



EUROPEAN MEDICINES AGENCY
SCIENCE MEDICINES HEALTH

10 April 2021
EMA/209381/2021
Information Management Division

PRAC rapid data analytics

Results of study on use of sulfonamide-trimethoprim combinations during pregnancy in IMRD-Germany and IMRD-France

Report on results

Version: 1.0

Date: 26 November 2019

Analysis plan version 1.0 agreed on 11 of November 2019

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Background

The reference safety informations (RSIs) for sulfametrole/trimethoprim, sulfadiazine/trimethoprim, and sulfamethoxazole/trimethoprim (co-trimoxazole) containing products warn that they should be avoided during pregnancy, nevertheless, published studies noted an association between trimethoprim exposure during pregnancy and spontaneous abortion.

Use of trimethoprim-sulfamethoxazole is typically limited to mid-pregnancy, avoiding the first trimester and near term. Trimethoprim is generally avoided in the first trimester because it is a folic acid antagonist, has caused abnormal embryo development in experimental animals, and some case control studies have reported a possible association with a variety of birth defects. However, it is not a proven teratogen in humans. Women are routinely prescribed folic acid supplementation during pregnancy; this may be particularly important in those who are taking trimethoprim. Sulfonamides should be avoided in the last days before delivery because they can displace bilirubin from plasma binding sites in the newborn, with the theoretical increased risk for kernicterus, although kernicterus related solely to in utero sulfonamide exposure has never been reported. Sulfonamides have also been associated with birth defects in a case control study, but these findings should be interpreted with caution as multiple comparisons involving small numbers of affected exposed infants may have led by chance to the observed associations.

The adequacy of current safety information concerning use in pregnancy for the concerned combination products is subject to discussions as part of on-going procedures at PRAC.

1.1. Aim

The aim of this study was to determine the extent of use of sulfonamide and trimethoprim combination products during pregnancy. Use of sulfonamide and trimethoprim combination products was compared to alternative antibiotics: fosfomycin, plain amoxicillin and amoxicillin in combination with clavulanic acid.

The type of infection was classified based on recorded ICD codes.

1.2. Methods

The study uses version 06 (June) 2019 of the IMRD-Germany and IMRD-France databases. The study period is defined as January 2010 to June 2019.

1.2.1. Exposures

The IMRD-Germany and IMRD-France databases use EphMRA ATC codes and all prescriptions have an attributed EphMRA ATC code. Sulfonamides in combination with trimethoprim ('Co-trimoxazole' or 'Trimsulfa') is identified using the EphMRA ATC code J01E (Trimethoprim and similar formulations) and then selecting products that contain both trimethoprim and a sulfonamide (sulfadiazine, sulfamerazine, sulfamethoxazole or sulfametrole). Fosfomycin is identified by searching for substance names that contain the text string 'fosfomycin'. All products with Fosfomycin or Fosfomycin trometamol are selected. Amoxicillin is identified by searching for substance names that contain the text string 'amoxicillin'. Products that contain amoxicillin with or without clavulanic acid will be included. Where combination products are included, results will be provided both by class (trimethoprim with sulfonamide, amoxicillin with/without clavulanic acid, fosfomycin) and by unique ingredients (e.g. separately for trimethoprim with sulfamethoxazole, trimethoprim with sulfamerazine, trimethoprim with sulfametrole, trimethoprim with sulfadiazine and for amoxicillin as monosubstance and in combination with clavulanic acid).

1.2.2. Pregnancy

In the IMRD-Germany and IMRD-France databases it is not possible to identify mother-child pairs. Use during pregnancy instead needs to be identified based on a diagnosis code suggestive of pregnancy (see Annex 1, Appendix 1), and then linking this diagnosis in time to a prescription of a drug of interest.

1.2.3. Type of infection

Diagnoses codes reported on the date of prescription were reviewed, and codes indicative of the type of infection were classified in the following way:

- Respiratory tract infection (ICD 10 codes J00-J22)
- Genitourinary infection (ICD 10 codes N10-N12, N13.6, N15.1-N15.9, N20-N23, N28.8, N28.9, N30, N34, N37, N39.0, N39.8, N39.9, N70-N76, O23)
- Skin infection (ICD codes L00-L08)
- Musculoskeletal infection (ICD codes M00, M01, M86)
- Nervous system infection (ICD 10 codes G00-G08)
- Ear infections (ICD codes H65-H68, H70)

1.2.4. Analysis

All pregnant women, and all use of 'Co-trimoxazole', products that contain both trimethoprim and a sulfonamide (sulfadiazine, sulfamerazine, sulfamethoxazole or sulfametrole) as well as fosfomycin and amoxicillin with or without clavulanic acid during pregnancy in women were captured. Data is provided for the entire study period as well as annually and for each substance and substance combination. The maximum time pregnant (i.e. time window for a possible pregnancy) is calculated from the time point of the recorded pregnancy-related event and the maximum time pregnant for the specific event in accordance with Appendix 1. The denominator is any woman with a pregnancy-related event for which the maximum time pregnant includes the time period. The existence of a prescription for 'products that contain both trimethoprim and a sulfonamide (sulfadiazine, sulfamerazine, sulfamethoxazole or sulfametrole)', fosfomycin and amoxicillin during the maximum time pregnant is considered as exposure during pregnancy. Exposure during pregnancy during the time period is related to all pregnant women during the time period. In addition, the number of women with a recorded pregnancy-related event during the time period and the total number of women with a consultation during the time period will also be shown. In IMRD-Germany, general practitioner (GP) practices and gynaecologist practices are selected for the analysis. Results are presented separately by type of practice.

1.3. Results

1.3.1. IMRD-Germany

1.3.1.1. Women estimated to be pregnant by year

In IMS Germany during the study period, the number of women by speciality considered to be pregnant with different definitions is shown in Table 1.

1.3.1.2. Use of selected antibiotics during maximum estimated time period of pregnancy

Among women estimated to be pregnant prescribing of selected antibiotics are shown in Tables 2 to 3. Yearly prevalence of prescribing among pregnant women is shown in Figure 1.

1.3.1.3. Indications for selected antibiotics prescribed during maximum estimated time period of pregnancy

The percentage of antibiotic prescriptions where a selected indication was identified on the date of the prescription is shown in Tables 4 to 8.

1.3.2. IMRD-France

1.3.2.1. Women estimated to be pregnant by year

In IMRD-France during the study period, the number of women considered to be pregnant by year with different definitions based on the selected pregnancy codes is shown in Table 9.

1.3.2.2. Use of selected antibiotics during maximum estimated time period of pregnancy

Among women estimated to be pregnant prescribing of selected antibiotics are shown in Tables 10 to 11. Yearly prevalence of prescribing among pregnant women is shown in Figure 2.

1.3.2.3. Indications for selected antibiotics prescribed during maximum estimated time period of pregnancy

The percentage of antibiotic prescriptions where a selected indication was identified on the date of prescription is shown in Tables 12 to 16.

1.3.3. Discussion of results in IMRD-Germany

1.3.3.1. Changes in prescribing over time

Prescribing of trimethoprim in combination with sulfamethoxazole was comparatively low throughout the study period and showed a decreasing trend. There was no prescribing of other trimethoprim sulfonamide combinations. Prescribing of amoxicillin also showed a decreasing trend. Amoxicillin in combination with clavulanic acid was the least prescribed among the four groups. In contrast to the other three groups, prescribing of Fosfomycin increased during the study period reaching a maximum in 2018. Fosfomycin was the most frequently prescribed group in gynaecological practices whereas amoxicillin was the most frequently prescribed group in the GP practices.

1.3.3.2. Type of infection

For amoxicillin, at least one diagnosis was identified in around 52% of prescriptions in gynaecologist practices and 63 % of prescriptions in GP practices. Genitourinary infection was the most frequently identified indication in gynaecological practices and respiratory tract infection was the most frequent indication in GP practices. Results were similar for amoxicillin in combination with clavulanic acid except for a lower proportion of prescriptions with an identified diagnosis (41% in gynaecological practices and 57% in GP practices). For Fosfomycin, at least one diagnosis was identified in 72% of prescriptions in gynaecological practices and 77% of prescriptions in GP practices. Genitourinary infection was the most frequent indication, both in gynaecological and GP practices. For trimethoprim in combination with sulfamethoxazole, at least one diagnosis was identified in 51% of gynaecological practices and 62% of GP practices. Genitourinary infection was the most frequently identified indication

in gynaecological practices and respiratory tract infection was the most frequent indication in GP practices.

1.3.4. Discussion of results in IMRD-France

1.3.4.1. *Changes in prescribing over time*

Prescribing of trimethoprim in combination with sulfamethoxazole was the least prescribed group in IMRD-France. Amoxicillin was the most prescribed group and showed a relatively stable trend during the study period. Prescribing of amoxicillin in combination with clavulanic acid slightly decreased during the study period. Prescribing of fosfomycin was lower compared with amoxicillin in combination with clavulanic acid at the beginning of the study period. However, prescribing of fosfomycin increased during the study period and at the end of the study period it reached a slightly higher level of prescribing compared to amoxicillin in combination with clavulanic acid.

1.3.4.2. *Type of infection*

For amoxicillin, at least one diagnosis was identified in 57% of prescriptions. A respiratory tract infection was the most common indication, followed by genitourinary infection and ear infection. For amoxicillin in combination with clavulanic acid a lower proportion of prescriptions had an identified diagnosis, 44%. Again, respiratory tract infection was the most common indication, but genitourinary infection and ear infection were slightly more common compared to amoxicillin without clavulanic acid. For fosfomycin, 64-65% of prescriptions had at least one identified diagnosis. Genitourinary infection was the most common indication. For trimethoprim in combination with sulfamethoxazole, 62-63% of prescriptions had at least one identified indication. Again, genitourinary infection was the most common indication.



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Table 1 Number of women estimated to be pregnant during time period in gynaecologist and GP practices in IMRD-Germany

	Gynaecologist practices						GP practices					
	No. of women with consultation		No of women with a pregnancy event		Maximum estimated no. of pregnant women		No. of women with consultation		No of women with a pregnancy event		Maximum estimated no. of pregnant women	
	12-60 y	15-49 y	12-60 y	15-49 y	12-60 y	15-49 y	12-60 y	15-49 y	12-60 y	15-49 y	12-60 y	15-49 y
2010	443,181	360,399	51,638	51,283	66,199	65,675	645,969	459,856	8720	8613	12,509	12,344
2011	480,863	387,323	55,047	54,667	81,544	80,931	759,470	537,966	10,265	10,137	17,899	17,713
2012	539,889	433,723	62,292	61,872	91,812	91,159	844,594	595,358	11,838	11,735	20,562	20,385
2013	571,492	458,086	67,560	67,153	100,077	99,397	942,090	664,621	13,025	12,860	23,073	22,818
2014	620,925	493,727	72,897	72,458	107,658	106,953	978,932	686,014	14,546	14,359	25,445	25,158
2015	653,115	517,167	79,919	79,455	116,507	115,754	1,011,405	703,378	16,473	16,250	28,492	28,149
2016	647,496	509,573	82,961	82,470	119,813	119,016	1,029,247	713,004	17,800	17,600	29,865	29,520
2017	629,857	490,636	80,979	80,562	116,506	115,763	990,596	679,213	17,106	16,886	28,905	28,554
2018	598,132	461,548	76,128	75,642	103,328	102,600	913,710	623,752	16,598	16,389	25,405	25,086
2019*	404,893	315,455	46,622	46,363	57,085	56,753	616,804	407,886	8642	8492	12,048	11,837

* Until 30 June.

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Table 2 Number of pregnant women 12-60 years with a prescription and number of prescriptions of selected antibiotics during estimated pregnant time period in gynaecologist and GP practices in IMRD-Germany

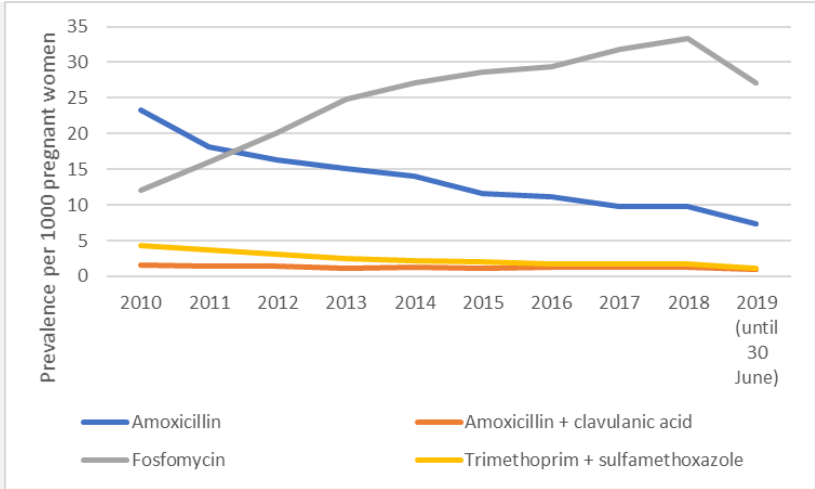
	Gynaecologist practices								GP practices							
	No of women 12-60 years (no. of prescriptions) with antibiotic prescription during estimated pregnant time								No of women 12-60 years (no. of prescriptions) with antibiotic prescription during estimated pregnant time							
	Amoxicillin		Amoxicillin + clavulanic acid		Fosfomycin		Trimethoprim + sulfamethoxazole		Amoxicillin		Amoxicillin + clavulanic acid		Fosfomycin		Trimethoprim + sulfamethoxazole	
2010	1540	1755	107	113	803	873	287	303	484	562	49	57	32	34	130	139
2011	1479	1692	117	130	1304	1458	300	322	660	757	61	65	69	76	136	144
2012	1504	1690	125	132	1853	2083	290	314	744	839	71	76	98	109	173	183
2013	1505	1691	114	122	2477	2822	248	268	875	1009	71	77	153	160	190	209
2014	1512	1698	134	144	2918	3420	240	248	906	1036	83	89	179	197	176	185
2015	1344	1495	136	149	3340	3847	236	254	908	1020	99	107	216	233	166	183
2016	1333	1482	151	159	3520	4092	213	219	940	1061	123	132	236	258	137	144
2017	1135	1237	143	150	3702	4341	207	221	895	997	150	160	279	298	121	126
2018	1013	1109	133	141	3438	4026	180	194	862	953	103	115	288	308	119	124
2019 (until 30 June)	424	458	57	57	1551	1725	63	63	336	360	50	56	63	66	27	27

Table 3 Number of women 15-49 years with a prescription and number of prescriptions of selected antibiotics during estimated pregnant time period in gynaecologist and GP practices in IMRD-Germany

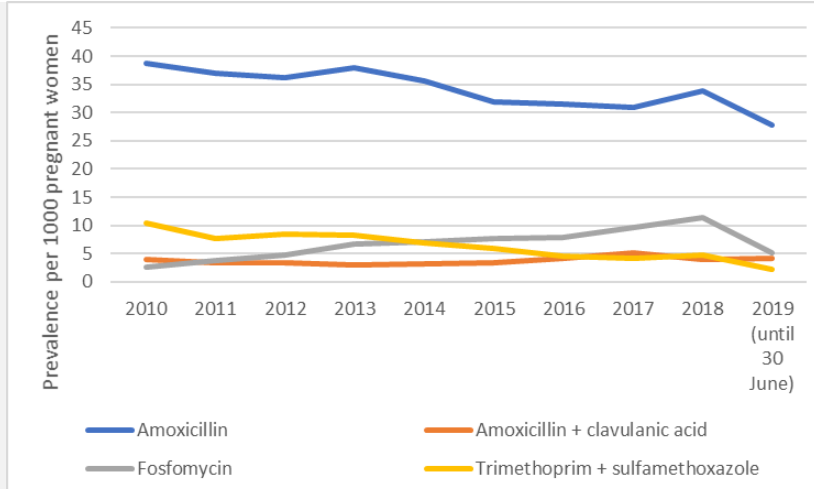
	Gynaecologist practices								GP practices							
	No of women 15-49 years with antibiotic prescription and no. of antibiotic prescriptions during estimated pregnant time								No of women 15-49 years with antibiotic prescription and no. of antibiotic prescriptions during estimated pregnant time							
	Amoxicillin		Amoxicillin + clavulanic acid		Fosfomycin		Trimetho-prim + sulfa-methoxazole		Amoxicillin		Amoxicillin + clavulanic acid		Fosfomycin		Trimetho-prim + sulfa-methoxazole	
2010	1535	1746	104	110	801	871	285	301	481	559	48	55	32	34	128	137
2011	1474	1685	117	130	1295	1448	298	320	654	750	60	64	69	76	134	142
2012	1501	1687	123	130	1847	2077	284	308	741	836	70	74	97	108	173	183
2013	1503	1689	112	119	2466	2811	244	262	872	1006	71	77	150	157	184	198
2014	1507	1693	128	137	2910	3410	237	244	900	1030	81	87	177	195	172	181
2015	1340	1491	133	146	3318	3823	232	250	902	1014	93	99	214	231	162	179
2016	1329	1478	150	158	3503	4072	212	218	931	1050	121	129	235	257	134	141
2017	1133	1235	141	148	3674	4310	206	220	883	983	148	158	273	292	119	124
2018	1012	1108	130	138	3422	4010	179	193	858	949	103	115	284	304	113	118
2019 (until 30 June)	424	458	56	56	1534	1707	63	63	328	350	45	50	61	64	26	26

Figure 1 Prescribing of selected antibiotics during maximum estimated pregnancy time in women 12-60 years

Gynaecological practices IMRD-Germany



GP practices IMRD-Germany





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Table 4 Selected infection diagnoses among prescriptions for amoxicillin during estimated pregnant time period in gynaecologist and GP practices in IMRD-Germany

	Gynaecologist practices		GP practices	
	12-60 y	15-49 y	12-60 y	15-49 y
Amoxicillin				
Prescriptions with ≥ 1 diagnosis	7381 (51.6%)	7368 (51.6%)	5421 (63.1%)	5387 (63.2%)
Respiratory tract infection	1007 (7.0%)	1003 (7.0%)	4436 (51.6%)	4406 (51.7%)
Genitourinary infection	6473 (45.2%)	6464 (45.3%)	705 (8.2%)	703 (8.2%)
Skin infection	48 (0.3%)	48 (0.3%)	101 (1.2%)	100 (1.2%)
Musculoskeletal infection	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Nervous system infection	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Ear infection	9 (0.1%)	9 (0.1%)	433 (5.0%)	432 (5.1%)
Total no. of patients	11,885	11,857	6876	6821
Total no. of prescriptions	14,307	14,270	8594	8527

Table 5 Selected infection diagnoses among prescriptions for amoxicillin + clavulanic acid during estimated pregnant time period in gynaecologist and GP practices in IMRD-Germany

	Gynaecologist practices		GP practices	
	12-60 y	15-49 y	12-60 y	15-49 y
Amoxicillin + clavulanic acid				
Prescriptions with ≥ 1 diagnosis	525 (40.5%)	519 (40.8%)	528 (56.5%)	517 (56.9%)
Respiratory tract infection	34 (2.6%)	34 (2.7%)	406 (43.5%)	396 (43.6%)
Genitourinary infection	473 (36.5%)	467 (36.7%)	63 (6.7%)	62 (6.8%)
Skin infection	22 (1.7%)	22 (1.7%)	37 (4.0%)	37 (4.1%)
Musculoskeletal infection	0 (0.0%)	0 (0.0%)	2 (0.2%)	2 (0.2%)
Nervous system infection	0 (0.0%)	0 (0.0%)	1 (0.1%)	0 (0.0%)
Ear infection	0 (0.0%)	0 (0.0%)	49 (5.2%)	49 (5.4%)
Total no. of patients	1178	1155	830	811
Total no. of prescriptions	1297	1272	934	908



Table 6 Selected infection diagnoses among prescriptions for amoxicillin ± clavulanic acid during estimated pregnant time period in gynaecologist and GP practices in IMRD-Germany

	Gynaecologist practices		GP practices	
	12-60 y	15-49 y	12-60 y	15-49 y
Amoxicillin ± clavulanic acid				
Prescriptions with ≥1 diagnosis	7906 (50.7%)	7887 (50.7%)	5949 (62.4%)	5904 (62.6%)
Respiratory tract infection	1041 (6.7%)	1037 (6.7%)	4842 (50.8%)	4802 (50.9%)
Genitourinary infection	6946 (44.5%)	6931 (44.6%)	768 (8.1%)	765 (8.1%)
Skin infection	70 (0.4%)	70 (0.5%)	138 (1.4%)	137 (1.5%)
Musculoskeletal infection	0 (0.0%)	0 (0.0%)	2 (0.0%)	2 (0.0%)
Nervous system infection	0 (0.0%)	0 (0.0%)	1 (0.0%)	0 (0.0%)
Ear infection	9 (0.1%)	9 (0.1%)	482 (5.1%)	481 (5.1%)
Total no. of patients	12,905	12,854	7543	7473
Total no. of prescriptions	15,604	15,542	9528	9435

Table 7 Selected infection diagnoses among prescriptions for fosfomycin during estimated pregnant time period in gynaecologist and GP practices in IMRD-Germany

	Gynaecologist practices		GP practices	
	12-60 y	15-49 y	12-60 y	15-49 y
Fosfomycin				
Prescriptions with ≥1 diagnosis	20,693 (72.1%)	20,571 (72.1%)	1341 (77.1%)	1327 (77.2%)
Respiratory tract infection	89 (0.3%)	89 (0.3%)	32 (1.8%)	31 (1.8%)
Genitourinary infection	20,666 (72.0%)	20,544 (72.0%)	1329 (76.4%)	1316 (76.6%)
Skin infection	11 (0.0%)	11 (0.0%)	3 (0.0%)	3 (0.0%)
Musculoskeletal infection	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Nervous system infection	4 (0.0%)	4 (0.0%)	2 (0.0%)	0 (0.0%)
Ear infection	2 (0.0%)	2 (0.0%)	0 (0.0%)	0 (0.0%)
Total no. of patients	22,026	21,906	1540	1520
Total no. of prescriptions	28,687	28,539	1739	1718

Table 8 Selected infection diagnoses among prescriptions for trimethoprim + sulfamethoxazole during estimated pregnant time period in gynaecologist and GP practices in IMRD-Germany

	Gynaecologist practices		GP practices	
	12-60 y	15-49 y	12-60 y	15-49 y
Trimethoprim + sulfamethoxazole				
Prescriptions with ≥ 1 diagnosis	1671 (69.5%)	1653 (69.5%)	1058 (72.3%)	1042 (72.9%)
Respiratory tract infection	4 (0.2%)	4 (0.2%)	134 (9.2%)	133 (9.3%)
Genitourinary infection	1669 (69.4%)	1651 (69.4%)	962 (65.7%)	946 (66.2%)
Skin infection	1 (0.0%)	1 (0.0%)	3 (0.2%)	3 (0.2%)
Musculoskeletal infection	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Nervous system infection	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Ear infection	0 (0.0%)	0 (0.0%)	6 (0.4%)	6 (0.4%)
Total no. of patients	2123	2101	1303	1277
Total no. of prescriptions	2406	2379	1464	1429

Table 9 Number of women estimated to be pregnant during time period in in IMRD-France

	No. of women with a consultation during the year		No. of women with a pregnancy event during the year		Maximum no. of women estimated to be pregnant during the year	
	12-60 y	15-49 y	12-60 y	15-49 y	12-60 y	15-49 y
2010	173,697	128,120	4677	4647	8673	8599
2011	189,920	139,522	4784	4752	9048	8967
2012	221,783	162,544	5575	5518	10,302	10,184
2013	262,237	191,454	6755	6693	12,390	12,235
2014	316,335	231,936	8422	8308	15,217	14,995
2015	349,378	255,259	9267	9160	16,939	16,705
2016	365,988	267,509	9090	9004	17,134	16,927
2017	378,235	275,475	9119	9042	16,952	16,782
2018	385,864	280,226	8981	8897	15,287	15,134
2019 (until 30 June)	273,097	193,385	4939	4901	7615	7534

Table 10 Number of women 12-60 years with a prescription and number of prescriptions of selected antibiotics during estimated pregnant time period in IMRD-France

	No. of women 12-60 years with antibiotic prescription (no. of prescriptions) during estimated pregnant time			
	Amoxicillin	Amoxicillin + clavulanic acid	Fosfomycin	Trimethoprim + sulfamethoxazole
2010	835 (961)	311 (361)	145 (154)	25 (25)
2011	804 (903)	335 (368)	143 (153)	22 (22)
2012	951 (1101)	396 (438)	152 (160)	33 (35)
2013	1149 (1336)	429 (470)	196 (218)	18 (18)
2014	1430 (1665)	481 (545)	306 (327)	36 (37)
2015	1605 (1891)	518 (575)	365 (402)	34 (34)
2016	1721 (2051)	485 (536)	371 (430)	27 (28)
2017	1539 (1819)	409 (468)	469 (525)	25 (26)
2018	1521 (1804)	313 (343)	431 (475)	37 (37)
2019 (until 30 June)	602 (677)	119 (124)	157 (171)	8 (8)

Table 11 Number of women 15-49 years with a prescription and number of prescriptions of selected antibiotics during estimated pregnant time period in IMRD-France

	No. of women 15-49 years with antibiotic prescription (no. of prescriptions) during estimated pregnant time			
	Amoxicillin	Amoxicillin + clavulanic acid	Fosfomycin	Trimethoprim + sulfamethoxazole
2010	830 (955)	306 (356)	144 (153)	25 (25)
2011	795 (892)	332 (365)	141 (151)	22 (22)
2012	937 (1086)	389 (431)	150 (157)	33 (35)
2013	1127 (1314)	420 (460)	191 (211)	17 (17)
2014	1407 (1638)	465 (522)	297 (313)	35 (36)
2015	1584 (1864)	507 (561)	357 (393)	31 (31)
2016	1701 (2030)	472 (520)	367 (425)	27 (28)
2017	1527 (1805)	400 (459)	465 (521)	23 (24)
2018	1502 (1780)	311 (341)	426 (470)	37 (37)
2019 (until 30 June)	595 (666)	118 (123)	155 (169)	8 (8)

Figure 2 Prescribing of selected antibiotics during maximum estimated pregnancy time in women 12-60 years

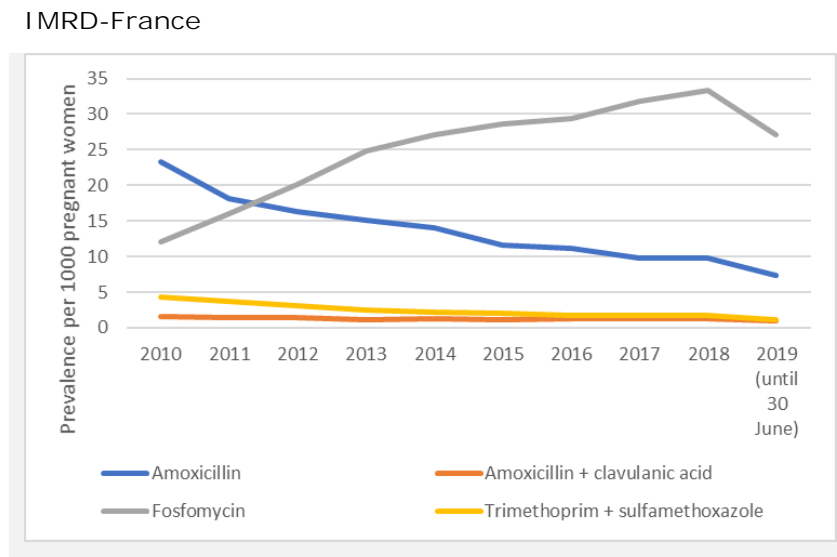


Table 12 Selected infection diagnoses among prescriptions for amoxicillin during estimated pregnant time period in gynaecologist and GP practices in IMRD-France

Amoxicillin	12-60 y	15-49 y
Prescriptions with ≥ 1 diagnosis	8047 (56.6%)	7979 (56.9%)
Respiratory tract infection	6960 (49.0%)	6897 (49.2%)
Genitourinary infection	773 (5.4%)	771 (5.5%)
Skin infection	81 (0.6%)	81 (0.6%)
Musculoskeletal infection	0 (0.0%)	0 (0.0%)
Nervous system infection	0 (0.0%)	0 (0.0%)
Ear infection	313 (2.2%)	310 (2.2%)
Total no. of patients	10,261	10,131
Total no. of prescriptions	14,208	14,030

Table 13 Selected infection diagnoses among prescriptions for amoxicillin + clavulanic acid during estimated pregnant time period in gynaecologist and GP practices in IMRD-France

Amoxicillin + clavulanic acid	12-60 y	15-49 y
Prescriptions with ≥ 1 diagnosis	1866 (44.1%)	1838 (44.4%)
Respiratory tract infection	1152 (27.2%)	1131 (27.3%)
Genitourinary infection	322 (7.6%)	320 (7.7%)
Skin infection	198 (4.7%)	195 (4.7%)
Musculoskeletal infection	0 (0.0%)	0 (0.0%)
Nervous system infection	0 (0.0%)	0 (0.0%)
Ear infection	257 (6.1%)	255 (6.2%)
Total no. of patients	3457	3389
Total no. of prescriptions	4228	4138

Table 14 Selected infection diagnoses among prescriptions for amoxicillin \pm clavulanic acid during estimated pregnant time period in gynaecologist and GP practices in IMRD-France

Amoxicillin \pm clavulanic acid	12-60 y	15-49 y
Prescriptions with ≥ 1 diagnosis	9913 (53.8%)	9817 (54.0%)
Respiratory tract infection	8112 (44.0%)	8028 (44.2%)
Genitourinary infection	1095 (5.9%)	1091 (6.0%)
Skin infection	279 (1.5%)	276 (1.5%)
Musculoskeletal infection	0 (0.0%)	0 (0.0%)
Nervous system infection	0 (0.0%)	0 (0.0%)
Ear infection	570 (3.1%)	565 (3.1%)
Total no. of patients	12,500	12,318
Total no. of prescriptions	18,436	18,168

Table 15 Selected infection diagnoses among prescriptions for fosfomycin during estimated pregnant time period in gynaecologist and GP practices in IMRD-France

Fosfomycin	12-60 y	15-49 y
Prescriptions with ≥ 1 diagnosis	1941 (64.4%)	1919 (64.8%)
Respiratory tract infection	72 (2.4%)	71 (2.4%)
Genitourinary infection	1898 (63.0%)	1877 (63.3%)
Skin infection	5 (0.2%)	5 (0.2%)
Musculoskeletal infection	0 (0.0%)	0 (0.0%)
Nervous system infection	0 (0.0%)	0 (0.0%)
Ear infection	0 (0.0%)	0 (0.0%)
Total no. of patients	2529	2492
Total no. of prescriptions	3015	2963

Table 16 Selected infection diagnoses among prescriptions for trimethoprim + sulfamethoxazole during estimated pregnant time period in gynaecologist and GP practices in IMRD-France

Trimethoprim + sulfamethoxazole	12-60 y	15-49 y
Prescriptions with ≥ 1 diagnosis	168 (62.2%)	166 (63.1%)
Respiratory tract infection	13 (4.8%)	13 (4.9%)
Genitourinary infection	154 (57.0%)	152 (57.8%)
Skin infection	4 (1.5%)	4 (1.5%)
Musculoskeletal infection	0 (0.0%)	0 (0.0%)
Nervous system infection	0 (0.0%)	0 (0.0%)
Ear infection	1 (0.4%)	1 (0.4%)
Total no. of patients	259	253
Total no. of prescriptions	270	263

Annex 1

Identification of pregnant female patients in the IMS Disease Analyzer databases in France and Germany

In the IMS Disease Analyzer (DA) databases it is not possible to identify mother-child pairs. Use during pregnancy instead needs to be identified on the basis of a diagnosis code suggestive of pregnancy, and then linking this diagnosis in time to a prescription of a drug of interest.

The following ICD 10 diagnoses codes are considered to represent ongoing or completed pregnancy:

- O00-O94 (Pregnancy, childbirth and the puerperium)
- Z32.1 (Pregnancy, confirmed)
- Z33 (Pregnancy state, incidental)
- Z34 (Supervision of normal pregnancy)
- Z35 (Supervision of high-risk pregnancy)
- Z36 (Antenatal screening)
- Z37 (Outcome of delivery)
- Z38 (Liveborn infants according to place of birth)
- Z39 (Postpartum care and examination)
- Z64.0 (Problems related to unwanted pregnancy)
- Z64.1 (Problems related to multiparity)

The codes have been selected in order to identify women at all stages of pregnancy and after giving birth among women 12 to 60 years of age. The start and end of pregnancy is not recorded in the IMS DA databases. Therefore, the number of days that a woman could have been pregnant and the number of days that a woman could still be pregnant at the time of a recorded pregnancy-related diagnosis has been estimated for each pregnancy and post-partum diagnosis code please see Appendix 1. The time limits adopted for the likely occurrence of specific codes within the pregnancy are based on clinical opinion and have not been further validated. Use of the selected medicines during this time period is considered to have taken place during pregnancy. Precise timing of exposure during pregnancy (e.g. trimester of exposure) will not be ascertained due to limitations of the algorithm and only the exposure as such without timing will be reported.

Limitations of the algorithm:

- Possible misclassification of non-pregnant time as pregnant (this would happen both in the numerator and in the denominator).
- Possibility that normal pregnancies may not be recorded which can result in underestimation of pregnancy.
- Possibility that recorded pregnancies are not representative of all pregnancies
- Possibility that non-pregnant patients are erroneously recorded as pregnant or that the time of recording of a pregnancy does not correspond to the time of occurrence of the pregnancy
- Possibility that multiple healthcare providers may be sought by the same person, e.g. the mother may visit the gynaecologist for pregnancy care and a GP for other care not related to

the pregnancy, and the GP may fail to record the pregnancy or the gynaecologist may fail to record the non-pregnancy related care, resulting in incomplete information about the healthcare of the patient (due to the fact that a person is not recognised as the same person across healthcare practices).

Appendix 1: Pregnancy codes and number of days before and after the code that it was considered possible that a woman could have been pregnant

ICD10_4_COD	ICD10_4_TEXT	Max_days_preg_befor	Max_days_preg_aft
E		e	er
O000	ABDOMINAL PREGNANCY	139	0
O001	TUBAL PREGNANCY	139	0
O002	OVARIAN PREGNANCY	139	0
O008	OTHER ECTOPIC PREGNANCY	139	0
O009	ECTOPIC PREGNANCY UNSPECIFIED	139	0
O010	CLASSICAL HYDATID MOLE	139	0
O011	INCCOMPLETE/PARTIAL HYDAT MOLE	139	0
O019	HYDATIDIFORM MOLE UNSPECIFIED	139	0
O020	BLIGHT OVUM/NONHYDAT MOLE	139	0
O021	MISSED ABORTION	139	0
O028	OTH SPECIFIED ABNORMAL PRODUCT OF CONCEPTION	139	0
O029	ABNORMAL PRODUCT OF CONCEPTION UNSPECIFIED	139	0
O030	SPONTANEOUS ABORTION INCOMPLETE+GENITAL TRACT/PELVIC INF	139	0
O031	SPONTANEOUS ABORTION INCOMPLETE+DELAYED/EXCESSIVE HAEMORH	139	0
O032	SPONTANEOUS ABORTION INCOMPLETE+EMBOLISM	139	0
O033	SPONTANEOUS ABORTION INCOMPLETE+OTHER/UNSPECIFIED COMPL	139	0
O034	SPONTANEOUS ABORTION INCOMPLETE WITHOUT COMPL	139	0
O035	SPONTANEOUS ABORTION COMPLETE/UNSPEC+GENITAL TRACT/PELVIC INF	139	0
O036	SPONTANEOUS ABORTION COMPLETE/UNSPEC+DELAYED/EXCESSIVE HAEMORH	139	0
O037	SPONTANEOUS ABORTION COMPLETE/UNSPEC+EMBOLISM	139	0
O038	SPONTANEOUS ABORTION COMPLETE/UNSPEC+OTHER/UNSPECIFIED COMPL	139	0
O039	SPONTANEOUS ABORTION COMPLETE/UNSPEC WITHOUT COMPL	139	0
O040	MEDICAL ABORTION INCOMPLETE+GENITAL TRACT/PELVIC INF	139	0
O041	MEDICAL ABORTION INCOMPLETE+ DELAYED/EXCESSIVE HAEMORH	139	0

ICD10_4_COD	ICD10_4_TEXT	Max_days_preg_befor	Max_days_preg_aft
E		e	er
0042	MEDICAL ABORTION INCOMPLETE+EMBOLISM	139	0
0043	MEDICAL ABORTION INCOMPLETE+OTHER/UNSPECIFIED COMPL	139	0
0044	MEDICAL ABORTION INCOMPLETE WITHOUT COMPL	139	0
0045	MEDICAL ABORTION COMPLETE /UNSPEC+GENITAL TRACT/PELVIC INF	139	0
0046	MEDICAL ABORTION COMPLETE /UNSPEC+DELAYED/EXCESSIVE HAEMORH	139	0
0048	MEDICAL ABORTION COMPLETE /UNSPEC+OTHER/UNSPECIFIED COMPL	139	0
0049	MEDICAL ABORTION COMPLETE /UNSPEC WITHOUT COMPL	139	0
0050	OTHER ABORTION INCOMPLETE+GENITAL TRACT/PELVIC INF	139	0
0051	OTHER ABORTION INCOMPLETE+DELAYED/EXCESSIVE HAEMORH	139	0
0053	OTHER ABORTION INCOMPLETE+OTHER/UNSPECIFIED COMPL	139	0
0054	OTHER ABORTION INCOMPLETE WITHOUT COMPL	139	0
0055	OTHER ABORTION COMPLETE/UNSPEC+GENITAL TRACT/PELVIC INF	139	0
0056	OTHER ABORTION COMPLETE/UNSPEC+DELAYED/EXCESSIVE HAEMORH	139	0
0058	OTHER ABORTION COMPLETE/UNSPEC+OTHER/UNSPECIFIED COMPL	139	0
0059	OTHER ABORTION COMPLETE/UNSPEC WITHOUT COMPL	139	0
0060	UNSPECIFIED ABORTION INCOMPLETE+GENITAL TRACT/PELVIC INF	139	0
0061	UNSPECIFIED ABORTION INCOMPLETE+DELAYED/EXCESSIVE HAEMORH	139	0
0062	UNSPECIFIED ABORTION INCOMPLETE+EMBOLISM	139	0
0063	UNSPECIFIED ABORTION INCOMPLETE+OTHER/UNSPECIFIED COMPL	139	0
0064	UNSPECIFIED ABORTION INCOMPLETE WITHOUT COMPL	139	0
0065	UNSPECIFIED ABORTION COMPLETE/UNSPEC+GENITAL TRACT/PELVIC INF	139	0
0066	UNSPECIFIED ABORTION COMPLETE/UNSPEC+DELAYED/EXCESSIVE HAEMORH	139	0
0067	UNSPECIFIED ABORTION COMPLETE/UNSPEC+EMBOLISM	139	0
0068	UNSPECIFIED ABORTION COMPLETE/UNSPEC+OTHER/UNSPECIFIED COMPL	139	0
0069	UNSPECIFIED ABORTION COMPLETE/UNSPEC WITHOUT COMPL	139	0
0070	FAILED MEDICAL ABORTION+GENITAL TRACT/PELVIC INF	139	0

ICD10_4_COD	ICD10_4_TEXT	Max_days_preg_befor	Max_days_preg_aft
E		e	er
0071	FAILED MEDICAL ABORTION+DELAYED/EXCESSIVE HAEMORH	139	0
0072	FAILED MEDICAL ABORTION + EMBOLISM	139	0
0073	FAILED MEDICAL ABORTION+OTHER/UNSPECIFIED COMPL	139	0
0074	FAILED MEDICAL ABORTION WITHOUT COMPL	139	0
0075	OTHER UNSPECIFIED FAILED ABORTION+GENITAL TRACT/PELVIC INF	139	0
0076	OTHER UNSPECIFIED FAILED ABORTION+DELAYED/EXCESSIVE HAEMORH	139	0
0078	OTHER UNSPECIFIED FAILED ABORTION+OTHER/UNSPECIFIED COMPL	139	0
0079	OTHER UNSPECIFIED FAILED ABORTION WITHOUT COMPL	139	0
0080	GENITAL TRACT/PELVIC INF AFTER ABORTION AND ECTOPIC AND MOLAR PREG	139	0
0081	DELAYED/EXCESSIVE HAEMORH AFTER ABORTION AND ECTOPIC AND MOLAR PREG	139	0
0082	EMBOLISM AFTER ABORTION AND ECTOPIC AND MOLAR PREG	139	0
0083	SHOCK AFTER ABORTION AND ECTOPIC AND MOLAR PREG	139	0
0084	RENAL FAILURE AFTER ABORTION AND ECTOPIC AND MOLAR PREG	139	0
0085	METABOLIC DISORDERS AFTER ABORTION AND ECTOPIC AND MOLAR PREG	139	0
0086	DAMAGE TO PELVIC ORGANS/TISSUES AFTER ABORTION AND ECTOPIC AND MOLAR PREG	139	0
0087	OTHER VENOUS COMPLICATIONS AFTER ABORTION AND ECTOPIC AND MOLAR PREG	139	0
0088	OTHER COMPLICATIONS AFTER ABORTION AND ECTOPIC AND MOLAR PREG	139	0
0089	COMP AFTER ABORTION AND ECTOPIC AND MOLAR PREG UNSPEC	139	0
0100	PRE EXISTING ESSENTIAL HYPERTENSION COMPLICATING PREGNANCY/CHILDBIRTH/PUERPERIUM	280	280
0101	PRE EXISTING HYPERTENSIVE HEART DISEASE COMPLICATING PREGNANCY/CHILDBIRTH/PUERPERIUM	280	280
0102	PRE EXISTING HYPERTENSIVE RENAL DISEASE COMPLICATING PREGNANCY/CHILDBIRTH/PUERPERIUM	280	280
0103	PRE EXISTING HYPERTENSIVE HEART AND RENAL DISEASE COMPLICATING PREGNANCY/CHILDBIRTH/PUERPERIUM	280	280
0104	PRE EXISTING SECONDARY HYPERTENSION COMPLICATING PREGNANCY/CHILDBIRTH/PUERPERIUM	280	280
0109	UNSPECIFIED PRE EXISTING HYPERTENSION COMPLICATING PREGNANCY/CHILDBIRTH/PUERPERIUM	280	280
0110	PREECLAMPSIA SUPERIMPOSED ON CHRONIC HYPERTENSION	280	140

ICD10_4_COD	ICD10_4_TEXT	Max_days_preg_befor	Max_days_preg_after
O120	GESTATIONAL OEDEMA	280	140
O121	GESTATIONAL PROTEINURIA	280	140
O122	GEST OEDEMA WITH PROTEINURIA	280	140
O130	GESTATIONAL HYPERTENSION WITHOUT SIGNIFICANT PROTEINURIA	280	140
O140	MODERATE PRE ECLAMPSIA	280	140
O141	SEVERE PRE ECLAMPSIA	280	140
O142	HELLP SYNDROME	280	140
O149	PRE ECLAMPSIA UNSPECIFIED	280	140
O150	ECLAMPSIA IN PREGNANCY	280	140
O151	ECLAMPSIA IN LABOUR	280	0
O152	ECLAMPSIA IN THE PUERPERIUM	280	0
O159	ECLAMPSIA UNSPECIFIED AS TO TIME	280	140
O160	UNSPECIFIED MATERNAL HYPERTENSION	280	280
O200	THREATENED ABORTION	139	280
O208	OTHER HAEMORRHAGE IN EARLY PREG	139	280
O209	HAEMORRHAGE EARLY PREGNANCY UNSPECIFIED	139	280
O210	MILD HYPEREMESIS GRAV	139	280
O211	HYPEREMESIS GRAVIDARUM+METABOLIC DISTURBANCE	139	280
O212	LATE VOMITING OF PREGNANCY	280	140
O218	OTHER VOMITING COMPLICATING PREG	280	280
O219	VOMITING OF PREG UNSPECIFIED	280	280
O220	VARICOSE VEINS LOWER EXTREMITY IN PREG	280	280
O221	GENITAL VARICES IN PREG	280	280
O222	SUPERFICIAL THROMBOPHLEBITIS PREG	280	280
O223	DEEP PHLEBOTHROMBOSIS PREG	280	280
O224	HAEMORRHOIDS IN PREG	280	280
O225	CEREBRAL VENOUS THROMBOSIS IN PREG	280	280
O228	OTHER VENOUS COMPLICATIONS IN PREG	280	280
O229	VENOUS COMPLICATION IN PREG UNSPECIFIED	280	280
O230	INFECT OF KIDNEY IN PREG	280	280
O231	INFECT BLADDER IN PREG	280	280
O232	INFECT URETHRA IN PREG	280	280
O233	INFECT OF OTHER PARTS OF URINARY TRACT IN PREG	280	280
O234	UNSPECIFIED UTI IN PREG	280	280
O235	GENITAL INFECT IN PREG	280	280
O239	OTHER/UNSPECIFIED GENITOURINARY TRACT INFECT IN PREG	280	280
O240	PRE EXISTING DM IN PREG INSULIN DEPENDENT	280	280
O241	PRE EXISTING DM IN PREG NON INSULIN DEPENDENT	280	280

ICD10_4_COD	ICD10_4_TEXT	Max_days_preg_befor	Max_days_preg_aft
E		e	er
O242	PRE EXISTING MALNUTRITION RELATED DM IN PREG	280	280
O243	PRE EXISTING DM IN PREG UNSPEC	280	280
O244	DIAB MELL ARISING IN PREG	280	140
O249	DIAB MELL IN PREG UNSPECIFIED	280	280
O250	MALNUTRITION IN PREG	280	280
O260	EXCESS WEIGHT GAIN IN PREG	280	280
O261	LOW WEIGHT GAIN IN PREG	280	280
O262	PREG CARE HABITUAL ABORTER	280	280
O263	RETAINED INTRAUTERINE CONTRACEPTIVE DEVICE IN PREG	280	280
O264	HERPES GESTATIONIS	280	280
O265	MATERNAL HYPOTENSION SYNDROME	280	280
O266	LIV DISORDERS IN PREGNANCY CHILDBIRTH PUERPERIUM	280	280
O267	SUBLUXATION OF SYMPHYSIS PUBIS IN PREGNANCY CHILDBIRTH PUERPERIUM	280	280
O268	OTHER SPECIFIED PREGNANCY RELATED CONDITIONS	280	280
O269	PREGNANCY RELATED CONDITION UNSPECIFIED	280	280
O280	ABNORMAL HAEMATOLOGICAL FINDING ANTENATAL SCREENING OF MOTHER	280	280
O281	ABNORMAL BIOCHEMICAL FINDING ANTENATAL SCREENING OF MOTHER	280	280
O282	ABNORMAL CYTOLOGICAL FINDING ANTENATAL SCREENING OF MOTHER	280	280
O283	ABNORMAL ULTRASONIC FINDING ANTENATAL SCREENING OF MOTHER	280	280
O284	ABNORMAL RADIOLOGICAL FINDING ANTENATAL SCREENING OF MOTHER	280	280
O285	ABNORMAL CHROMOSOMAL AND GENETIC FINDING ANTENATAL SCREENING OF MOTHER	280	280
O288	OTHER ABNORMAL FINDING ANTENATAL SCREENING OF MOTHER	280	280
O289	ABNORMAL FINDING ANTENATAL SCREENING OF MOTHER UNSPECIFIED	280	280
O290	PULMONARY COMPLICATIONS IF ANAESTHESIA IN PREG	280	280
O292	CNS COMPLICATIONS OF ANAESTHESIA IN PREG	280	280
O293	TOXIC REACTION TO LOCAL ANAESTHESIA IN PREG	280	280
O294	SPINAL AND EPIDURAL ANAESTHESIA-INDUCED HEADACHE IN PREG	280	280
O295	OTHER COMPLICATIONS OF SPINAL AND EPIDURAL ANAESTHESIA IN PREG	280	280
O296	FAILED OR DIFFICULT INTUBATION IN PREG	280	280
O298	OTHER COMPLICATIONS OF ANAESTHESIA IN PREG	280	280
O299	UNSPECIFIED COMPLICATIONS OF ANAESTHESIA IN PREG	280	280
O300	TWIN PREGNANCY	280	280
O301	TRIPLET PREGNANCY	280	280
O302	QUADRUPLET PREGNANCY	280	280
O308	OTHER MULTIPLE GESTATION	280	280

ICD10_4_COD	ICD10_4_TEXT	Max_days_preg_befor	Max_days_preg_aft
E		e	er
O309	MULTIPLE GESTATION UNSPECIFIED	280	280
O310	PAPYRACEOUS FETUS	280	280
O311	CONTINUING PREG AFTER ABORTION OF ONE FETUS OR MORE	280	280
O312	CONTINUING PREG AFTER INTRAUTERINE DEATH OF ONE FETUS OR MORE	280	280
O318	OTHER COMPLICATIONS SPECIFIC TO MULTIPLE GESTATION	280	280
O320	MATERNAL CARE FOR UNSTABLE LIE	280	30
O321	MATERNAL CARE FOR BREECH PRESENTATION	280	30
O322	MATERNAL CARE FOR TRANSVERSE/OBLIQUE LIE	280	30
O323	MATERNAL CARE FOR FACE BROW/CHIN PRESENTATION	280	30
O324	MATERNAL CARE FOR HIGH HEAD AT TERM	280	30
O325	MATERNAL CARE FOR MULTIPLE GESTATION WITH MALPRESENTATION OF ONE FETUS OR MORE	280	30
O326	MATERNAL CARE FOR COMPOUND PRESENTATION	280	30
O328	MATERNAL CARE FOR OTHER MALPRESENTATION OF FETUS	280	30
O329	MATERNAL CARE FOR MALPRESENTATION OF FETUS UNSPECIFIED	280	30
O330	MATERNAL CARE FOR DISPROPORTION DUE TO DEFORMITY OF PELVIC BONES	280	90
O331	MATERNAL CARE FOR DISPROPORTION DUE TO GENERALLY CONTRACTED PELVIS	280	90
O332	MATERNAL CARE FOR DISPROPORTION DUE TO INLET CONTRACTION OF PELVIS	280	90
O333	MATERNAL CARE FOR DISPROPORTION DUE TO OUTLET CONTRACTION OF PELVIS	280	90
O334	MATERNAL CARE FOR DISPROPORTION OF MIXED MATERNAL+FETAL ORIGIN	280	90
O335	MATERNAL CARE FOR DISPROPORTION DUE TO UNUSUALLY LARGE FETUS	280	90
O336	MATERNAL CARE FOR DISPROPORTION DUE TO HYDROCEPHALIC FETUS	280	90
O337	MATERNAL CARE FOR DISPROPORTION DUE TO OTHER FETAL DEFORMITIES	280	90
O338	MATERNAL CARE FOR DISPROPORTION OF OTHER ORIGIN	280	90
O339	MATERNAL CARE FOR DISPROPORTION UNSPECIFIED	280	90
O340	MATERNAL CARE FOR CONGENITAL MALFORMATION OF UTERUS	280	280
O341	MATERNAL CARE FOR TUMOUR CORPUS UTERI	280	280
O342	MATERNAL CARE FOR UTERINE SCAR FROM PREVIOUS SURGERY	280	280
O343	MATERNAL CARE FOR CERVICAL INCOMPETENCE	280	280
O344	MATERNAL CARE FOR OTHER ABNORMALITIES OF CERVIX	280	280
O345	MATERNAL CARE FOR OTHER ABNORMALITIES OF GRAVID UTERUS	280	280

ICD10_4_COD	ICD10_4_TEXT	Max_days_preg_befor	Max_days_preg_after
O346	MATERNAL CARE FOR ABNORMALITY OF VAGINA	280	280
O347	MATERNAL CARE FOR ABNORMALITY OF VULVA/PERINEUM	280	280
O348	MATERNAL CARE FOR OTHER ABNORMALITY OF PELVIC ORGANS	280	280
O349	MATERNAL CARE FOR ABNORMALITY OF PELVIC ORGANS UNSPECIFIED	280	280
O350	MATERNAL CARE FOR SUSPECTED CNS MALFORMATION IN FETUS	280	280
O351	MATERNAL CARE FOR SUSPECTED CHROMOSOMAL ABNORMALITY IN FETUS	280	280
O352	MATERNAL CARE FOR SUSPECTED HEREDITARY DISEASE IN FETUS	280	280
O353	MATERNAL CARE FOR SUSPECTED DAMAGE TO FETUS OF VIRAL DISEASE IN MOTHER	280	280
O354	MATERNAL CARE FOR SUSPECTED DAMAGE TO FETUS FROM ALCOHOL	280	280
O355	MATERNAL CARE FOR SUSPECTED DAMAGE TO FETUS FROM DRUGS	280	280
O356	MATERNAL CARE FOR SUSPECTED DAMAGE TO FETUS FROM RADIATION	280	280
O357	MATERNAL CARE FOR SUSPECTED DAMAGE TO FETUS BY OTHER MEDICAL PROCEDURES	280	280
O358	MATERNAL CARE FOR OTHER SUSPECTED FETAL ABNORMALITY/DAMAGE	280	280
O359	MATERNAL CARE FOR SUSPECTED FET ABN/DAMAGE UNS	280	280
O360	MATERNAL CARE FOR RHESUS ISOIMMUNISATION	280	280
O361	MATERNAL CARE FOR OTHER ISOIMMUNISATION	280	280
O362	MATERNAL CARE FOR HYDROPS FETALIS	280	280
O363	MATERNAL CARE FOR SIGNS OF FETAL HYPOXIA	280	280
O364	MATERNAL CARE FOR INTRAUTERINE DEATH	280	280
O365	MATERNAL CARE FOR POOR FETAL GROWTH	280	280
O366	MATERNAL CARE FOR EXCESSIVE FETAL GROWTH	280	280
O367	MATERNAL CARE FOR VIABLE FETUS IN ABDOMINAL PREGNANCY	280	280
O368	MATERNAL CARE FOR OTHER/SPECIFIED FETAL PROBLEMS	280	280
O369	MATERNAL CARE FOR FETAL PROBLEM UNSPECIFIED	280	280
O400	POLYHYDRAMNIOS	280	280
O410	OLIGOHYDRAMNIOS	280	280
O411	INFECTION OF AMNIOTIC SAC/MEMBRANES	280	280
O418	OTHER SPECIFIED DISORDER OF AMNIOTIC FLUID/MEMBRANES	280	280
O419	DISORDER OF AMNIOTIC FLUID/MEMBRANES UNSPECIFIED	280	280
O420	PREMATURE RUPTURE OF MEMBRANES ONSET OF LABOUR WITHIN 24 HR	280	1
O421	PREMATURE RUPTURE OF MEMBRANES ONSET OF LABOUR AFTER 24 HR	280	7

ICD10_4_COD	ICD10_4_TEXT	Max_days_preg_befor	Max_days_preg_aft
E		e	er
O422	PREMATURE RUPTURE OF MEMBRANES LABOUR DELAYED BY THERAPY	280	280
O429	PREMATURE RUPTURE OF MEMBRANES UNSPECIFIED	280	280
O430	PLACENTAL TRANSFUSION SYNDROMES	280	280
O431	MALFORMATION OF PLACENTA	280	280
O432	MORBIDLY ADHERENT PLACENTA	280	280
O438	OTHER PLACENTAL DISORDERS	280	280
O439	PLACENTAL DISORDER UNSPECIFIED	280	280
O440	PLACENTA PRAEVIA SPECIFIED AS WITHOUT HAEMORRHAGE	280	280
O441	PLACENTA PRAEVIA WITH HAEMORRHAGE	280	280
O450	PREMATURE SEPARATION OF PLACENTA WITH COAGULATION DEFECT	280	280
O458	OTHER PREMATURE SEPARATION OF PLACENTA	280	280
O459	PREMATURE SEPARATION OF PLACENTA UNSPECIFIED	280	280
O460	ANTEPARTUM HAEMORRHAGE WITH COAGULATION DEFECT	280	280
O468	OTHER ANTEPARTUM HAEMORRHAGE	280	280
O469	ANTEPARTUM HAEMORRHAGE UNSPECIFIED	280	280
O470	FALSE LABOUR BEF 37 WKS	258	280
O471	FALSE LAB AT/AFTER 37WKS	280	21
O479	FALSE LABOUR UNSP	280	280
O480	PROLONGED PREGNANCY	287	7
O600	PRETERM LABOUR NO DELIVERY	258	280
O601	PRETERM LABOUR WITH PRETERM DELIVERY	258	0
O602	PRETERM LABOUR WITH TERM DELIVERY	280	0
O603	PRETERM DELIVERY NO SPONTANEOUS LABOUR	258	0
O610	FAILED MEDICAL INDUCTION OF LABOUR	280	7
O611	FAILED INSTRUMENTAL INDUCTION OF LABOUR	280	7
O618	OTHER FAILED INDUCTION OF LABOUR	280	7
O619	FAILED INDUCTION OF LABOUR UNSPECIFIED	280	7
O620	PRIMARY INADEQUATE CONTRACTIONS	280	0
O621	SECONDARY UTERINE INERTIA	280	0
O622	OTHER UTERINE INERTIA	280	0
O623	PRECIPITATE LABOUR	280	0
O624	HYPERTONIC INCOORDINATE/PROLONGED UTERINE CONTRACTIONS	280	0
O628	OTHER ABNORMALITIES OF FORCES OF LABOUR	280	0
O629	ABNORMALITIES OF FORCES OF LABOUR UNSPECIFIED	280	0
O630	PROLONGED 1ST STAGE (LABOUR)	280	0
O631	PROLONGED 2ND STAGE (LABOUR)	280	0

ICD10_4_COD	ICD10_4_TEXT	Max_days_preg_befor	Max_days_preg_aft
E		e	er
O632	DELAYED DELIVERY OF SECOND TWIN TRIPLET ETC	280	0
O639	LONG LABOUR UNSPECIFIED	280	0
O640	OBSTRUCTED LABOUR DUE TO INCOMPLETE ROTATION OF FETAL HEAD	280	0
O641	OBSTRUCTED LABOUR DUE TO BREECH PRESENTATION	280	0
O642	OBSTRUCTED LABOUR DUE TO FACE PRESENTATION	280	0
O643	OBSTRUCTED LABOUR DUE TO BROW PRESENTATION	280	0
O644	OBSTRUCTED LABOUR DUE TO SHOULDER PRESENTATION	280	0
O645	OBSTRUCTED LABOUR DUE TO COMPOUND PRESENTATION	280	0
O648	OBSTRUCTED LABOUR DUE TO OTHER MALPOSITION/MALPRESENTATION	280	0
O649	OBSTRUCTED LABOUR DUE TO MALPOSITION/MALPRESENTATION UNSPECIFIED	280	0
O650	OBSTRUCTED LABOUR DUE TO DEFORMED PELVIS	280	0
O651	OBSTRUCTED LABOUR DUE TO GENERALLY CONTRACTED PELVIS	280	0
O652	OBSTRUCTED LABOUR DUE TO PELVIC INLET CONTRACTION	280	0
O653	OBSTRUCTED LABOUR DUE TO PELVIC OUTLET AND MID CAVITY CONTRACTION	280	0
O654	OBSTRUCTED LABOUR DUE TO FETOPELVIC DISPROPORTION	280	0
O655	OBSTRUCTED LABOUR DUE TO ABNORMALITY OF MATERNAL PELVIC ORGANS	280	0
O658	OBSTRUCTED LABOUR DUE TO OTHER MATERNAL PELVIC ABNORMALITIES	280	0
O659	OBSTRUCTED LABOUR DUE TO MATERNAL PELVIC ABNORMALITY UNSPECIFIED	280	0
O660	OBSTRUCTED LABOUR DUE TO SHOULDER DYSTOCIA	280	0
O661	OBSTRUCTED LABOUR DUE TO LOCKED TWINS	280	0
O662	OBSTRUCTED LABOUR DUE TO UNUSUALLY LARGE FETUS	280	0
O663	OBSTRUCTED LABOUR DUE TO OTHER ABNORMALITIES OF FETUS	280	0
O664	FAILED TRIAL OF LABOUR UNSPECIFIED	280	0
O665	FAILED APPLICATION OF VACUUM EXTRACTOR AND FORCEPS UNSPECIFIED	280	0
O668	OTHER SPECIFIED OBSTRUCTED LABOUR	280	0
O669	OBSTRUCTED LABOUR UNSPECIFIED	280	0
O670	INTRAPARTUM HAEMORRHAGE WITH COAGULATION DEFECT	280	0
O678	OTHER INTRAPARTUM HAEMORRHAGE	280	0
O679	INTRAPARTUM HAEMORRHAGE UNSPECIFIED	280	0
O680	LABOUR/DELIVERY+FETAL HEART RATE ANOMALY	280	0
O681	LABOUR/DELIVERY+MECONIUM IN AMNIOTIC FLUID	280	0

ICD10_4_COD	ICD10_4_TEXT	Max_days_preg_befor	Max_days_preg_aft
E		e	er
O682	LABOUR/DELIVERY+FETAL HEART RATE ANOMALY+MECONIUM IN AMNIOTIC FLUID	280	0
O683	LABOUR/DELIVERY+BIOCHEMICAL EVIDENCE OF FETAL STRESS	280	0
O688	LABOUR/DELIVERY+OTHER EVIDENCE OF FETAL STRESS	280	0
O689	LABOUR/DELIVERY+FETAL STRESS UNSPECIFIED	280	0
O690	LABOUR/DELIVERY + PROLAPSE OF CORD	280	0
O691	LABOUR/DELIVERY+CORD AROUND NECK+COMPRESSION	280	0
O692	LABOUR/DELIVERY+OTHER CORD ENTANGLEMENT+COMPRESSION	280	0
O693	LABOUR/DELIVERY COMPLICATED BY SHORT CORD	280	0
O694	LABOUR/DELIVERY COMPLICATED BY VASA PRAEVIA	280	0
O695	LABOUR/DELIVERY + VASCULAR LESION OF CORD	280	0
O698	LABOUR/DELIVERY OTH CORD COMPLICATIONS	280	0
O699	LABOUR/DELIVERY CORD COMPLICATION UNSPECIFIED	280	0
O700	FIRST DEGREE PERINEAL LACERATION DURING DELIVERY	280	0
O701	SECOND DEGREE PERINEAL LACERATION DURING DELIVERY	280	0
O702	THIRD DEGREE PERINEAL LACERATION DURING DELIVERY	280	0
O703	FOURTH DEGREE PERINEAL LACERATION DURING DELIVERY	280	0
O709	PERINEAL LACERATION DURING DELIVERY UNSPECIFIED	280	0
O710	RUPTURE OF UTERUS BEFORE ONSET OF LABOUR	280	0
O711	RUPTURE OF UTERUS DURING LABOUR	280	0
O712	POSTPARTUM INVERSION OF UTERUS	280	0
O713	OBSTETRIC LACERATION OF CERVIX	280	0
O714	OBSTETRIC HIGH VAGINAL LACERATION	280	0
O715	OTHER OBSTETRIC INJURY TO PELVIC ORGANS	280	0
O716	OBSTETRIC DAMAGE TO PELVIC JOINTS/LIGAMENTS	280	0
O717	OBSTETRIC HAEMATOMA OF PELVIS	280	0
O718	OTHER SPECIFIED OBSTETRIC TRAUMA	280	0
O719	OBSTETRIC TRAUMA UNSPECIFIED	280	0
O720	THIRD STAGE HAEMORRHAGE	280	0
O721	OTHER IMMEDIATE POSTPARTUM HAEMORRHAGE	280	0
O722	DELAYED/SECONDARY POSTPARTUM HAEMORRHAGE	280	0
O723	POSTPARTUM COAGULATION DEFECTS	280	0
O730	RETAINED PLACENTA WITHOUT HAEMORRHAGE	280	0
O731	RETAINED PORTIONS OF PLACENTA/MEMBRANES WITHOUT HAEMORRHAGE	280	0

ICD10_4_COD	ICD10_4_TEXT	Max_days_preg_befor	Max_days_preg_aft
E		e	er
0740	ASPIRATION PNEUMONITIS DUE TO ANAESTHESIA DURING LABOUR/DELIVERY	280	0
0741	OTHER PULMONARY COMPLICATIONS OF ANAESTHESIA DURING LABOUR/DELIVERY	280	0
0742	CARDIAC COMPLICATIONS OF ANAESTHESIA DURING LABOUR/DELIVERY	280	0
0743	CNS COMPLICATIONS TO ANAESTHESIA DURING LABOUR/DELIVERY	280	0
0744	TOXIC REACTION TO LOCAL ANAESTHESIA DURING LABOUR/DELIVERY	280	0
0745	SPINAL/EPIDURAL ANESTHESIA INDUCED HEADACHE DURING LABOUR/DELIVERY	280	0
0746	OTHER COMPLICATIONS OF SPINAL/EPIDURAL ANESTHESIA DURING LABOUR/DELIVERY	280	0
0748	OTHER COMPLICATIONS OF ANAESTHESIA DURING LABOUR/DELIVERY	280	0
0749	COMPLICATIONS OF ANAESTHESIA DURING LABOUR/DELIVERY UNS	280	0
0750	MATERNAL DISTRESS DURING LABOUR/DELIVERY	280	0
0751	SHOCK DURING OR FOLLOWING LABOUR/DELIVERY	280	0
0752	PYREXIA DURING LABOUR NOT ELSEWHERE CLASSIFIED	280	0
0753	OTHER INFECTION DURING LABOUR	280	0
0754	OTHER COMPLICATIONS OF OBSTETRIC SURGERY/PROCEDURES	280	0
0755	DELAYED DELIVERY AFTER ARTERIAL RUPTURE OF MEMBRANES	280	0
0756	DELAYED DELIVERY AFTER SPONTANEOUS/UNSPECIFIED RUPTURE OF MEMBRANES	280	0
0757	VAGINAL DELIVERY FOLLOWING PREVIOUS CAESARIAN SECTION	280	0
0758	OTHER SPECIFIED COMPLICATIONS OF LABOUR/DELIVERY	280	0
0759	COMPLICATIONS OF LABOUR/DELIVERY UNSPECIFIED	280	0
0800	SPONTANEOUS VERTEX DELIVERY	280	0
0801	SPONTANEOUS BREECH DELIVERY	280	0
0808	OTH SINGLE SPONTANEOUS DELIVERY	280	0
0809	SINGLE SPONTANEOUS DELIVERY UNSPECIFIED	280	0
0810	LOW FORCEPS DELIVERY	280	0
0811	MID CAVITY FORCEPS DELIVERY	280	0
0813	OTHER/UNSPECIFIED FORCEPS DELIVERY	280	0
0814	VACUUM EXTRACTION DELIVERY	280	0
0815	DELIVERY BY FORCEPS+VACUUM EXTRACTOR	280	0
0820	DELIVERY BY ELECTIVE CAESARIAN SECTION	280	0
0821	DELIVERY BY EMERGENCY CAESARIAN SECTION	280	0

ICD10_4_COD	ICD10_4_TEXT	Max_days_preg_befor	Max_days_preg_aft
E		e	er
O822	DELIVERY BY CAESARIAN HYSTERECTOMY	280	0
O828	OTHER SINGLE DELIVERY BY CAESARIAN SECTION	280	0
O829	DELIVERY BY CAESARIAN SECTION UNSPECIFIED	280	0
O830	BREECH EXTRACTION	280	0
O831	OTHER ASSISTED BREECH DELIVERY	280	0
O832	OTHER MANIPULATION ASSISTED DELIVERY	280	0
O833	DELIVERY VIABLE FETUS IN ABDOMINAL PREGNANCY	280	0
O838	OTHER SPECIFIED ASSISTED SINGLE DELIVERY	280	0
O839	ASSISTED SINGLE DELIVERY UNSPECIFIED	280	0
O840	MULTIPLE SPONTANEOUS DELIVERY	280	0
O842	MULTIPLE CAESARIAN SECTION DELIVERY	280	0
O848	OTHER MULTIPLE DELIVERY	280	0
O849	MULTIPLE DELIVERY UNSPECIFIED	280	0
O850	PUERPERAL SEPSIS	322	0
O860	INFECTION OF OBSTETRIC SURGICAL WOUND	322	0
O861	OTHER GENITAL INFECTION AFTER DELIVERY	322	0
O862	UTI AFTER DELIVERY	322	0
O863	OTHER GENITOURINARY INFECTION AFTER DELIVERY	322	0
O864	PYREXIA OF UNKNOWN ORIGIN AFTER DELIVERY	322	0
O868	OTHER SPECIFIED PUERPERAL INFECTION	322	0
O870	SUPERFICIAL THROMBOPHLEBITIS IN PUERPERIUM	322	0
O871	DEEP PHLEBOTHROMBOSIS IN PUERPERIUM	322	0
O872	HAEMORRHOIDS IN PUERPERIUM	322	0
O873	CEREBRAL VENOUS THROMBOSIS IN PUERPERIUM	322	0
O878	OTHER VENOUS COMPLICATIONS IN PUERPERIUM	322	0
O879	VENOUS COMPLICATIONS IN PUERPERIUM UNSPECIFIED	322	0
O880	OBSTETRIC AIR EMBOLISM	322	280
O881	AMNIOTIC FLUID EMBOLISM	322	280
O882	OBSTETRIC BLOOD CLOT EMBOLISM	322	280
O883	OBSTET PYAEMIC/SEPTIC EMBOLISM	322	280
O888	OTHER OBSTETRIC EMBOLISM	322	280
O890	PULMONARY COMPLICATIONS OF ANAESTHESIA DURING THE PUERPERIUM	322	0
O891	CARDIAC COMPLICATIONS OF ANAESTHESIA DURING THE PUERPERIUM	322	0
O893	TOXIC REACTION TO LOCAL ANAESTHESIA DURING THE PUERPERIUM	322	0

ICD10_4_COD	ICD10_4_TEXT	Max_days_preg_befor	Max_days_preg_aft
E		e	er
0894	SPINAL/EPIDURAL ANESTHESIA INDUCED HEADACHE DURING THE PUERPERIUM	322	0
0895	OTHER COMPLICATIONS OF SPINAL/EPIDURAL ANESTHESIA DURING THE PUERPERIUM	322	0
0896	FAILED/DIFFICULT INTUBATION DURING THE PUERPERIUM	322	0
0898	OTHER COMPLICATIONS OF ANAESTHESIA DURING THE PUERPERIUM	322	0
0899	COMPLICATIONS OF ANAESTHESIA UNSPECIFIED	322	0
0900	DISRUPTION OF CAESARIAN SECTION WOUND	322	0
0901	DISRUPTION OF PERINEAL OBSTETRIC WOUND	322	0
0902	HAEMATOMA OF OBSTETRIC WOUND	322	0
0903	CARDIOMYOPATHY IN PUERPERIUM	322	0
0904	POSTPARTUM ACUTE RENAL FAILURE	322	0
0905	POSTPARTUM THYROIDITIS	322	0
0908	OTHER COMPLICATIONS OF THE PUERPERIUM NOT ELSEWHERE CLASSIFIED	322	0
0909	COMPLICATIONS OF THE PUERPERIUM UNSPECIFIED	322	0
0910	INFECTION OF NIPPLE ASSOCIATED WITH CHILDBIRTH	322	0
0911	ABSCESS OF BREAST ASSOCIATED WITH CHILDBIRTH	322	0
0912	NONPURULENT MASTITIS ASSOCIATED WITH CHILDBIRTH	322	0
0920	RETRACTED NIPPLE ASSOCIATED WITH CHILDBIRTH	322	0
0921	CRACKED NIPPLE ASSOCIATED WITH CHILDBIRTH	322	0
0922	OTHER/UNSPECIFIED DISORDERS OF BREAST ASSOCIATED WITH CHILDBIRTH	322	0
0923	AGALACTIA	322	0
0924	HYPOGALACTIA	322	0
0925	SUPPRESSED LACTATION	322	0
0926	GALACTORRHOEA	322	0
0927	OTHER & UNSPECIFIED DISORDERS OF LACTATION	322	0
0940	SEQUELAE OF COMPLICATION OF PREGNANCY/BIRTH/PUERPERIUM		
0950	OBSTETRIC DEATH OF UNSPECIFIED CAUSE	322	0
0960	DEATH FROM DIRECT OBSTETRIC CAUSE >42 DAYS TO LESS THAN 365 DAYS AFTER DELIVERY		
0970	DEATH FROM SEQUELAE OF DIRECT OBSTETRIC CAUSE		
0971	DEATH FROM SEQUELAE OF INDIRECT OBSTETRIC CAUSE		
0979	DEATH FROM SEQUELAE OF UNSPECIFIED OBSTETRIC CAUSE		
0980	TUBERCULOSIS COMPLICATING PREGNANCY/CHILDBIRTH/ PUERPERIUM	322	280

ICD10_4_COD	ICD10_4_TEXT	Max_days_preg_befor	Max_days_preg_aft
E		e	er
O981	SYPHILIS COMPLICATING PREGNANCY/CHILDBIRTH/ PUERPERIUM	322	280
O982	GONORRHOEA COMPLICATING PREGNANCY/CHILDBIRTH/ PUERPERIUM	322	280
O983	OTHER INFECTIOUS STD COMPLICATING PREGNANCY/CHILDBIRTH/ PUERPERIUM	322	280
O984	VIRAL HEPATITIS COMPLICATING PREGNANCY/CHILDBIRTH/ PUERPERIUM	322	280
O985	OTHER VIRAL DISEASE COMPLICATING PREGNANCY/CHILDBIRTH/ PUERPERIUM	322	280
O986	PROTOZOAL DISEASE COMPLICATING PREGNANCY/CHILDBIRTH/ PUERPERIUM	322	280
O987	HIV COMPLICATING PREGNANCY/CHILDBIRTH/ PUERPERIUM	322	280
O988	OTHER MATERNAL INFECTIOUS/PARASITIC DISEASE COMPLICATING PREGNANCY/CHILDBIRTH/ PUERPERIUM	322	280
O989	UNSPECIFIED MATERNAL INFECTIOUS/PARASITIC DISEASE COMPLICATING PREGNANCY/CHILDBIRTH/ PUERPERIUM	322	280
O990	ANAEMIA COMPLICATING PREGNANCY/CHILDBIRTH/ PUERPERIUM	322	280
O991	OTHER DISEASE OF BLOOD AND BLOOD FORMING ORGANS & CERTAIN IMMUNE-MECHANISM DISORDERS COMPLICATING PREGNANCY/CHILDBIRTH/ PUERPERIUM	322	280
O992	ENDOCRINE NUTRITIONAL AND METABOLIC DISEASES COMPLICATING PREGNANCY/CHILDBIRTH/ PUERPERIUM	322	280
O993	MENTAL/CNS DISORDERS COMPLICATING PREGNANCY/CHILDBIRTH/ PUERPERIUM	322	280
O994	DISEASES OF CIRCULATORY SYSTEM COMPLICATING PREGNANCY/CHILDBIRTH/ PUERPERIUM	322	280
O995	DISEASES OF RESPIRATORY SYSTEM COMPLICATING PREGNANCY/CHILDBIRTH/ PUERPERIUM	322	280
O996	DISEASES OF DIGESTIVE SYSTEM COMPLICATING PREGNANCY/CHILDBIRTH/ PUERPERIUM	322	280
O997	DISEASES OF SKIN/SUBCUTANEOUS TISSUE COMPLICATING PREGNANCY/CHILDBIRTH/ PUERPERIUM	322	280
O998	OTHER SPECIFIED DISEASES/CONDITIONS COMPLICATING PREGNANCY/CHILDBIRTH/ PUERPERIUM	322	280
Z321	PREGNANCY CONFIRMED	280	280
Z330	PREGNANCY STATE INCIDENT	280	280
Z340	SUPERVISION OF NORMAL FIRST PREGNANCY	280	280
Z348	SUPERVISION OF OTHER NORMAL PREGNANCY	280	280
Z349	SUPERVISION OF NORMAL PREGNANCY UNSPECIFIED	280	280
Z350	SUPERVISION OF PREGNANCY WITH HISTORY OF INTERTILITY	280	280
Z351	SUPERVISION OF PREGNANCY WITH HISTORY OF ABORTIVE OUTCOME	280	280

ICD10_4_COD	ICD10_4_TEXT	Max_days_preg_befor	Max_days_preg_aft
E		e	er
Z352	SUPERVISION OF PREGNANCY WITH OTHER POOR REPRODUCTIVE OR OBSTETRIC HISTORY	280	280
Z353	SUPERVISION OF PREGNANCY WITH HISTORY OF INSUFFICIENT ANTENATAL CARE	280	280
Z354	SUPERVISION OF PREGNANCY WITH GRAND MULTIPARITY	280	280
Z355	SUPERVISION OF ELDERLY PRIMIGRAVIDA	280	280
Z356	SUPERVISION OF VERY YOUNG PRIMIGRAVIDA	280	280
Z357	SUPERVISION OF HIGH-RISK PREGNANCY DUE TO SOCIAL PROBLEMS	280	280
Z358	SUPERVISION OF OTHER HIGH-RISK PREGNANCY	280	280
Z359	SUPERVISION OF HIGH-RISK PREGNANCY UNSPECIFIED	280	280
Z360	ANTENATAL SCREENING FOR CHROMOSOMAL ANOMALIES	280	280
Z361	ANTENATAL SCREENING FOR RAISED ALPHAFETOPROTEIN LEVEL	280	280
Z362	OTHER ANTENATAL SCREENING BASED ON AMNIOCENTESIS	280	280
Z363	ANTENATAL SCREENING FOR MALFORMATIONS USING ULTRASOUND AND OTHER PHYSICAL METHODS	280	280
Z364	ANTENATAL SCREENING FOR FETAL GROWTH RETARDATION USING ULTRASOUND AND OTHER PHYSICAL METHODS	280	280
Z365	ANTENATAL SCREENING FOR ISOIMMUNIZATION	280	280
Z368	OTHER ANTENATAL SCREENING	280	280
Z369	ANTENATAL SCREENING UNSPECIFIED	280	280
Z370	SINGLE LIVE BIRTH	280	0
Z371	SINGLE STILLBIRTH	280	0
Z372	TWINS BOTH LIVEBORN	280	0
Z373	TWINS ONE LIVEBORN AND ONE STILLBORN	280	0
Z374	TWINS BOTH STILLBORN	280	0
Z375	OTHER MULTIPLE BIRTHS ALL LIVEBORN	280	0
Z377	OTHER MULTIPLE BIRTHS ALL STILLBORN	280	0
Z379	OUTCOME OF DELIVERY UNSPECIFIED	280	0
Z380	SINGLETON BORN IN HOSPITAL	280	0
Z381	SINGLETON BORN OUTSIDE HOSPITAL	280	0
Z382	SINGLETON UNSPECIFIED PLACE OF BIRTH	280	0
Z383	TWIN BORN IN HOSPITAL	280	0
Z384	TWIN BORN OUTSIDE HOSPITAL	280	0
Z385	TWIN UNSPECIFIED PLACE OF BIRTH	280	0
Z386	OTHER MULTIPLE BORN IN HOSPITAL	280	0
Z388	OTHER MULTIPLE UNSPECIFIED PLACE OF BIRTH	280	0
Z390	CARE AND EXAMINATION IMMEDIATELY AFTER DELIVERY	280	0

ICD10_4_COD E	ICD10_4_TEXT	Max_days_preg_befor e	Max_days_preg_aft er
Z391	CARE AND EXAMINATION OF LACTATING MOTHER	322	0
Z392	ROUTINE POSTPARTUM FOLLOW-UP	322	0
Z640	PROBLEMS RELATED TO UNWANTED PREGNANCY	280	280
Z641	PROBLEMS RELATED TO MULTIPARITY	280	280

Regarding ICD 10 codes O00 to O08 (Pregnancy with abortive outcome) and O20.0 (Threatened abortion), 139 days were chosen as the likely limit for abortions based on the start of the peri-viable period for foetuses from around 20 weeks of gestation (1, 2). The same limit was considered for early pregnancy events (ICD 10 codes O20.8, O20.9, O21.0, O21.1).

ICD 10 codes for pregnancy in patients with known pre-existing diseases (O10, O24, O98 and O99) were not considered to specify the gestational age. Certain pregnancy-related conditions were also not considered to specify the gestational age (ICD 10 codes O21.8, O21.9, O22, O23, O25.0, O26, O28-O31, O34-O36, O40.0, O41, O42.2, O42.9, O43-O46, Z32.1, Z33.0, Z34-Z36), including codes for antenatal screening, and therefore 280 days were allocated both before and after the code.

For late pregnancy complications (eclampsia, gestational diabetes, late vomiting during pregnancy; ICD 10 codes O11-O14, O15.9, O21.2, O24.4) a maximum of 140 days after the code was allocated.

For complications during the puerperium (within 6 weeks after birth) a maximum of 322 days before was allocated.

Maternal care for disproportion was considered to take place within 90 days of birth and maternal care for malpresentation was considered to take place within 30 days of birth.

Codes related to labour were considered to occur within 0 days of birth.

References

1. Vani K, Facco FL, Himes KP. Pregnancy after periviable birth: making the case for innovative delivery of interpregnancy care. *The journal of maternal-fetal & neonatal medicine : the official journal of the European Association of Perinatal Medicine, the Federation of Asia and Oceania Perinatal Societies, the International Society of Perinatal Obstet.* 2019; 32(21): 3577-80.
2. Rossi RM, DeFranco EA. Maternal Complications Associated With Periviable Birth. *Obstetrics and gynecology.* 2018; 132(1): 107-14.