic) -> STMSO:Should_prescribe an alternative medication(?patient, STMSO:Polyethylene_glycol_3350)	
133	STMSO:Has_(?patient, STMSO:low Socioeconomic) -> STMSO:Should_prescribe an alternative medication(?patient, STMSO:Pregabalin)	
134	STMSO:Has_(?patient, STMSO:low Socioeconomic) -> STMSO:Should_prescribe an alternative medication(?patient, STMSO:Sertraline)	
135	STMSO:Has_(?patient, STMSO:low Socioeconomic) -> STMSO:Should_prescribe an alternative medication(?patient, STMSO:Sildenafil)	
136	STMSO:Has_(?patient, STMSO:low Socioeconomic) -> STMSO:Should_prescribe an alternative medication(?patient, STMSO:Tamsulosin)	
137	STMSO:Has_(?patient, STMSO:low Socioeconomic) -> STMSO:Should_prescribe an alternative medication(?patient, STMSO:Terazosin)	
138	STMSO:Has_(?patient, STMSO:low Socioeconomic) -> STMSO:Should_prescribe an alternative medication(?patient, STMSO:Tibolone)	
139	STMSO:Has_(?patient, STMSO:low Socioeconomic) -> STMSO:Should_prescribe an alternative medication(?patient, STMSO:Tizanidine)	