Modular Program Report

The following report(s) provides findings from an FDA-initiated query using its Mini-Sentinel pilot. While Mini-Sentinel queries may be undertaken to assess potential medical product safety risks, they may also be initiated for various other reasons. Some examples include determining a rate or count of an identified health outcome of interest, examining medical product use, exploring the feasibility of future, more detailed analyses within Mini-Sentinel, and seeking to better understand the capabilities of the Mini-Sentinel pilot.

Data obtained through Mini-Sentinel are intended to complement other types of evidence such as preclinical studies, clinical trials, postmarket studies, and adverse event reports, all of which are used by FDA to inform regulatory decisions regarding medical product safety. The information contained in this report is provided as part of FDA's commitment to place knowledge acquired from the Mini-Sentinel pilot in the public domain as soon as possible. Any public health actions taken by FDA regarding products involved in Mini-Sentinel queries will continue to be communicated through existing channels.

FDA wants to emphasize that the fact that FDA has initiated a query involving a medical product and is reporting findings related to that query does not mean that FDA is suggesting health care practitioners should change their prescribing practices for the medical product or that patients taking the medical product should stop using it. Patients who have questions about the use of an identified medical product should contact their health care practitioners.

The following report contains a description of the request, request specifications, and results from the modular program run(s).

If you are using a web page screen reader and are unable to access this document, please contact the Mini-Sentinel Operations Center for assistance at info@mini-sentinel.org.

Overview	
Request Description	FDA has requested execution of Modular Program #3 (version 2.5) to investigate the number of new Celiac Disease Events among New Users of Angiotensin Receptor Blockers (ARBs - olmesartan, candesartan, eprosartan, irbesartan, losartan, telmisartan, valsartan) as well as hydrochlorothiazide, atenolol, and amlodipine. The query was run against the Mini-Sentinel Distributed Database for the time period 1/1/2007 to 12/31/2011 (query period). The package was distributed to 17 Data Partners on August 15, 2012. Results provide counts of New Users of the drugs of interest, Dispensings, Total Days Supplied, New Episodes, Days at Risk, New Celiac Disease Events, Eligible Members, Member Days, Users per 1,000 Eligible Members, Dispensings per User, Days Supplied per User, Days Supplied per Dispensing, and New Celiac Disease Events per 100,000 Days at Risk. Total days supplied are from the MSCDM outpatient pharmacy table for records identified using valid NDC codes (for any form, e.g., tablet, vial, topical). A user was considered a new user if he/she was not exposed to the drug of interest in the prior 365 days (drug washout period). Outcomes found in the inpatient (IP), institutional (IS), outpatient (AV/OA), and emergent (ED) care settings were included. The results are stratified by age group, sex, and year. In addition, results are shown for three Minimum Episode Duration/Blackout Period pairings: 0, 365, and 730 days. The query period was January 1, 2007 to December 31, 2011. Please see the Specifications sheet for more information.
Request ID	MSY3_MPR34
Requester	FDA / CDER
Specifications	Program parameter inputs and scenarios
Glossary	List of Terms found in this Report and their Definitions
Table 1a	Table displaying Summary Incident Use and Outcome Data - Overall Number of New Users, Dispensings, Total Days Supplied, New Episodes, Days at Risk, New Events, Eligible Members, and Member Days by Drug Product and Minimum Episode Duration - January 1, 2007 to December 31, 2011
Figure 1a	Four charts depicting data from Table 1a
Table 1b	Table displaying Summary Incident Use and Outcome Rate Data - Overall Number of New Users per 1,000 Eligible Members, Dispensings per User, Days Supplied per User, Days Supplied per Dispensing, and New Events per 1 Million Days at Risk by Drug Product and Minimum Episode Duration- January 1, 2007 to December 31, 2011
Figure 1b	Five charts depicting data from Table 1b
Table 2a	Table displaying Summary Incident Use and Outcome Data - Number of New Users, Dispensings, Total Days Supplied, New Episodes, Days at Risk, New Events, Eligible Members, and Member Days by Drug Product, Minimum Episode Duration/Blackout, and Age - January 1, 2007 to December 31, 2011
Table 2b	Table displaying Summary Incident Use and Outcome Rate Data - Number of New Users per 1,000 Eligible Members, Dispensings per User, Days Supplied per User, Days Supplied per Dispensing, and New Events per 1 Million Days at Risk by Drug Product, Minimum Episode Duration/Blackout, and Age - January 1, 2007 to December 31, 2011
Table 3a	Table displaying Summary Incident Use and Outcome Data - Number of New Users, Dispensings, Total Days Supplied, New Episodes, Days at Risk, New Events, Eligible Members, and Member Days by Drug Product, Minimum Episode Duration/Blackout, and Sex - January 1, 2007 to December 31, 2011

Overview cont.	
Table 3b	Table displaying Summary Incident Use and Outcome Rate Data - Number of New Users per 1,000 Eligible Members, Dispensings per User, Days Supplied per User, Days Supplied per Dispensing, and New Events per 1 Million Days at Risk by Drug Product, Minimum Episode Duration/Blackout, and Sex - January 1, 2007 to December 31, 2011
Table 4a	Table displaying Summary Incident Use and Outcome Data - Number of New Users, Dispensings, Total Days Supplied, New Episodes, Days at Risk, New Events, Eligible Members, and Member Days by Drug Product, Minimum Episode Duration/Blackout, and Year - January 1, 2007 to December 31, 2011
Table 4b	Table displaying Summary Incident Use and Outcome Rate Data - Number of New Users per 1,000 Eligible Members, Dispensings per User, Days Supplied per User, Days Supplied per Dispensing, and New Events per 1 Million Days at Risk by Drug Product, Minimum Episode Duration/Blackout, and Year - January 1, 2007 to December 31, 2011
Notes:	Please contact the Mini-Sentinel Operations Center (MSOC_Requests@harvardpilgrim.org) for questions and to provide comments/suggestions for future enhancements to this document.

Modular Program Specifications - MSY3_MPR34

Modular Program #3 (version 2.5) was used to investigate the number of new Celiac Disease Events among New Users of Angiotensin Receptor Blockers (ARBs - Olmesartan, Candesartan, Eprosartan, Irbesartan, Losartan, Telmisartan, Valsartan) as well as Hydrochlorothiazide, Atenolol, and Amlodipine. The query period was from January 1, 2007 to December 31, 2011, and the enrollment gap was set at 45 days†. Age groups were split as follows: 18-44, 45-64, and 65+. In total, 30 different scenarios were examined in this report with differing Minimum Episode Duration and Blackout Period values. See below for a description of each of these scenarios.

	Drug/Exposure								Event/Outcome					
Scenario	Incident exposure	Incident w/ respect to (incidence criteria):	Washout Period (days)	Washout Type*	Episode gap (days)	Extension period (days)	Min episode duration (days)	Min days supplied	Event/ Outcome	Washout (days)	Washout Type**	Care Setting	Principal Dx	Blackout Period (days)
1	olmesartan	olmesartan	365	Single	10	0	0	0	Celiac Disease	365	Mult	All	NO	0
2	olmesartan	olmesartan	365	Single	10	0	365	0	Celiac Disease	365	Mult	All	NO	365
3	olmesartan	olmesartan	365	Single	10	0	730	0	Celiac Disease	365	Mult	All	NO	730
4	candesartan	candesartan	365	Single	10	0	0	0	Celiac Disease	365	Mult	All	NO	0
5	candesartan	candesartan	365	Single	10	0	365	0	Celiac Disease	365	Mult	All	NO	365
6	candesartan	candesartan	365	Single	10	0	730	0	Celiac Disease	365	Mult	All	NO	730
7	eprosartan	eprosartan	365	Single	10	0	0	0	Celiac Disease	365	Mult	All	NO	0
8	eprosartan	eprosartan	365	Single	10	0	365	0	Celiac Disease	365	Mult	All	NO	365
9	eprosartan	eprosartan	365	Single	10	0	730	0	Celiac Disease	365	Mult	All	NO	730
10	irbesartan	irbesartan	365	Single	10	0	0	0	Celiac Disease	365	Mult	All	NO	0
11	irbesartan	irbesartan	365	Single	10	0	365	0	Celiac Disease	365	Mult	All	NO	365
12	irbesartan	irbesartan	365	Single	10	0	730	0	Celiac Disease	365	Mult	All	NO	730

Modular Program Specifications - MSY3_MPR34 cont.

	Drug/Exposure								Event/Outcome					
Scenario	Incident exposure	Incident w/ respect to (incidence criteria):	Washout Period (days)	Washout Type*	Episode gap (days)	Extension period (days)	Min episode duration (days)	Min days supplied	Event/ Outcome	Washout (days)	Washout Type**	Care Setting	Principal Dx	Blackout Period (days)
13	losartan	losartan	365	Single	10	0	0	0	Celiac Disease	365	Mult	All	NO	0
14	losartan	losartan	365	Single	10	0	365	0	Celiac Disease	365	Mult	All	NO	365
15	losartan	losartan	365	Single	10	0	730	0	Celiac Disease	365	Mult	All	NO	730
16	telmisartan	telmisartan	365	Single	10	0	0	0	Celiac Disease	365	Mult	All	NO	0
17	telmisartan	telmisartan	365	Single	10	0	365	0	Celiac Disease	365	Mult	All	NO	365
18	telmisartan	telmisartan	365	Single	10	0	730	0	Celiac Disease	365	Mult	All	NO	730
19	valsartan	valsartan	365	Single	10	0	0	0	Celiac Disease	365	Mult	All	NO	0
20	valsartan	valsartan	365	Single	10	0	365	0	Celiac Disease	365	Mult	All	NO	365
21	valsartan	valsartan	365	Single	10	0	730	0	Celiac Disease	365	Mult	All	NO	730
22	hydrochlorothiazide	hydrochlorothiazide	365	Single	10	0	0	0	Celiac Disease	365	Mult	All	NO	0
23	hydrochlorothiazide	hydrochlorothiazide	365	Single	10	0	365	0	Celiac Disease	365	Mult	All	NO	365
24	hydrochlorothiazide	hydrochlorothiazide	365	Single	10	0	730	0	Celiac Disease	365	Mult	All	NO	730
25	atenolol	atenolol	365	Single	10	0	0	0	Celiac Disease	365	Mult	All	NO	0
26	atenolol	atenolol	365	Single	10	0	365	0	Celiac Disease	365	Mult	All	NO	365

Modular Program Specifications - MSY3_MPR34 cont.

	Drug/Exposure								Event/Outcome					
Scenario	Incident exposure	Incident w/ respect to (incidence criteria):	Washout Period (days)	Washout Type*	Episode gap (days)	Extension period (days)	Min episode duration (days)	Min days supplied	Event/ Outcome	Washout (days)	Washout Type**	Care Setting	Principal Dx	Blackout Period (days)
27	atenolol	atenolol	365	Single	10	0	730	0	Celiac Disease	365	Mult	All	NO	730
28	amlodipine	amlodipine	365	Single	10	0	0	0	Celiac Disease	365	Mult	All	NO	0
29	amlodipine	amlodipine	365	Single	10	0	365	0	Celiac Disease	365	Mult	All	NO	365
30	amlodipine	amlodipine	365	Single	10	0	730	0	Celiac Disease	365	Mult	All	NO	730

†For all scenarios, both medical and drug coverage are required.

*A "single" washout type for the exposure will only consider the first incident episode for each user during the query period that satisfies the washout period criteria. There may only be one treatment episode per user.

**A "multiple" washout type for the event will only consider the first event for each episode that satisfies the washout period criteria. There can be at most one event per episode.

Glossary of Terms in Modular Program 3*

Blackout Period - number of days at the beginning of a treatment episode that events are to be ignored. If an event occurs during the blackout period, the episode is excluded.

Care Setting - type of medical encounter or facility where the exposure, event, or condition code was recorded. Possible care settings include: Inpatient Hospital Stay (IP), Non-Acute Institutional Stay (IS), Emergency Department (ED), Ambulatory Visit (AV), and Other Ambulatory Visit (OA).

Days at Risk - number of days supplied plus any episode gaps and exposure extension periods.

Eligible Members - Number of members eligible for an incident treatment episode (defined by the drug/exposure and event washout periods) with drug and medical coverage during the query period.

Enrollment Gap - number of days allowed between two consecutive enrollment periods without breaking a "continuously enrolled" sequence.

Episode Gap - number of days allowed between two (or more) consecutive exposures (dispensings/procedures) to be considered the same treatment episode.

Exposure Extension Period - number of days post treatment period in which the outcomes/events are counted for a

Lookback Period (pre-existing condition) - number of days wherein a member is required to have evidence of pre-existing condition (diagnosis/procedure/drug dispensing).

Member-Days - sum of all days of enrollment with medical and drug coverage** in the query period preceded by an exposure washout period.

Minimum Days Supplied - specifies a minimum number of days in length of the days supplied for the episode to be

Minimum Episode Duration - specifies a minimum number of days in length of the epsiode for it to be considered

New Episodes - new treatment episodes; length of episode is determined by days supplied in one dispensing (or consecutive dispensings bridged by the episode gap.

New Users - number of members with incident exposure during the query period. Member must have no evidence of exposure (s) of interest (defined by incidence criteria) in the prior washout period. A user may only be counted once in a

Principal Diagnosis - diagnosis or condition established to be chiefly responsible for admission of the patient to the hospital. YES will only consider diagnoses flagged as Principal

Query Period - period in which the modular program looks for exposures and outcomes of interest.

Washout Period (drug/exposure) -** number of days a user is required to have no evidence of prior exposure (drug dispensing/procedure) and continuous drug and medical coverage prior to an incident treatment episode.

Washout Period (event/outcome) -** number of days a user is required to have no evidence of a prior event (procedure/diagnosis) and continuous drug and medical coverage prior to an incident treatment episode.

Washout Type (drug/exposure)- *Minimum washout type* will consider the first treatment episode in the query period as long as it is the first treatment episode in the user's entire available history. *Single* and *Multiple washout types* will use the washout period to establish incidence, however *Single* will only consider the first treatment episode whereas *Multiple* will consider all qualifying incident treatment episodes.

Washout Type (event/outcome)- *Minimum washout type* considers the first event in a valid episode as long as it is the first event in the user's entire available history. *Multiple washout type* uses the washout period to establish incidence and considers all qualifying incident treatment episodes. The program will only consider one event per episode, but the *Multiple washout type* will consider more than one event per user if a user has more than one incident episode.

*all terms may not be used in this report

**incident treatment episodes must be incident to both the exposure and the event

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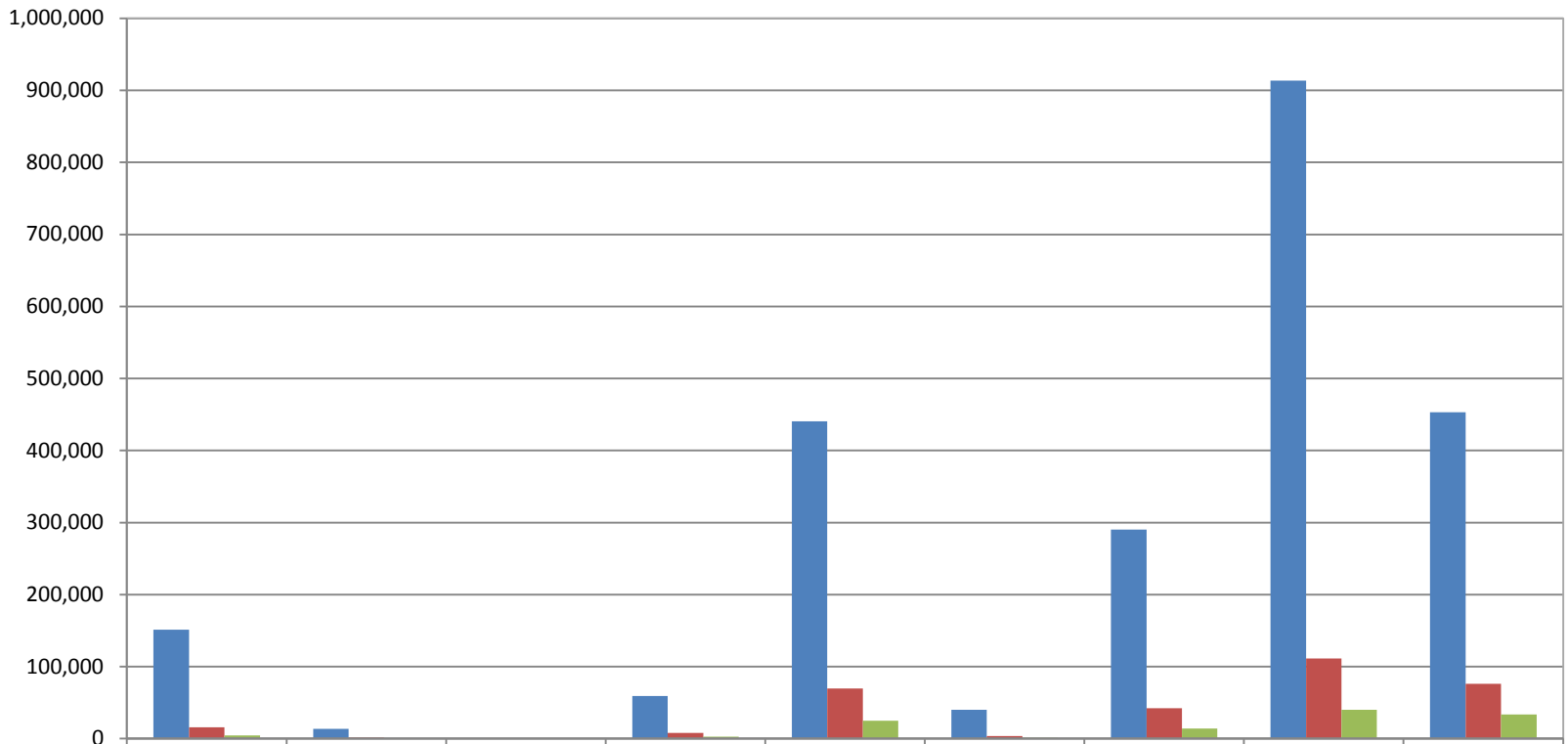
Table 1a. Summary of Incident Drug Use and Outcomes in the MSDD between January 1, 2007 to December 31, 2011, by Drug Product and Minimum Episode Duration and Blackout Period

	New Users	Dispensings	Total Days Supplied	New Episodes	Days at Risk	New Events	Eligible Members	Member-Days
Olmesartan								
0-Day Min Episode Duration and Blackout Period	151,461	574,998	21,723,851	151,461	21,816,716	40	38,385,828	28,860,364,615
365-Day Min Episode Duration and Blackout Period	15,750	253,392	10,033,720	15,750	10,149,587	10	26,698,173	26,821,697,599
730-Day Min Episode Duration and Blackout Period	4,419	105,190	4,317,717	4,419	4,358,523	5	17,303,653	22,192,828,434
Candesartan								
0-Day Min Episode Duration and Blackout Period	13,767	54,948	2,202,010	13,767	2,188,782	8	38,531,180	29,066,257,979
365-Day Min Episode Duration and Blackout Period	1,590	26,695	1,092,001	1,590	1,100,276	2	26,861,473	27,018,628,914
730-Day Min Episode Duration and Blackout Period	543	13,353	562,863	543	565,483	1	17,452,079	22,387,902,745
Eprosartan								
0-Day Min Episode Duration and Blackout Period	258	985	40,701	258	40,855	0	38,564,072	29,107,978,761
365-Day Min Episode Duration and Blackout Period	34	527	22,308	34	22,589	0	26,897,762	27,059,109,552
730-Day Min Episode Duration and Blackout Period	11	239	10,812	11	10,959	0	17,479,161	22,425,164,279
Irbesartan								
0-Day Min Episode Duration and Blackout Period	59,195	251,804	10,351,469	59,195	10,285,710	19	38,426,353	28,944,017,822
365-Day Min Episode Duration and Blackout Period	7,952	129,856	5,491,668	7,952	5,523,313	8	26,752,359	26,900,862,298
730-Day Min Episode Duration and Blackout Period	2,721	63,195	2,801,070	2,721	2,813,107	1	17,371,655	22,279,436,115
Losartan								
0-Day Min Episode Duration and Blackout Period	440,583	1,831,300	96,592,708	440,583	93,722,099	174	38,221,056	28,539,172,454
365-Day Min Episode Duration and Blackout Period	69,417	846,552	51,623,221	69,417	50,799,898	30	26,526,748	26,506,277,484
730-Day Min Episode Duration and Blackout Period	25,045	420,338	29,017,902	25,045	28,582,536	9	17,138,104	21,877,128,769
Telmisartan								
0-Day Min Episode Duration and Blackout Period	39,969	143,378	5,364,697	39,969	5,383,621	8	38,521,248	29,043,284,821
365-Day Min Episode Duration and Blackout Period	3,677	61,640	2,395,181	3,677	2,426,112	2	26,848,287	26,998,131,709
730-Day Min Episode Duration and Blackout Period	1,124	28,275	1,119,148	1,124	1,131,481	0	17,434,222	22,363,785,079
Valsartan								
0-Day Min Episode Duration and Blackout Period	290,305	1,364,889	52,375,405	290,305	52,349,741	118	38,069,921	28,501,126,647
365-Day Min Episode Duration and Blackout Period	42,388	726,423	28,725,719	42,388	28,958,110	25	26,386,613	26,472,123,206
730-Day Min Episode Duration and Blackout Period	13,925	346,862	14,073,638	13,925	14,177,795	7	17,063,326	21,871,935,930
Hydrochlorothiazide								
0-Day Min Episode Duration and Blackout Period	913,563	3,098,577	154,381,144	913,563	152,103,798	294	37,742,198	27,607,080,391
365-Day Min Episode Duration and Blackout Period	111,445	1,419,571	80,781,953	111,445	80,133,280	43	25,916,173	25,634,779,516
730-Day Min Episode Duration and Blackout Period	40,204	702,649	44,017,868	40,204	43,556,551	17	16,545,292	20,984,466,582

Table 1a cont. Summary of Incident Drug Use and Outcomes in the MSDD between January 1, 2007 to December 31, 2011, by Drug Product and Minimum Episode Duration and Blackout Period

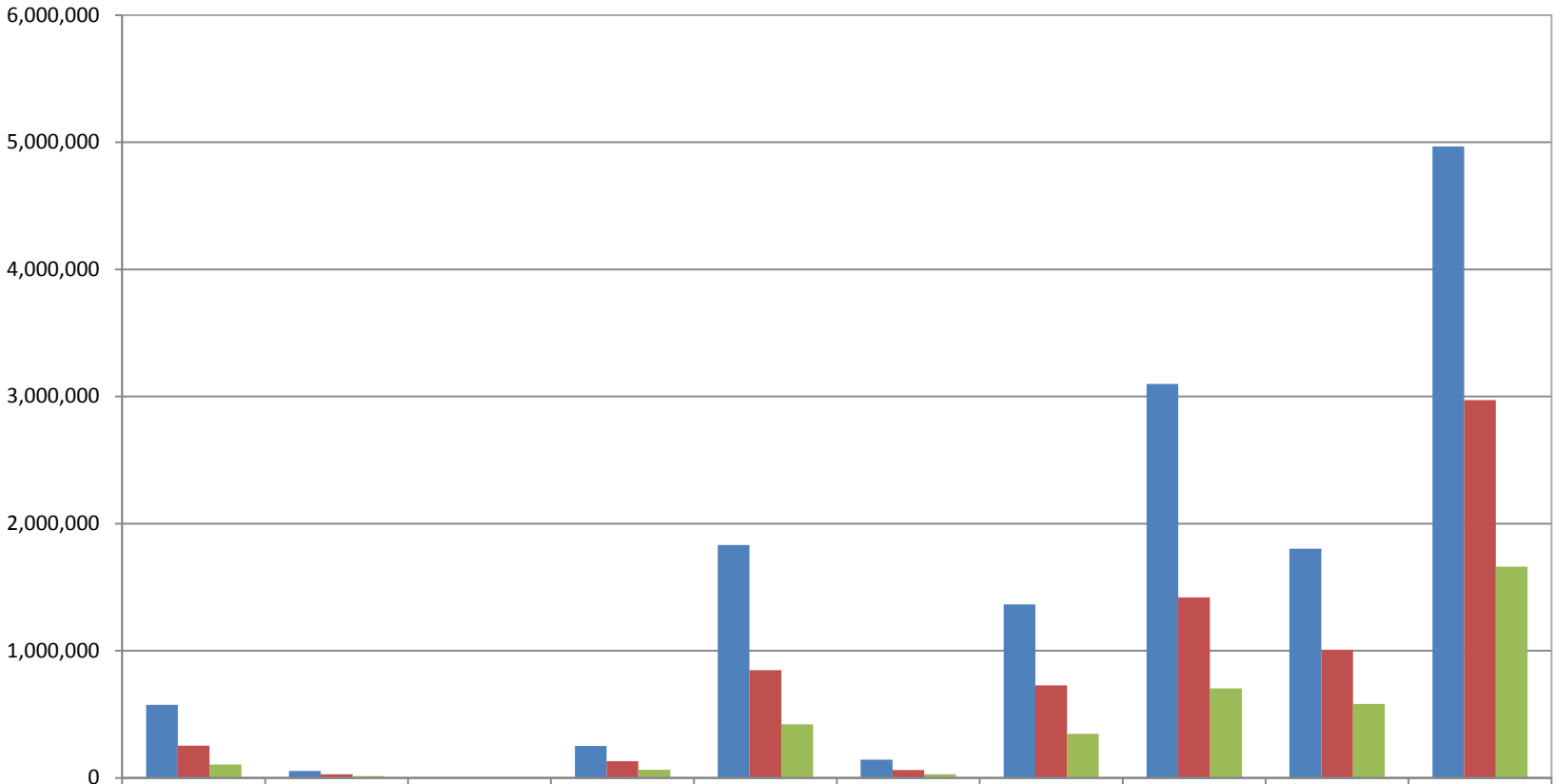
	New Users	Dispensings	Total Days Supplied	New Episodes	Days at Risk	New Events	Eligible Members	Member-Days
Atenolol								
0-Day Min Episode Duration and Blackout Period	452,985	1,802,795	97,807,961	452,985	96,142,825	181	37,683,698	27,766,639,222
365-Day Min Episode Duration and Blackout Period	76,293	1,006,721	60,675,781	76,293	59,988,735	41	25,982,851	25,770,165,802
730-Day Min Episode Duration and Blackout Period	33,431	582,153	38,250,025	33,431	37,742,762	22	16,667,718	21,167,123,849
Amlodipine								
0-Day Min Episode Duration and Blackout Period	991,184	4,966,717	246,743,942	991,184	243,023,217	361	37,644,817	27,723,829,178
365-Day Min Episode Duration and Blackout Period	211,204	2,970,968	163,045,097	211,204	161,299,171	95	25,932,331	25,733,146,278
730-Day Min Episode Duration and Blackout Period	91,707	1,660,654	100,251,340	91,707	98,996,059	37	16,546,442	21,074,698,565

Figure 1ai. Number of Incident Users in the MSDD between January 1, 2007 to December 31, 2011, by Drug Product and Minimum Episode Duration and Blackout Period



	Olmesartan	Candesartan	Eprosartan	Irbesartan	Losartan	Telmisartan	Valsartan	Hydrochlorothiazide	Atenolol
0-Day Minimum Episode Duration	151,461	13,767	258	59,195	440,583	39,969	290,305	913,563	452,985
365-Day Minimum Episode Duration	15,750	1,590	34	7,952	69,417	3,677	42,388	111,445	76,293
730-Day Minimum Episode Duration	4,419	543	11	2,721	25,045	1,124	13,925	40,204	33,431

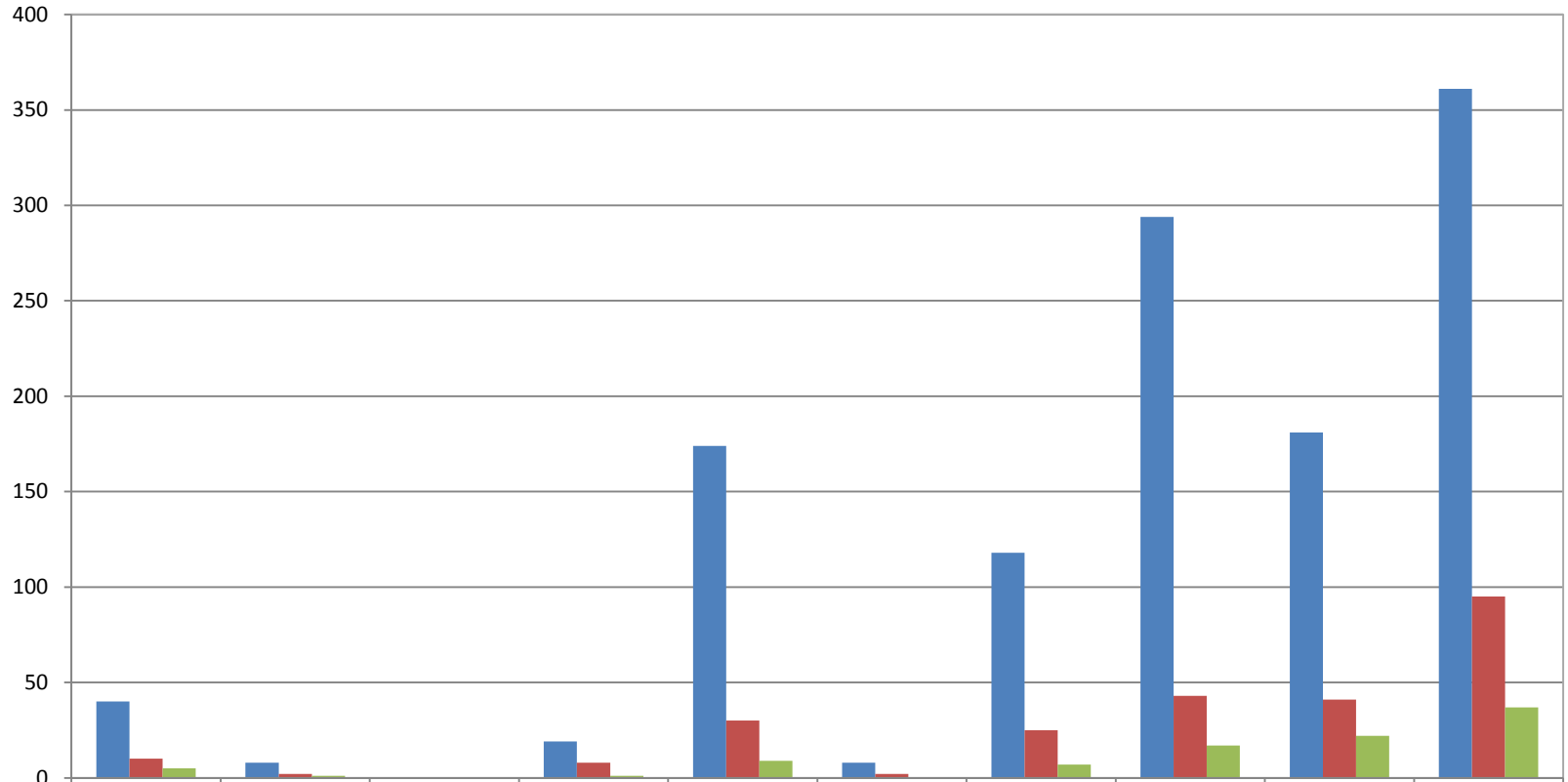
Figure1aii. Number of Dispensings for Incident Users in the MSDD between January 1, 2007 to December 31, 2011, by Drug Product and Minimum Episode Duration and Blackout Period*



	Olmesartan	Candesartan	Eprosartan	Irbesartan	Losartan	Telmisartan	Valsartan	Hydrochlorothiazide	Atenolol	Amlodipine
0-Day Minimum Episode Duration	574,998	54,948	985	251,804	1,831,300	143,378	1,364,889	3,098,577	1,802,795	4,966,717
365-Day Minimum Episode Duration	253,392	26,695	527	129,856	846,552	61,640	726,423	1,419,571	1,006,721	2,970,968
730-Day Minimum Episode Duration	105,190	13,353	239	63,195	420,338	28,275	346,862	702,649	582,153	1,660,654

*First treatment episode only

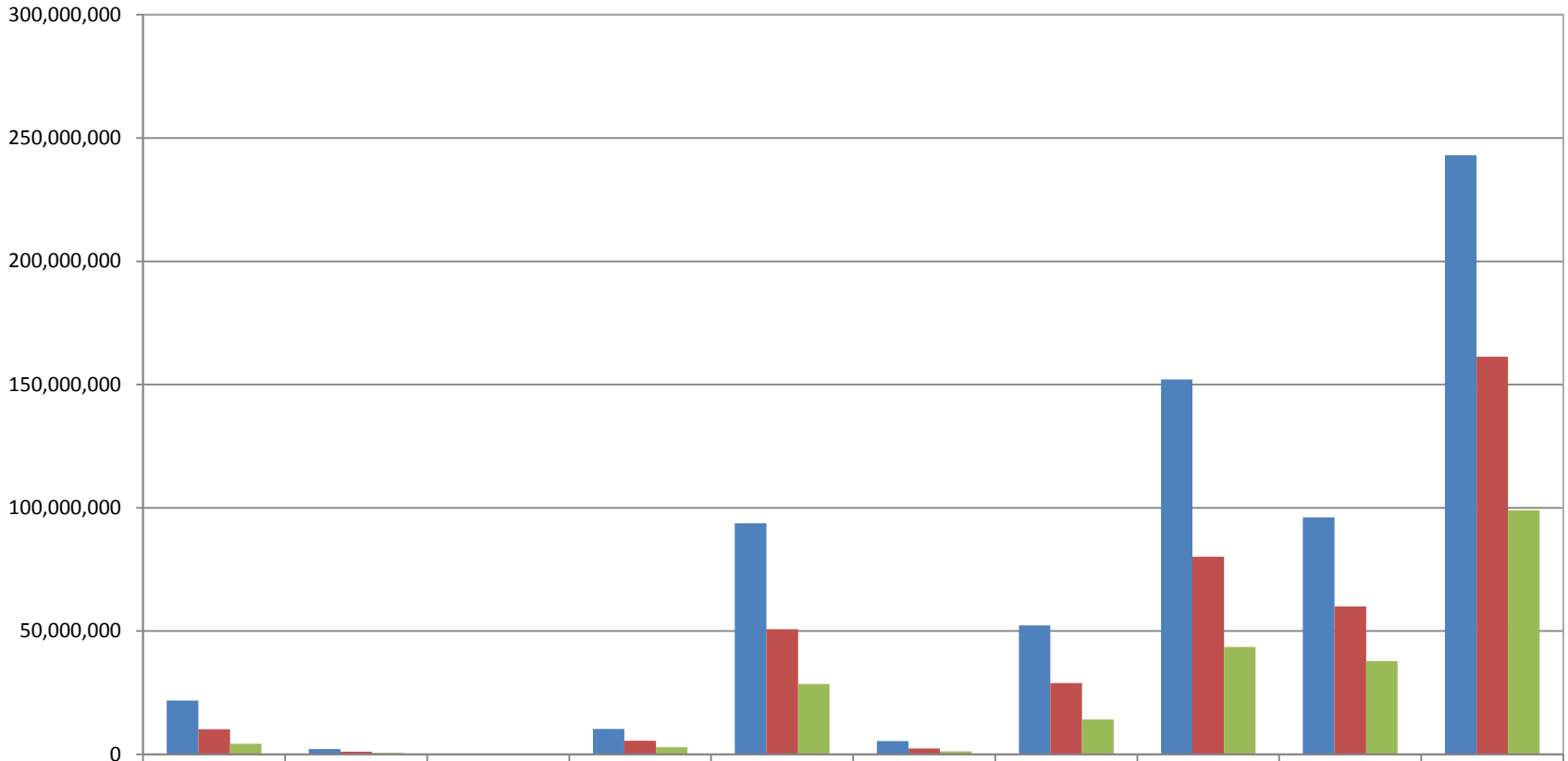
Figure1aiii. Number of Events for Incident Users in the MSDD between January 1, 2007 to December 31, 2010, by Drug Product and Minimum Episode Duration and Blackout Period*



	Olmesartan	Candesartan	Eprosartan	Irbesartan	Losartan	Telmisartan	Valsartan	Hydrochlorothiazide	Atenolol	Amlodipine
0-Day Minimum Episode Duration	40	8	0	19	174	8	118	294	181	361
365-Day Minimum Episode Duration	10	2	0	8	30	2	25	43	41	95
730-Day Minimum Episode Duration	5	1	0	1	9	0	7	17	22	37

*First treatment episode only

Figure1aiv. Number of Days at Risk for Incident Users in the MSDD between January 1, 2007 to December 31, 2010, by Drug Product and Minimum Episode Duration and Blackout Period*



	Olmesartan	Candesartan	Eprosartan	Irbesartan	Losartan	Telmisartan	Valsartan	Hydrochlorothiazide	Atenolol	Amlodipine
0-Day Minimum Episode Duration	21,816,716	2,188,782	40,855	10,285,710	93,722,099	5,383,621	52,349,741	152,103,798	96,142,825	243,023,217
365-Day Minimum Episode Duration	10,149,587	1,100,276	22,589	5,523,313	50,799,898	2,426,112	28,958,110	80,133,280	59,988,735	161,299,171
730-Day Minimum Episode Duration	4,358,523	565,483	10,959	2,813,107	28,582,536	1,131,481	14,177,795	43,556,551	37,742,762	98,996,059

*First treatment episode only

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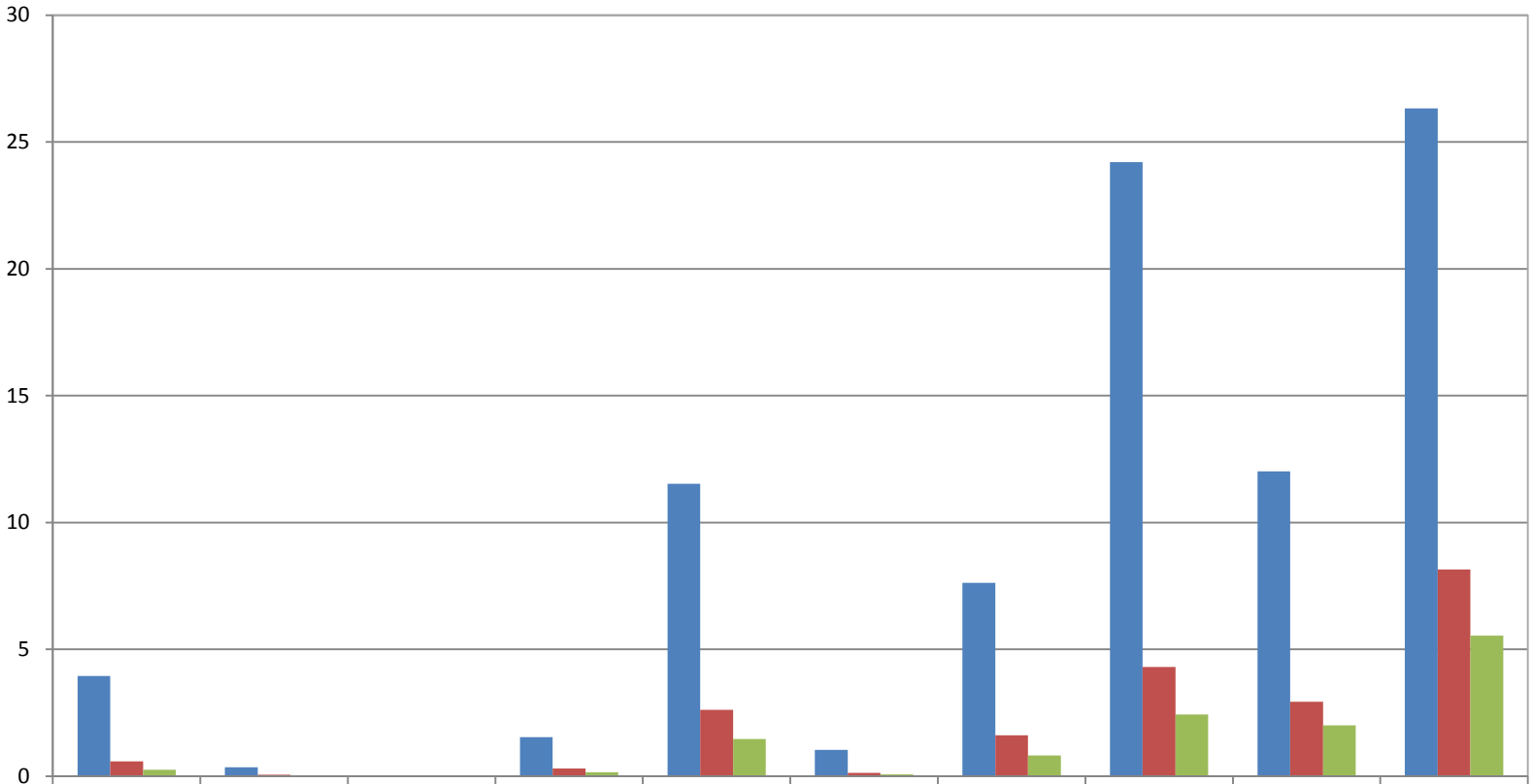
Table 1b. Rates of Incident Drug Use and Outcomes in the MSDD between January 1, 2007 to December 31, 2011, by Drug Product and Minimum Episode Duration and Blackout Period

	New Users/ 1K Eligible Members	Dispensings/ User	Days Supplied/ User	Days Supplied/ Dispensing	New Events/ 1M Days at Risk
Olmesartan					
0-Day Min Episode Duration and Blackout Period	3.9	3.8	143.4	37.8	1.8
365-Day Min Episode Duration and Blackout Period	0.6	16.1	637.1	39.6	1.0
730-Day Min Episode Duration and Blackout Period	0.3	23.8	977.1	41.0	1.1
Candesartan					
0-Day Min Episode Duration and Blackout Period	0.4	4.0	159.9	40.1	3.7
365-Day Min Episode Duration and Blackout Period	0.1	16.8	686.8	40.9	1.8
730-Day Min Episode Duration and Blackout Period	0.0	24.6	1,036.6	42.2	1.8
Eprosartan					
0-Day Min Episode Duration and Blackout Period	0.0	3.8	157.8	41.3	0.0
365-Day Min Episode Duration and Blackout Period	0.0	15.5	656.1	42.3	0.0
730-Day Min Episode Duration and Blackout Period	0.0	21.7	982.9	45.2	0.0
Irbesartan					
0-Day Min Episode Duration and Blackout Period	1.5	4.3	174.9	41.1	1.8
365-Day Min Episode Duration and Blackout Period	0.3	16.3	690.6	42.3	1.4
730-Day Min Episode Duration and Blackout Period	0.2	23.2	1,029.4	44.3	0.4
Losartan					
0-Day Min Episode Duration and Blackout Period	11.5	4.2	219.2	52.7	1.9
365-Day Min Episode Duration and Blackout Period	2.6	12.2	743.7	61.0	0.6
730-Day Min Episode Duration and Blackout Period	1.5	16.8	1,158.6	69.0	0.3
Telmisartan					
0-Day Min Episode Duration and Blackout Period	1.0	3.6	134.2	37.4	1.5
365-Day Min Episode Duration and Blackout Period	0.1	16.8	651.4	38.9	0.8
730-Day Min Episode Duration and Blackout Period	0.1	25.2	995.7	39.6	0.0
Valsartan					
0-Day Min Episode Duration and Blackout Period	7.6	4.7	180.4	38.4	2.3
365-Day Min Episode Duration and Blackout Period	1.6	17.1	677.7	39.5	0.9
730-Day Min Episode Duration and Blackout Period	0.8	24.9	1,010.7	40.6	0.5
Hydrochlorothiazide					
0-Day Min Episode Duration and Blackout Period	24.2	3.4	169.0	49.8	1.9
365-Day Min Episode Duration and Blackout Period	4.3	12.7	724.9	56.9	0.5
730-Day Min Episode Duration and Blackout Period	2.4	17.5	1,094.9	62.6	0.4

Table 1b cont. Rates of Incident Drug Use and Outcomes in the MSDD between January 1, 2007 to December 31, 2011, by Drug Product and Minimum Episode Duration and Blackout Period

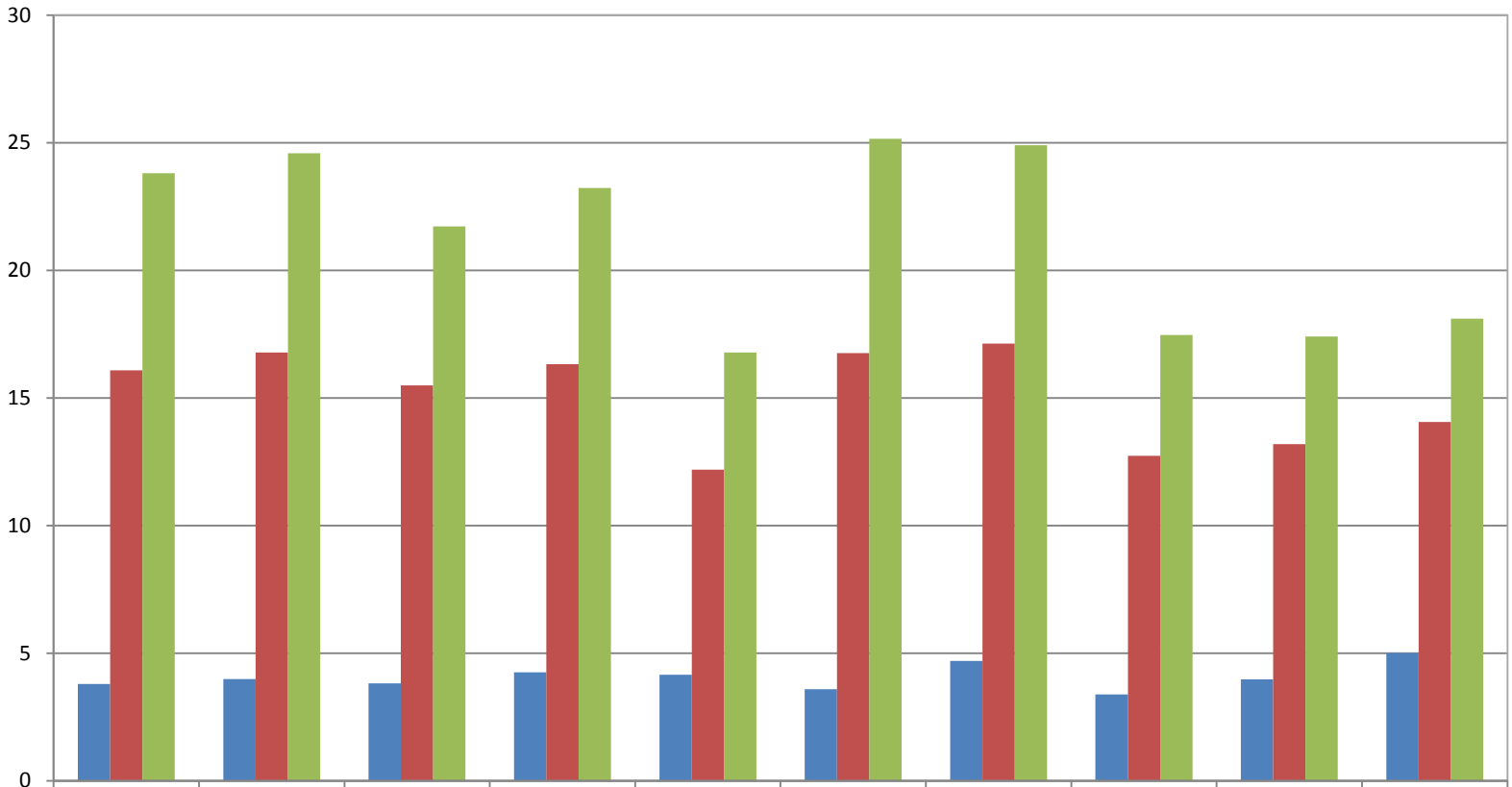
	New Users/ 1K Eligible Members	Dispensings/ User	Days Supplied/ User	Days Supplied/ Dispensing	New Events/ 1M Days at Risk
Atenolol					
0-Day Min Episode Duration and Blackout Period	12.0	4.0	215.9	54.3	1.9
365-Day Min Episode Duration and Blackout Period	2.9	13.2	795.3	60.3	0.7
730-Day Min Episode Duration and Blackout Period	2.0	17.4	1,144.1	65.7	0.6
Amlodipine					
0-Day Min Episode Duration and Blackout Period	26.3	5.0	248.9	49.7	1.5
365-Day Min Episode Duration and Blackout Period	8.1	14.1	772.0	54.9	0.6
730-Day Min Episode Duration and Blackout Period	5.5	18.1	1,093.2	60.4	0.4

Figure1bi. Number of New Users per 1000 Eligible Members by Drug Product and Minimum Episode Duration and Blackout Period



	Olmesartan	Candesartan	Eprosartan	Irbesartan	Losartan	Telmisartan	Valsartan	Hydrochlorothiazide	Atenolol	Amlodipine
0-Day Minimum Episode Duration	3.9	0.4	0.0	1.5	11.5	1.0	7.6	24.2	12.0	26.3
365-Day Minimum Episode Duration	0.6	0.1	0.0	0.3	2.6	0.1	1.6	4.3	2.9	8.1
730-Day Minimum Episode Duration	0.3	0.0	0.0	0.2	1.5	0.1	0.8	2.4	2.0	5.5

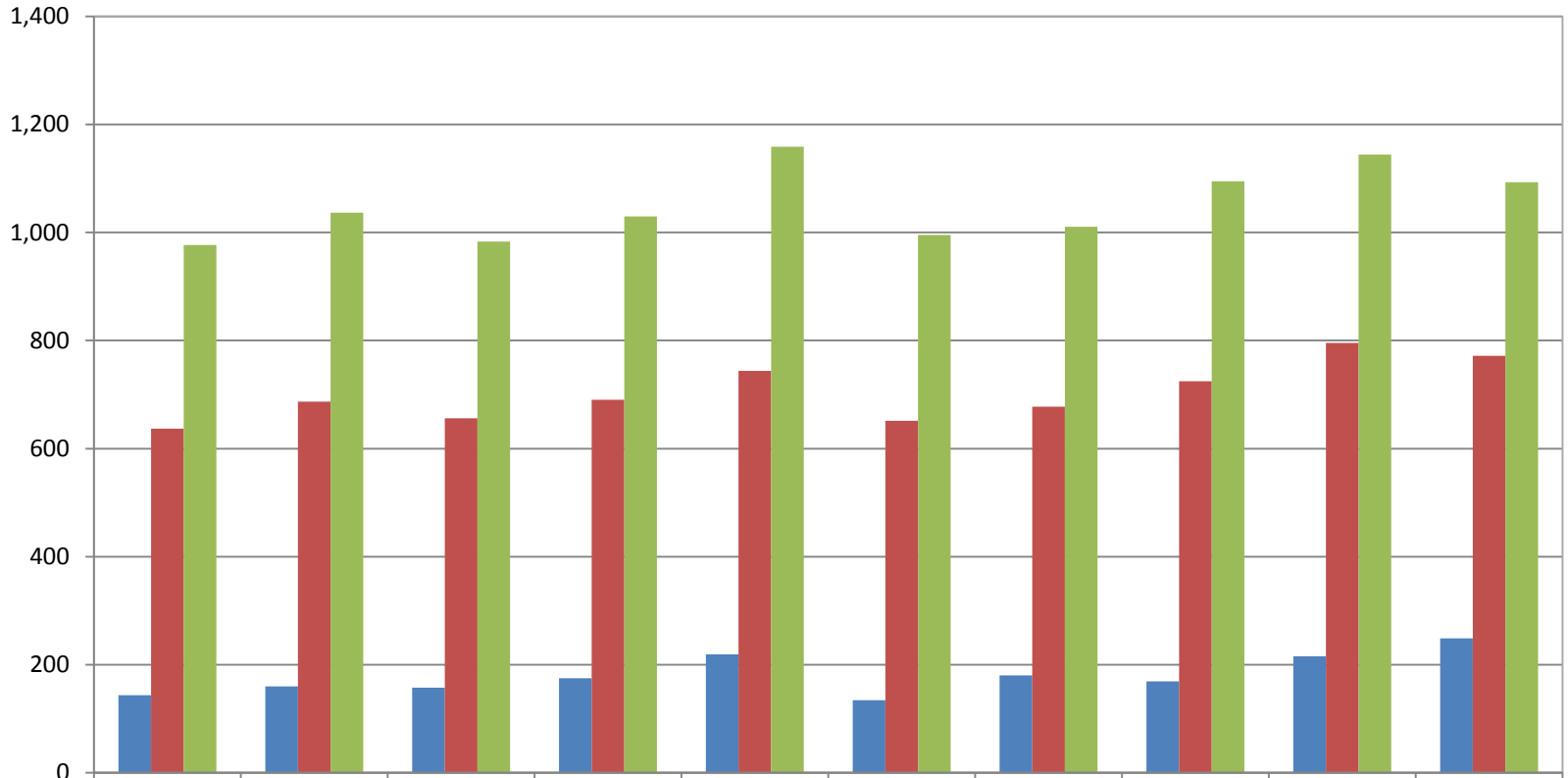
Figure1bii. Number of Dispensings per New User by Drug Product and Minimum Episode Duration and Blackout Period*



	Olmesartan	Candesartan	Eprosartan	Irbesartan	Losartan	Telmisartan	Valsartan	Hydrochlorothiazide	Atenolol	Amlodipine
0-Day Minimum Episode Duration	3.8	4.0	3.8	4.3	4.2	3.6	4.7	3.4	4.0	5.0
365-Day Minimum Episode Duration	16.1	16.8	15.5	16.3	12.2	16.8	17.1	12.7	13.2	14.1
730-Day Minimum Episode Duration	23.8	24.6	21.7	23.2	16.8	25.2	24.9	17.5	17.4	18.1

* First treatment episode only

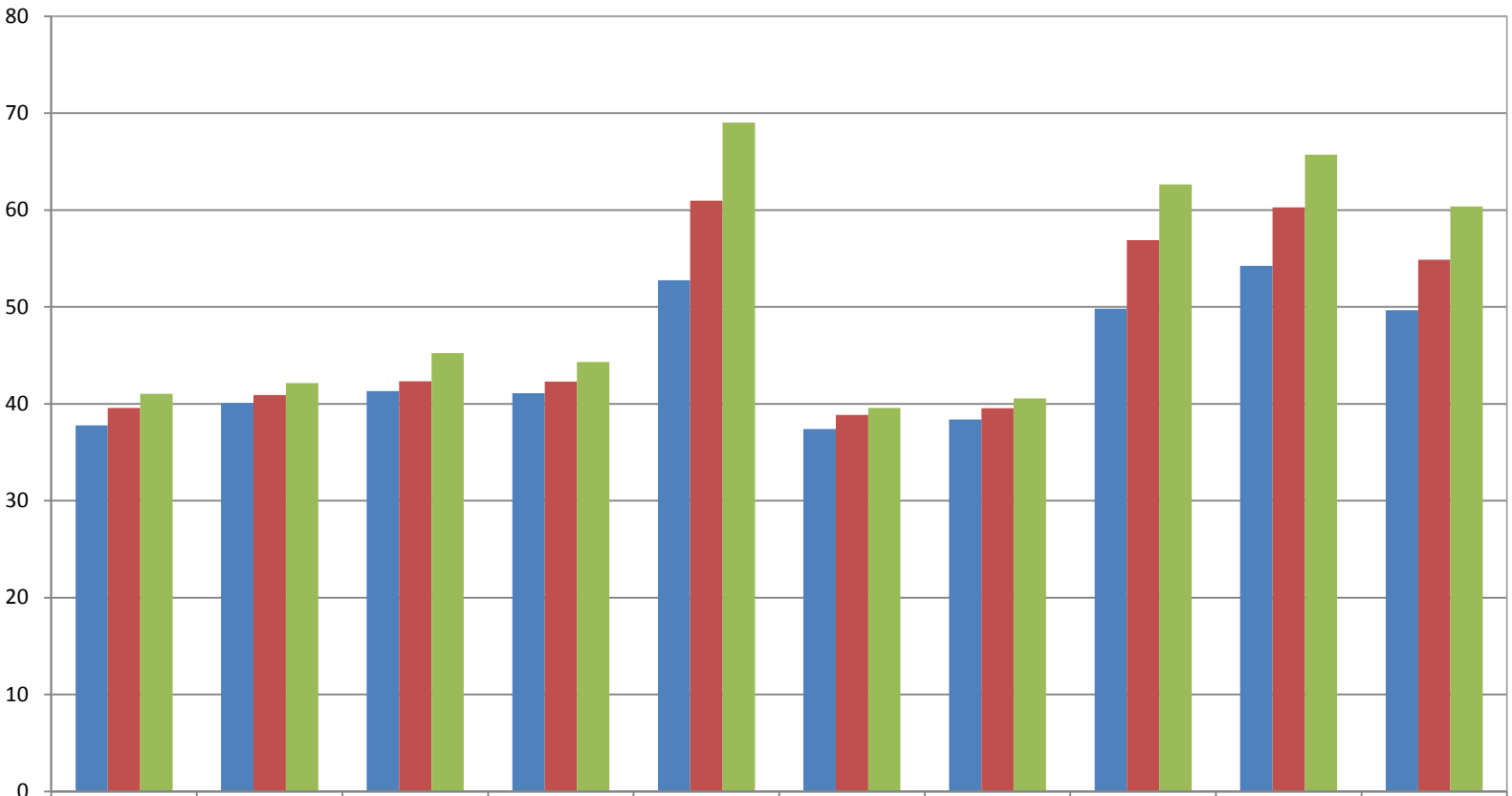
Figure1biii. Number of Days Supplied per New User by Drug Product and Minimum Episode Duration and Blackout Period*



	Olmesartan	Candesartan	Eprosartan	Irbesartan	Losartan	Telmisartan	Valsartan	Hydrochlorothiazide	Atenolol	Amlodipine
0-Day Minimum Episode Duration	143.4	159.9	157.8	174.9	219.2	134.2	180.4	169.0	215.9	248.9
365-Day Minimum Episode Duration	637.1	686.8	656.1	690.6	743.7	651.4	677.7	724.9	795.3	772.0
730-Day Minimum Episode Duration	977.1	1,036.6	982.9	1,029.4	1,158.6	995.7	1,010.7	1,094.9	1,144.1	1,093.2

* First treatment episode only

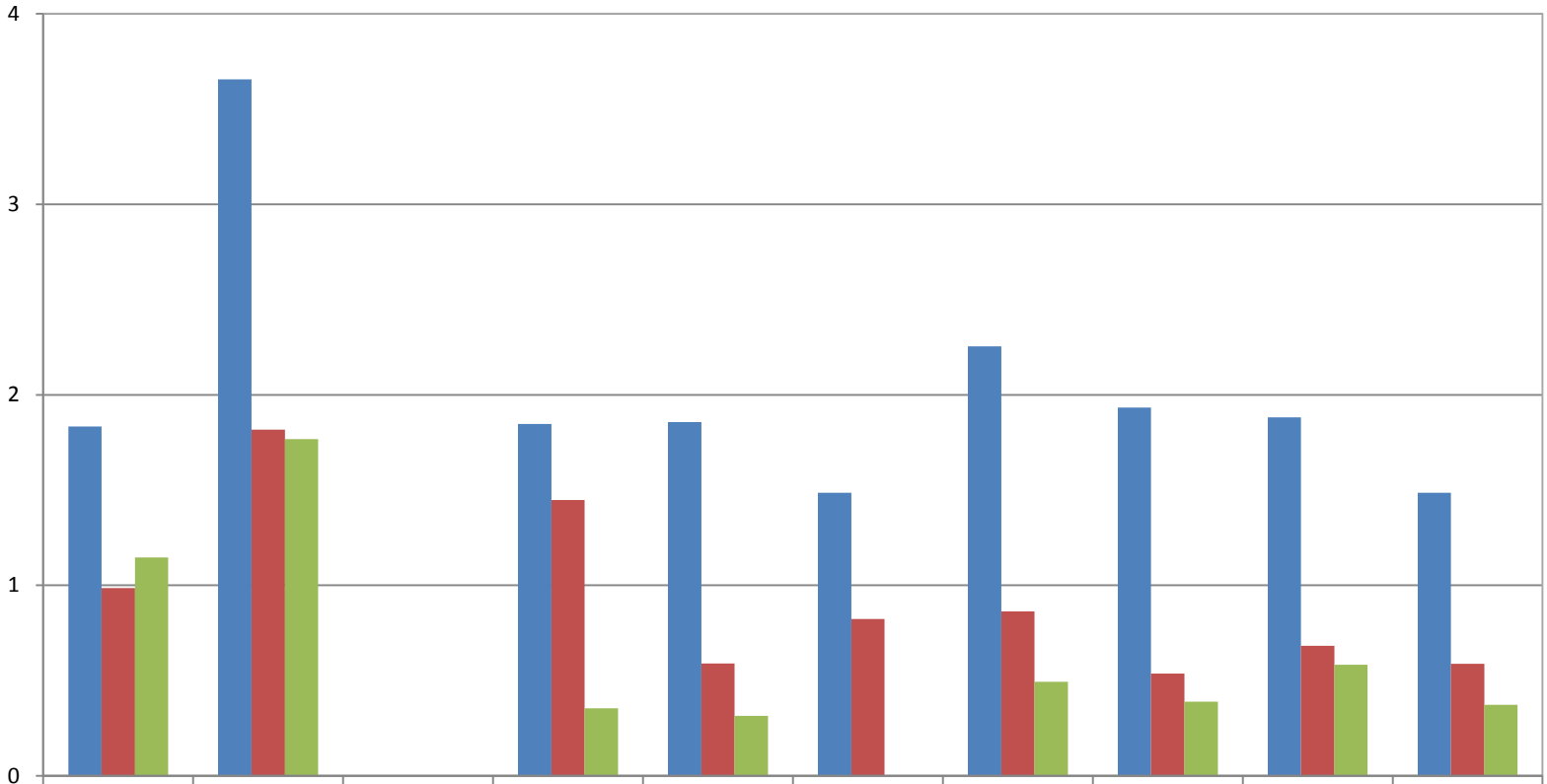
Figure1biv. Number of Days Supplied per Dispensing by Drug Product and Minimum Episode Duration and Blackout Period*



	Olmesartan	Candesartan	Eprosartan	Irbesartan	Losartan	Telmisartan	Valsartan	Hydrochlorothiazide	Atenolol	Amlodipine
0-Day Minimum Episode Duration	37.8	40.1	41.3	41.1	52.7	37.4	38.4	49.8	54.3	49.7
365-Day Minimum Episode Duration	39.6	40.9	42.3	42.3	61.0	38.9	39.5	56.9	60.3	54.9
730-Day Minimum Episode Duration	41.0	42.2	45.2	44.3	69.0	39.6	40.6	62.6	65.7	60.4

* First treatment episode only

Figure1bv. Number of New Events per 1 Million Days at Risk by Drug Product and Minimum Episode Duration and Blackout Period*



	Olmesartan	Candesartan	Eprosartan	Irbesartan	Losartan	Telmisartan	Valsartan	Hydrochlorothiazide	Atenolol	Amlodipine
0-Day Minimum Episode Duration	1.8	3.7	0.0	1.8	1.9	1.5	2.3	1.9	1.9	1.5
365-Day Minimum Episode Duration	1.0	1.8	0.0	1.4	0.6	0.8	0.9	0.5	0.7	0.6
730-Day Minimum Episode Duration	1.1	1.8	0.0	0.4	0.3	0.0	0.5	0.4	0.6	0.4

* First treatment episode only

Table 2a. Summary of Incident Drug Use and Outcomes in the MSDD between January 1, 2007 to December 31, 2011, by Drug Product, Minimum Episode Duration and Blackout Period, and Age Group

	New Users	Dispensings	Total Days Supplied	New Episodes	Days at Risk	Events	Eligible Members	Member-Days
Olmesartan								
0-Day Min Episode Duration and Blackout Period								
18-44 years	25,162	78,165	2,660,869	25,162	2,700,710	5	20,559,201	12,920,040,663
45 to 64 years	84,416	333,251	12,402,335	84,416	12,469,301	20	14,826,888	11,344,008,387
65+ years	41,883	163,582	6,660,647	41,883	6,646,705	15	5,367,443	4,596,315,565
365-Day Min Episode Duration and Blackout Period								
18-44 years	1,597	26,828	954,881	1,597	975,822	2	13,329,636	11,694,677,030
45 to 64 years	9,104	151,180	5,890,646	9,104	5,966,420	6	11,268,134	10,737,482,104
65+ years	5,049	75,384	3,188,193	5,049	3,207,345	2	4,312,109	4,389,538,465
730-Day Min Episode Duration and Blackout Period								
18-44 years	371	9,900	356,520	371	362,756	0	8,137,523	9,169,239,312
45 to 64 years	2,671	65,674	2,649,651	2,671	2,678,087	4	7,860,861	9,165,084,137
65+ years	1,377	29,616	1,311,546	1,377	1,317,680	1	3,193,186	3,858,504,985
Candesartan								
0-Day Min Episode Duration and Blackout Period								
18-44 years	1,677	5,435	195,535	1,677	196,120	3	20,581,695	12,945,680,086
45 to 64 years	7,263	31,392	1,239,744	7,263	1,235,459	5	14,919,441	11,456,673,103
65+ years	4,827	18,121	766,731	4,827	757,203	0	5,417,493	4,663,904,790
365-Day Min Episode Duration and Blackout Period								
18-44 years	124	2,153	80,265	124	81,228	1	13,355,335	11,719,318,706
45 to 64 years	922	16,082	649,085	922	654,802	1	11,367,167	10,844,978,657
65+ years	544	8,460	362,651	544	364,246	0	4,368,672	4,454,331,551
730-Day Min Episode Duration and Blackout Period								
18-44 years	44	1,111	41,565	44	41,491	1	8,160,437	9,193,413,808
45 to 64 years	328	8,297	346,653	328	348,861	0	7,947,784	9,270,174,573
65+ years	171	3,945	174,645	171	175,131	0	3,249,448	3,924,314,364

Table 2a cont. Summary of Incident Drug Use and Outcomes in the MSDD between January 1, 2007 to December 31, 2011, by Drug Product, Minimum Episode Duration and Blackout Period, and Age Group

	New Users	Dispensings	Total Days Supplied	New Episodes	Days at Risk	Events	Eligible Members	Member-Days
Eprosartan								
0-Day Min Episode Duration and Blackout Period								
18-44 years	37	122	4,101	37	4,113	0	20,584,847	12,948,795,952
45 to 64 years	163	618	26,125	163	26,159	0	14,939,927	11,478,929,341
65+ years	58	245	10,475	58	10,583	0	5,430,777	4,680,253,468
365-Day Min Episode Duration and Blackout Period								
18-44 years	4	51	1,806	4	1,843	0	13,358,593	11,722,251,495
45 to 64 years	20	311	13,862	20	13,993	0	11,388,109	10,866,421,250
65+ years	10	165	6,640	10	6,753	0	4,384,479	4,470,436,807
730-Day Min Episode Duration and Blackout Period								
18-44 years	0	0	0	0	0	0	8,163,019	9,196,147,259
45 to 64 years	8	158	7,712	8	7,829	0	7,963,677	9,289,857,041
65+ years	3	81	3,100	3	3,130	0	3,261,411	3,939,159,979
Irbesartan								
0-Day Min Episode Duration and Blackout Period								
18-44 years	7,516	25,980	942,972	7,516	948,252	1	20,572,865	12,936,698,341
45 to 64 years	30,606	133,530	5,411,358	30,606	5,384,242	12	14,860,025	11,396,502,322
65+ years	21,073	92,294	3,997,139	21,073	3,953,216	6	5,369,688	4,610,817,159
365-Day Min Episode Duration and Blackout Period								
18-44 years	627	10,782	403,818	627	409,955	1	13,345,781	11,710,745,896
45 to 64 years	4,212	69,899	2,901,911	4,212	2,923,541	5	11,307,678	10,787,192,657
65+ years	3,113	49,175	2,185,939	3,113	2,189,817	2	4,318,297	4,402,923,745
730-Day Min Episode Duration and Blackout Period								
18-44 years	175	4,596	177,761	175	179,666	0	8,152,604	9,185,275,584
45 to 64 years	1,441	34,358	1,479,534	1,441	1,488,874	1	7,904,556	9,217,635,164
65+ years	1,105	24,241	1,143,775	1,105	1,144,567	0	3,210,770	3,876,525,367

Table 2a cont. Summary of Incident Drug Use and Outcomes in the MSDD between January 1, 2007 to December 31, 2011, by Drug Product, Minimum Episode Duration and Blackout Period, and Age Group

	New Users	Dispensings	Total Days Supplied	New Episodes	Days at Risk	Events	Eligible Members	Member-Days
Losartan								
0-Day Min Episode Duration and Blackout Period								
18-44 years	40,259	143,202	6,279,568	40,259	6,220,476	22	20,555,470	12,911,501,130
45 to 64 years	203,177	869,910	43,684,608	203,177	42,809,780	83	14,744,100	11,213,545,229
65+ years	197,147	818,188	46,628,532	197,147	44,691,843	69	5,258,461	4,414,126,095
365-Day Min Episode Duration and Blackout Period								
18-44 years	4,036	55,022	2,764,179	4,036	2,759,932	1	13,325,230	11,685,988,923
45 to 64 years	31,970	411,564	23,830,098	31,970	23,566,503	16	11,182,440	10,607,728,063
65+ years	33,411	379,966	25,028,944	33,411	24,473,463	13	4,201,465	4,212,560,498
730-Day Min Episode Duration and Blackout Period								
18-44 years	1,237	23,782	1,362,990	1,237	1,355,545	0	8,131,238	9,159,739,426
45 to 64 years	11,802	206,670	13,564,429	11,802	13,383,800	6	7,777,198	9,035,282,832
65+ years	12,006	189,886	14,090,483	12,006	13,843,191	3	3,088,109	3,682,106,511
Telmisartan								
0-Day Min Episode Duration and Blackout Period								
18-44 years	7,053	21,158	706,689	7,053	716,012	2	20,578,066	12,940,533,373
45 to 64 years	23,743	90,674	3,313,179	23,743	3,330,482	5	14,910,274	11,440,570,823
65+ years	9,173	31,546	1,344,829	9,173	1,337,127	1	5,417,776	4,662,180,625
365-Day Min Episode Duration and Blackout Period								
18-44 years	394	7,100	244,686	394	250,338	0	13,350,656	11,714,480,345
45 to 64 years	2,379	41,079	1,553,138	2,379	1,574,356	2	11,355,308	10,830,192,263
65+ years	904	13,461	597,357	904	601,418	0	4,369,781	4,453,459,101
730-Day Min Episode Duration and Blackout Period								
18-44 years	109	3,061	105,073	109	107,102	0	8,155,721	9,188,393,979
45 to 64 years	747	19,057	741,817	747	750,631	0	7,934,569	9,254,023,356
65+ years	268	6,157	272,258	268	273,748	0	3,246,929	3,921,367,744

Table 2a cont. Summary of Incident Drug Use and Outcomes in the MSDD between January 1, 2007 to December 31, 2011, by Drug Product, Minimum Episode Duration and Blackout Period, and Age Group

	New Users	Dispensings	Total Days Supplied	New Episodes	Days at Risk	Events	Eligible Members	Member-Days
Valsartan								
0-Day Min Episode Duration and Blackout Period								
18-44 years	43,675	169,762	5,809,276	43,675	5,885,507	17	20,526,503	12,887,952,558
45 to 64 years	156,933	778,251	29,316,809	156,933	29,377,348	61	14,629,243	11,145,155,723
65+ years	89,697	416,876	17,249,320	89,697	17,086,886	40	5,247,049	4,468,018,366
365-Day Min Episode Duration and Blackout Period								
18-44 years	4,056	76,048	2,680,550	4,056	2,733,769	2	13,295,609	11,663,409,422
45 to 64 years	24,470	431,044	16,694,134	24,470	16,862,662	12	11,077,337	10,542,902,802
65+ years	13,862	219,331	9,351,035	13,862	9,361,679	11	4,192,427	4,265,810,982
730-Day Min Episode Duration and Blackout Period								
18-44 years	1,286	36,278	1,287,372	1,286	1,310,688	1	8,109,545	9,140,320,173
45 to 64 years	8,229	209,676	8,338,817	8,229	8,415,897	3	7,714,690	8,988,860,116
65+ years	4,410	100,908	4,447,449	4,410	4,451,210	3	3,097,344	3,742,755,641
Hydrochlorothiazide								
0-Day Min Episode Duration and Blackout Period								
18-44 years	176,234	461,382	19,413,708	176,234	19,320,767	51	20,478,685	12,775,856,231
45 to 64 years	456,703	1,605,043	77,587,439	456,703	76,676,723	143	14,465,783	10,755,555,399
65+ years	280,626	1,032,152	57,379,997	280,626	56,106,308	100	5,046,720	4,075,668,761
365-Day Min Episode Duration and Blackout Period								
18-44 years	10,499	146,469	7,057,984	10,499	7,078,399	4	13,218,314	11,560,965,703
45 to 64 years	56,360	743,183	40,868,410	56,360	40,639,009	23	10,846,714	10,180,637,841
65+ years	44,586	529,919	32,855,559	44,586	32,415,872	16	3,955,782	3,893,175,972
730-Day Min Episode Duration and Blackout Period								
18-44 years	3,203	64,202	3,409,236	3,203	3,401,364	1	8,023,236	9,028,635,030
45 to 64 years	20,330	366,541	22,366,608	20,330	22,169,352	7	7,454,700	8,599,242,060
65+ years	16,671	271,906	18,242,024	16,671	17,985,835	9	2,844,389	3,356,589,492

Table 2a cont. Summary of Incident Drug Use and Outcomes in the MSDD between January 1, 2007 to December 31, 2011, by Drug Product, Minimum Episode Duration and Blackout Period, and Age Group

	New Users	Dispensings	Total Days Supplied	New Episodes	Days at Risk	Events	Eligible Members	Member-Days
Atenolol								
0-Day Min Episode Duration and Blackout Period								
18-44 years	91,378	286,677	13,172,379	91,378	13,039,498	42	20,494,392	12,826,117,279
45 to 64 years	224,081	916,137	48,677,511	224,081	47,922,648	92	14,475,405	10,871,318,880
65+ years	137,526	599,981	35,958,071	137,526	35,180,679	47	4,982,576	4,069,203,063
365-Day Min Episode Duration and Blackout Period								
18-44 years	8,581	121,643	6,255,237	8,581	6,234,600	4	13,255,536	11,607,040,251
45 to 64 years	37,996	511,244	30,193,812	37,996	29,889,566	25	10,914,000	10,283,206,768
65+ years	29,716	373,834	24,226,732	29,716	23,864,569	12	3,932,842	3,879,918,783
730-Day Min Episode Duration and Blackout Period								
18-44 years	3,151	61,223	3,499,297	3,151	3,470,179	3	8,067,270	9,081,286,941
45 to 64 years	16,539	293,539	19,008,936	16,539	18,771,934	13	7,544,450	8,722,772,140
65+ years	13,741	227,391	15,741,792	13,741	15,500,649	6	2,852,758	3,363,064,768
Amlodipine								
0-Day Min Episode Duration and Blackout Period								
18-44 years	118,884	443,598	17,107,183	118,884	17,104,506	20	20,490,150	12,832,856,729
45 to 64 years	449,243	2,238,863	102,740,489	449,243	101,650,381	161	14,441,300	10,857,267,040
65+ years	423,057	2,284,256	126,896,270	423,057	124,268,330	180	4,983,299	4,033,705,409
365-Day Min Episode Duration and Blackout Period								
18-44 years	11,836	192,726	8,022,374	11,836	8,060,632	2	13,251,239	11,610,705,391
45 to 64 years	86,143	1,289,148	64,757,389	86,143	64,368,423	41	10,880,464	10,269,493,377
65+ years	113,225	1,489,094	90,265,334	113,225	88,870,116	52	3,923,179	3,852,947,510
730-Day Min Episode Duration and Blackout Period								
18-44 years	3,890	90,189	4,004,848	3,890	4,008,912	1	8,061,079	9,083,436,445
45 to 64 years	35,480	697,035	38,388,343	35,480	38,056,574	19	7,495,296	8,693,531,486
65+ years	52,337	873,430	57,858,149	52,337	56,930,573	17	2,786,296	3,297,730,634

Table 2b. Rates of Incident Drug Use and Outcomes in the MSDD between January 1, 2007 to December 31, 2011, by Drug Product, Minimum Episode Duration and Blackout Period, and Age Group

	New Users/ 1K Eligible Members	Dispensings/User	Days Supplied/User	Days Supplied/Dispensing	New Events/ 1M Days at Risk
Olmesartan					
0-Day Min Episode Duration/Blackout					
18-44 years	1.2	3.1	105.7	34.0	1.9
45 to 64 years	5.7	3.9	146.9	37.2	1.6
65+ years	7.8	3.9	159.0	40.7	2.3
365-Day Min Episode Duration/Blackout					
18-44 years	0.1	16.8	597.9	35.6	2.0
45 to 64 years	0.8	16.6	647.0	39.0	1.0
65+ years	1.2	14.9	631.5	42.3	0.6
730-Day Min Episode Duration/Blackout					
18-44 years	0.0	26.7	961.0	36.0	0.0
45 to 64 years	0.3	24.6	992.0	40.3	1.5
65+ years	0.4	21.5	952.5	44.3	0.8
Candesartan					
0-Day Min Episode Duration/Blackout					
18-44 years	0.1	3.2	116.6	36.0	15.3
45 to 64 years	0.5	4.3	170.7	39.5	4.0
65+ years	0.9	3.8	158.8	42.3	0.0
365-Day Min Episode Duration/Blackout					
18-44 years	0.0	17.4	647.3	37.3	12.3
45 to 64 years	0.1	17.4	704.0	40.4	1.5
65+ years	0.1	15.6	666.6	42.9	0.0
730-Day Min Episode Duration/Blackout					
18-44 years	0.0	25.3	944.7	37.4	24.1
45 to 64 years	0.0	25.3	1,056.9	41.8	0.0
65+ years	0.1	23.1	1,021.3	44.3	0.0
Eprosartan					
0-Day Min Episode Duration/Blackout					
18-44 years	0.0	3.3	110.8	33.6	0.0
45 to 64 years	0.0	3.8	160.3	42.3	0.0
65+ years	0.0	4.2	180.6	42.8	0.0
365-Day Min Episode Duration/Blackout					
18-44 years	0.0	12.8	451.5	35.4	0.0
45 to 64 years	0.0	15.6	693.1	44.6	0.0
65+ years	0.0	16.5	664.0	40.2	0.0
730-Day Min Episode Duration/Blackout					
18-44 years	0.0	-	-	-	-
45 to 64 years	0.0	19.8	964.0	48.8	0.0
65+ years	0.0	27.0	1,033.3	38.3	0.0
Irbesartan					
0-Day Min Episode Duration/Blackout					
18-44 years	0.4	3.5	125.5	36.3	1.1
45 to 64 years	2.1	4.4	176.8	40.5	2.2
65+ years	3.9	4.4	189.7	43.3	1.5
365-Day Min Episode Duration/Blackout					
18-44 years	0.0	17.2	644.0	37.5	2.4
45 to 64 years	0.4	16.6	689.0	41.5	1.7
65+ years	0.7	15.8	702.2	44.5	0.9

Table 2b cont. Rates of Incident Drug Use and Outcomes in the MSDD between January 1, 2007 to December 31, 2011, by Drug Product, Minimum Episode Duration and Blackout Period, and Age Group

	New Users/ 1K Eligible Members	Dispensings/User	Days Supplied/User	Days Supplied/Dispensing	New Events/ 1M Days at Risk
Irbesartan					
730-Day Min Episode Duration/Blackout					
18-44 years	0.0	26.3	1,015.8	38.7	0.0
45 to 64 years	0.2	23.8	1,026.7	43.1	0.7
65+ years	0.3	21.9	1,035.1	47.2	0.0
Losartan					
0-Day Min Episode Duration/Blackout					
18-44 years	2.0	3.6	156.0	43.9	3.5
45 to 64 years	13.8	4.3	215.0	50.2	1.9
65+ years	37.5	4.2	236.5	57.0	1.5
365-Day Min Episode Duration/Blackout					
18-44 years	0.3	13.6	684.9	50.2	0.4
45 to 64 years	2.9	12.9	745.4	57.9	0.7
65+ years	8.0	11.4	749.1	65.9	0.5
730-Day Min Episode Duration/Blackout					
18-44 years	0.2	19.2	1,101.9	57.3	0.0
45 to 64 years	1.5	17.5	1,149.3	65.6	0.4
65+ years	3.9	15.8	1,173.6	74.2	0.2
Telmisartan					
0-Day Min Episode Duration/Blackout					
18-44 years	0.3	3.0	100.2	33.4	2.8
45 to 64 years	1.6	3.8	139.5	36.5	1.5
65+ years	1.7	3.4	146.6	42.6	0.7
365 Min Episode Duration/Blackout					
18-44 years	0.0	18.0	621.0	34.5	0.0
45 to 64 years	0.2	17.3	652.9	37.8	1.3
65+ years	0.2	14.9	660.8	44.4	0.0
730-Day Min Episode Duration/Blackout					
18-44 years	0.0	28.1	964.0	34.3	0.0
45 to 64 years	0.1	25.5	993.1	38.9	0.0
65+ years	0.1	23.0	1,015.9	44.2	0.0
Valsartan					
0-Day Min Episode Duration/Blackout					
18-44 years	2.1	3.9	133.0	34.2	2.9
45 to 64 years	10.7	5.0	186.8	37.7	2.1
65+ years	17.1	4.6	192.3	41.4	2.3
365-Day Min Episode Duration/Blackout					
18-44 years	0.3	18.7	660.9	35.2	0.7
45 to 64 years	2.2	17.6	682.2	38.7	0.7
65+ years	3.3	15.8	674.6	42.6	1.2
730-Day Min Episode Duration/Blackout					
18-44 years	0.2	28.2	1,001.1	35.5	0.8
45 to 64 years	1.1	25.5	1,013.3	39.8	0.4
65+ years	1.4	22.9	1,008.5	44.1	0.7
Hydrochlorothiazide					
0-Day Min Episode Duration/Blackout					
18-44 years	8.6	2.6	110.2	42.1	2.6
45 to 64 years	31.6	3.5	169.9	48.3	1.9
65+ years	55.6	3.7	204.5	55.6	1.8
365-Day Min Episode Duration/Blackout					
18-44 years	0.8	14.0	672.3	48.2	0.6
45 to 64 years	5.2	13.2	725.1	55.0	0.6
65+ years	11.3	11.9	736.9	62.0	0.5

Table 2b cont. Rates of Incident Drug Use and Outcomes in the MSDD between January 1, 2007 to December 31, 2011, by Drug Product, Minimum Episode Duration and Blackout Period, and Age Group

	New Users/ 1K Eligible Members	Dispensings/User	Days Supplied/User	Days Supplied/Dispensing	New Events/ 1M Days at Risk
Hydrochlorothiazide					
730-Day Min Episode Duration/Blackout					
18-44 years	0.4	20.0	1,064.4	53.1	0.3
45 to 64 years	2.7	18.0	1,100.2	61.0	0.3
65+ years	5.9	16.3	1,094.2	67.1	0.5
Atenolol					
0-Day Min Episode Duration/Blackout					
18-44 years	4.5	3.1	144.2	45.9	3.2
45 to 64 years	15.5	4.1	217.2	53.1	1.9
65+ years	27.6	4.4	261.5	59.9	1.3
365-Day Min Episode Duration/Blackout					
18-44 years	0.6	14.2	729.0	51.4	0.6
45 to 64 years	3.5	13.5	794.7	59.1	0.8
65+ years	7.6	12.6	815.3	64.8	0.5
730-Day Min Episode Duration/Blackout					
18-44 years	0.4	19.4	1,110.5	57.2	0.9
45 to 64 years	2.2	17.7	1,149.3	64.8	0.7
65+ years	4.8	16.5	1,145.6	69.2	0.4
Amlodipine					
0-Day Min Episode Duration/Blackout					
18-44 years	5.8	3.7	143.9	38.6	1.2
45 to 64 years	31.1	5.0	228.7	45.9	1.6
65+ years	84.9	5.4	300.0	55.6	1.4
365-Day Min Episode Duration/Blackout					
18-44 years	0.9	16.3	677.8	41.6	0.2
45 to 64 years	7.9	15.0	751.7	50.2	0.6
65+ years	28.9	13.2	797.2	60.6	0.6
730-Day Min Episode Duration/Blackout					
18-44 years	0.5	23.2	1,029.5	44.4	0.2
45 to 64 years	4.7	19.6	1,082.0	55.1	0.5
65+ years	18.8	16.7	1,105.5	66.2	0.3

Mini-Sentinel

Table 3a. Summary of Incident Drug Use and Outcomes in the MSDD between January 1, 2007 to December 31, 2011, by Drug Product, Minimum Episode Duration and Blackout Period, and Sex

	New Users	Dispensings	Total Days Supplied	New Episodes	Days at Risk	Events	Eligible Members	Member-Days
Olmesartan								
0-Day Min Episode Duration and Blackout Period								
Female	75,911	287,797	10,925,235	75,911	10,958,473	32	19,959,178	15,123,750,465
Male	75,432	286,779	10,783,603	75,432	10,842,945	8	18,387,565	13,707,797,461
Unknown	118	422	15,013	118	15,298	0	39,085	28,816,689
365-Day Min Episode Duration and Blackout Period								
Female	7,905	126,908	5,053,228	7,905	5,103,731	8	13,947,663	14,072,116,170
Male	7,833	126,298	4,973,652	7,833	5,038,898	2	12,723,778	12,723,290,109
Unknown	12	186	6,840	12	6,958	0	26,732	26,291,320
730-Day Min Episode Duration and Blackout Period								
Female	2,207	52,400	2,157,659	2,207	2,175,550	5	9,080,629	11,674,470,027
Male	2,210	52,718	2,157,898	2,210	2,180,824	0	8,206,098	10,497,224,098
Unknown	2	72	2,160	2	2,149	0	16,926	21,134,309
Candesartan								
0-Day Min Episode Duration and Blackout Period								
Female	7,124	27,250	1,099,803	7,124	1,090,922	5	20,031,530	15,227,613,343
Male	6,627	27,575	1,097,152	6,627	1,092,772	3	18,460,519	13,809,707,836
Unknown	16	123	5,055	16	5,088	0	39,131	28,936,800
365-Day Min Episode Duration and Blackout Period								
Female	775	12,672	529,403	775	532,372	2	14,029,752	14,171,500,761
Male	810	13,943	558,998	810	564,343	0	12,804,930	12,820,727,331
Unknown	5	80	3,600	5	3,561	0	26,791	26,400,822
730-Day Min Episode Duration and Blackout Period								
Female	263	6,248	271,247	263	271,493	1	9,156,380	11,773,346,030
Male	277	7,047	289,096	277	291,438	0	8,278,696	10,593,298,928
Unknown	3	58	2,520	3	2,552	0	17,003	21,257,787

Table 3a cont. Summary of Incident Drug Use and Outcomes in the MSDD between January 1, 2007 to December 31, 2011, by Drug Product, Minimum Episode Duration and Blackout Period, and Sex

	New Users	Dispensings	Total Days Supplied	New Episodes	Days at Risk	Events	Eligible Members	Member-Days
Eprosartan								
0-Day Min Episode Duration and Blackout Period								
Female	128	521	21,325	128	21,462	0	20,048,385	15,249,078,195
Male	130	464	19,376	130	19,393	0	18,476,539	13,829,923,932
Unknown	0	0	0	0	0	0	39,148	28,976,634
365-Day Min Episode Duration and Blackout Period								
Female	21	317	13,416	21	13,595	0	14,048,552	14,192,384,410
Male	13	210	8,892	13	8,994	0	12,822,393	12,840,286,179
Unknown	0	0	0	0	0	0	26,817	26,438,963
730-Day Min Episode Duration and Blackout Period								
Female	7	134	6,570	7	6,644	0	9,170,359	11,792,540,109
Male	4	105	4,242	4	4,315	0	8,291,775	10,611,329,822
Unknown	0	0	0	0	0	0	17,027	21,294,348
Irbesartan								
0-Day Min Episode Duration and Blackout Period								
Female	31,086	134,233	5,505,465	31,086	5,467,551	16	19,976,729	15,162,750,618
Male	28,080	117,451	4,842,029	28,080	4,814,125	3	18,410,518	13,752,372,770
Unknown	29	120	3,975	29	4,034	0	39,106	28,894,434
365-Day Min Episode Duration and Blackout Period								
Female	4,280	70,569	2,986,686	4,280	3,000,652	7	13,972,457	14,109,035,243
Male	3,668	59,223	2,502,942	3,668	2,520,591	1	12,753,140	12,765,467,502
Unknown	4	64	2,040	4	2,070	0	26,762	26,359,553
730-Day Min Episode Duration and Blackout Period								
Female	1,486	34,609	1,539,971	1,486	1,544,962	0	9,113,680	11,715,562,369
Male	1,235	28,586	1,261,099	1,235	1,268,145	1	8,241,001	10,542,659,569
Unknown	0	0	0	0	0	0	16,974	21,214,177

Table 3a cont. Summary of Incident Drug Use and Outcomes in the MSDD between January 1, 2007 to December 31, 2011, by Drug Product, Minimum Episode Duration and Blackout Period, and Sex

	New Users	Dispensings	Total Days Supplied	New Episodes	Days at Risk	Events	Eligible Members	Member-Days
Losartan								
0-Day Min Episode Duration and Blackout Period								
Female	244,966	1,025,106	54,299,189	244,966	52,595,703	109	19,859,766	14,930,910,185
Male	195,434	805,404	42,262,126	195,434	41,095,279	65	18,322,258	13,579,509,585
Unknown	183	790	31,393	183	31,117	0	39,032	28,752,684
365-Day Min Episode Duration and Blackout Period								
Female	39,143	477,220	29,304,605	39,143	28,803,117	19	13,844,472	13,883,337,768
Male	30,253	368,991	22,305,213	30,253	21,983,429	11	12,655,600	12,596,719,548
Unknown	21	341	13,403	21	13,352	0	26,676	26,220,168
730-Day Min Episode Duration and Blackout Period								
Female	14,279	239,022	16,614,486	14,279	16,356,420	6	8,980,859	11,485,358,729
Male	10,760	181,167	12,397,839	10,760	12,220,577	3	8,140,351	10,370,693,733
Unknown	6	149	5,577	6	5,539	0	16,894	21,076,307
Telmisartan								
0-Day Min Episode Duration and Blackout Period								
Female	20,211	72,121	2,699,946	20,211	2,707,473	6	20,027,438	15,216,661,217
Male	19,724	71,131	2,660,241	19,724	2,671,577	2	18,454,675	13,797,698,333
Unknown	34	126	4,510	34	4,571	0	39,135	28,925,271
365-Day Min Episode Duration and Blackout Period								
Female	1,832	30,775	1,204,166	1,832	1,218,592	2	14,024,078	14,161,865,628
Male	1,842	30,795	1,188,465	1,842	1,204,932	0	12,797,422	12,809,875,166
Unknown	3	70	2,550	3	2,588	0	26,787	26,390,915
730-Day Min Episode Duration and Blackout Period								
Female	570	14,348	574,479	570	580,174	0	9,147,668	11,761,512,817
Male	552	13,877	542,719	552	549,336	0	8,269,560	10,581,029,150
Unknown	2	50	1,950	2	1,971	0	16,994	21,243,112

Table 3a cont. Summary of Incident Drug Use and Outcomes in the MSDD between January 1, 2007 to December 31, 2011, by Drug Product, Minimum Episode Duration and Blackout Period, and Sex

	New Users	Dispensings	Total Days Supplied	New Episodes	Days at Risk	Events	Eligible Members	Member-Days
Valsartan								
0-Day Min Episode Duration and Blackout Period								
Female	150,588	708,657	27,171,726	150,588	27,114,855	80	19,789,473	14,930,884,894
Male	139,462	654,741	25,145,992	139,462	25,176,700	38	18,241,536	13,541,726,996
Unknown	255	1,491	57,687	255	58,186	0	38,912	28,514,757
365-Day Min Episode Duration and Blackout Period								
Female	21,922	378,475	14,964,713	21,922	15,060,378	17	13,781,013	13,884,924,134
Male	20,410	346,963	13,722,582	20,410	13,858,899	8	12,579,084	12,561,205,781
Unknown	56	985	38,424	56	38,833	0	26,516	25,993,291
730-Day Min Episode Duration and Blackout Period								
Female	7,299	182,076	7,412,300	7,299	7,457,420	6	8,951,682	11,502,251,513
Male	6,607	164,288	6,642,378	6,607	6,701,087	1	8,094,908	10,348,837,786
Unknown	19	498	18,960	19	19,288	0	16,736	20,846,631
Hydrochlorothiazide								
0-Day Min Episode Duration and Blackout Period								
Female	549,131	1,808,670	89,590,106	549,131	88,242,263	209	19,552,469	14,344,203,369
Male	363,927	1,288,231	64,727,728	363,927	63,797,514	85	18,150,860	13,234,571,135
Unknown	505	1,676	63,310	505	64,021	0	38,869	28,305,887
365-Day Min Episode Duration and Blackout Period								
Female	63,979	815,693	46,576,529	63,979	46,168,000	29	13,456,883	13,333,689,173
Male	47,429	603,258	34,179,114	47,429	33,938,729	14	12,432,858	12,275,267,239
Unknown	37	620	26,310	37	26,551	0	26,432	25,823,104
730-Day Min Episode Duration and Blackout Period								
Female	23,246	405,434	25,558,556	23,246	25,269,861	13	8,606,127	10,923,968,776
Male	16,944	296,891	18,444,162	16,944	18,271,627	4	7,922,570	10,039,862,361
Unknown	14	324	15,150	14	15,063	0	16,595	20,635,445

Table 3a cont. Summary of Incident Drug Use and Outcomes in the MSDD between January 1, 2007 to December 31, 2011, by Drug Product, Minimum Episode Duration and Blackout Period, and Sex

	New Users	Dispensings	Total Days Supplied	New Episodes	Days at Risk	Events	Eligible Members	Member-Days
Atenolol								
0-Day Min Episode Duration and Blackout Period								
Female	248,497	995,661	53,744,488	248,497	52,802,189	131	19,562,666	14,509,603,253
Male	204,286	806,292	44,033,102	204,286	43,310,131	50	18,082,125	13,228,500,370
Unknown	202	842	30,371	202	30,505	0	38,907	28,535,599
365-Day Min Episode Duration and Blackout Period								
Female	41,904	558,340	33,651,664	41,904	33,241,986	35	13,545,315	13,482,369,565
Male	34,363	447,955	27,007,982	34,363	26,730,453	6	12,411,007	12,261,774,136
Unknown	26	426	16,135	26	16,296	0	26,529	26,022,101
730-Day Min Episode Duration and Blackout Period								
Female	18,627	325,684	21,429,539	18,627	21,132,041	20	8,722,699	11,099,202,644
Male	14,797	256,276	16,812,836	14,797	16,603,038	2	7,928,265	10,047,043,548
Unknown	7	193	7,650	7	7,683	0	16,754	20,877,657
Amlodipine								
0-Day Min Episode Duration and Blackout Period								
Female	508,895	2,506,717	125,701,247	508,895	123,677,249	237	19,608,840	14,554,551,868
Male	481,742	2,457,274	120,938,012	481,742	119,240,712	124	17,997,213	13,141,084,272
Unknown	547	2,726	104,683	547	105,256	0	38,764	28,193,038
365-Day Min Episode Duration and Blackout Period								
Female	107,372	1,500,796	83,321,950	107,372	82,326,984	57	13,579,521	13,529,317,588
Male	103,747	1,468,703	79,665,166	103,747	78,913,791	38	12,326,480	12,178,141,337
Unknown	85	1,469	57,981	85	58,396	0	26,330	25,687,353
730-Day Min Episode Duration and Blackout Period								
Female	47,112	844,327	51,601,574	47,112	50,904,257	21	8,702,617	11,108,438,619
Male	44,570	815,715	48,623,661	44,570	48,065,570	16	7,827,305	9,945,741,361
Unknown	25	612	26,105	25	26,232	0	16,520	20,518,585

Table 3b. Rates of Incident Drug Use and Outcomes in the MSDD between January 1, 2007 to December 31, 2011, by Drug Product, Minimum Episode Duration and Blackout Period, and Sex

	New Users/ 1K Eligible Members	Dispensings/User	Days Supplied/User	Days Supplied/ Dispensing	New Events/ 1M Days at Risk
Olmesartan					
0-Day Min Episode Duration and Blackout Period					
Female	3.8	3.8	143.9	38.0	2.9
Male	4.1	3.8	143.0	37.6	0.7
Unknown	3.0	3.6	127.2	35.6	0.0
365-Day Min Episode Duration and Blackout Period					
Female	0.6	16.1	639.2	39.8	1.6
Male	0.6	16.1	635.0	39.4	0.4
Unknown	0.4	15.5	570.0	36.8	0.0
730-Day Min Episode Duration and Blackout Period					
Female	0.2	23.7	977.6	41.2	2.3
Male	0.3	23.9	976.4	40.9	0.0
Unknown	0.1	36.0	1,080.0	30.0	0.0
Candesartan					
0-Day Min Episode Duration and Blackout Period					
Female	0.4	3.8	154.4	40.4	4.6
Male	0.4	4.2	165.6	39.8	2.7
Unknown	0.4	7.7	315.9	41.1	0.0
365-Day Min Episode Duration and Blackout Period					
Female	0.1	16.4	683.1	41.8	3.8
Male	0.1	17.2	690.1	40.1	0.0
Unknown	0.2	16.0	720.0	45.0	0.0
730-Day Min Episode Duration and Blackout Period					
Female	0.0	23.8	1,031.4	43.4	3.7
Male	0.0	25.4	1,043.7	41.0	0.0
Unknown	0.2	19.3	840.0	43.4	0.0
Eprosartan					
0-Day Min Episode Duration and Blackout Period					
Female	0.0	4.1	166.6	40.9	0.0
Male	0.0	3.6	149.0	41.8	0.0
Unknown	0.0	-	-	-	-
365-Day Min Episode Duration and Blackout Period					
Female	0.0	15.1	638.9	42.3	0.0
Male	0.0	16.2	684.0	42.3	0.0
Unknown	0.0	-	-	-	-
730-Day Min Episode Duration and Blackout Period					
Female	0.0	19.1	938.6	49.0	0.0
Male	0.0	26.3	1,060.5	40.4	0.0
Unknown	0.0	-	-	-	-
Irbesartan					
0-Day Min Episode Duration and Blackout Period					
Female	1.6	4.3	177.1	41.0	2.9
Male	1.5	4.2	172.4	41.2	0.6
Unknown	0.7	4.1	137.1	33.1	0.0
365-Day Min Episode Duration and Blackout Period					
Female	0.3	16.5	697.8	42.3	2.3
Male	0.3	16.1	682.4	42.3	0.4
Unknown	0.1	16.0	510.0	31.9	0.0

Table 3b cont. Rates of Incident Drug Use and Outcomes in the MSDD between January 1, 2007 to December 31, 2011, by Drug Product, Minimum Episode Duration and Blackout Period, and Sex

	New Users/ 1K Eligible Members	Dispensings/User	Days Supplied/User	Days Supplied/ Dispensing	New Events/ 1M Days at Risk
Irbesartan					
730-Day Min Episode Duration and Blackout Period					
Female	0.2	23.3	1,036.3	44.5	0.0
Male	0.1	23.1	1,021.1	44.1	0.8
Unknown	0.0	-	-	-	-
Losartan					
0-Day Min Episode Duration and Blackout Period					
Female	12.3	4.2	221.7	53.0	2.1
Male	10.7	4.1	216.2	52.5	1.6
Unknown	4.7	4.3	171.5	39.7	0.0
365-Day Min Episode Duration and Blackout Period					
Female	2.8	12.2	748.7	61.4	0.7
Male	2.4	12.2	737.3	60.4	0.5
Unknown	0.8	16.2	638.2	39.3	0.0
730-Day Min Episode Duration and Blackout Period					
Female	1.6	16.7	1,163.6	69.5	0.4
Male	1.3	16.8	1,152.2	68.4	0.2
Unknown	0.4	24.8	929.5	37.4	0.0
Telmisartan					
0-Day Min Episode Duration and Blackout Period					
Female	1.0	3.6	133.6	37.4	2.2
Male	1.1	3.6	134.9	37.4	0.7
Unknown	0.9	3.7	132.6	35.8	0.0
365-Day Min Episode Duration and Blackout Period					
Female	0.1	16.8	657.3	39.1	1.6
Male	0.1	16.7	645.2	38.6	0.0
Unknown	0.1	23.3	850.0	36.4	0.0
730-Day Min Episode Duration and Blackout Period					
Female	0.1	25.2	1,007.9	40.0	0.0
Male	0.1	25.1	983.2	39.1	0.0
Unknown	0.1	25.0	975.0	39.0	0.0
Valsartan					
0-Day Min Episode Duration and Blackout Period					
Female	7.6	4.7	180.4	38.3	3.0
Male	7.6	4.7	180.3	38.4	1.5
Unknown	6.6	5.8	226.2	38.7	0.0
365-Day Min Episode Duration and Blackout Period					
Female	1.6	17.3	682.6	39.5	1.1
Male	1.6	17.0	672.3	39.6	0.6
Unknown	2.1	17.6	686.1	39.0	0.0
730-Day Min Episode Duration and Blackout Period					
Female	0.8	24.9	1,015.5	40.7	0.8
Male	0.8	24.9	1,005.4	40.4	0.1
Unknown	1.1	26.2	997.9	38.1	0.0

Table 3b cont. Rates of Incident Drug Use and Outcomes in the MSDD between January 1, 2007 to December 31, 2011, by Drug Product, Minimum Episode Duration and Blackout Period, and Sex

	New Users/ 1K Eligible Members	Dispensings/User	Days Supplied/User	Days Supplied/ Dispensing	New Events/ 1M Days at Risk
Hydrochlorothiazide					
0-Day Min Episode Duration and Blackout Period					
Female	28.1	3.3	163.1	49.5	2.4
Male	20.1	3.5	177.9	50.2	1.3
Unknown	13.0	3.3	125.4	37.8	0.0
365-Day Min Episode Duration and Blackout Period					
Female	4.8	12.7	728.0	57.1	0.6
Male	3.8	12.7	720.6	56.7	0.4
Unknown	1.4	16.8	711.1	42.4	0.0
730-Day Min Episode Duration and Blackout Period					
Female	2.7	17.4	1,099.5	63.0	0.5
Male	2.1	17.5	1,088.5	62.1	0.2
Unknown	0.8	23.1	1,082.1	46.8	0.0
Atenolol					
0-Day Min Episode Duration and Blackout Period					
Female	12.7	4.0	216.3	54.0	2.5
Male	11.3	3.9	215.5	54.6	1.2
Unknown	5.2	4.2	150.4	36.1	0.0
365-Day Min Episode Duration and Blackout Period					
Female	3.1	13.3	803.1	60.3	1.1
Male	2.8	13.0	786.0	60.3	0.2
Unknown	1.0	16.4	620.6	37.9	0.0
730-Day Min Episode Duration and Blackout Period					
Female	2.1	17.5	1,150.5	65.8	0.9
Male	1.9	17.3	1,136.2	65.6	0.1
Unknown	0.4	27.6	1,092.9	39.6	0.0
Amlodipine					
0-Day Min Episode Duration and Blackout Period					
Female	26.0	4.9	247.0	50.1	1.9
Male	26.8	5.1	251.0	49.2	1.0
Unknown	14.1	5.0	191.4	38.4	0.0
365-Day Min Episode Duration and Blackout Period					
Female	7.9	14.0	776.0	55.5	0.7
Male	8.4	14.2	767.9	54.2	0.5
Unknown	3.2	17.3	682.1	39.5	0.0
730-Day Min Episode Duration and Blackout Period					
Female	5.4	17.9	1,095.3	61.1	0.4
Male	5.7	18.3	1,091.0	59.6	0.3
Unknown	1.5	24.5	1,044.2	42.7	0.0

Table 4a. Summary of Incident Drug Use and Outcomes in the MSDD between January 1, 2007 to December 31, 2011, by Drug Product, Minimum Episode Duration and Blackout Period, and Year

	New Users	Dispensings	Total Days Supplied	New Episodes	Days at Risk	Events	Eligible Members	Member-Days
Olmesartan								
0-Day Min Episode Duration and Blackout Period								
2007	22,977	105,103	4,096,119	22,977	4,079,828	8	14,569,348	4,448,268,172
2008	28,926	130,604	4,803,096	28,926	4,854,404	11	23,073,889	4,646,236,408
2009	45,103	178,143	6,770,887	45,103	6,815,423	11	22,692,418	6,847,679,424
2010	36,346	119,043	4,473,143	36,346	4,488,176	8	22,143,533	6,790,530,596
2011	18,109	42,105	1,580,606	18,109	1,578,885	2	20,806,345	6,127,650,015
365-Day Min Episode Duration and Blackout Period								
2007	3,048	59,742	2,347,169	3,048	2,376,650	2	11,902,646	4,031,569,763
2008	3,960	70,327	2,708,095	3,960	2,741,802	6	19,620,645	4,447,507,496
2009	5,674	86,510	3,480,094	5,674	3,517,945	1	19,961,943	6,459,195,098
2010	2,984	36,223	1,467,091	2,984	1,481,284	1	20,382,272	6,560,590,697
2011	84	590	31,271	84	31,906	0	16,447,722	5,322,834,545
730-Day Min Episode Duration and Blackout Period								
2007	1,314	36,129	1,461,362	1,314	1,475,877	1	9,083,823	3,086,634,292
2008	1,562	37,935	1,514,825	1,562	1,529,879	4	14,940,235	3,920,902,671
2009	1,498	30,526	1,308,098	1,498	1,318,902	0	16,534,131	5,493,226,716
2010	45	600	33,432	45	33,865	0	15,423,014	5,427,892,424
2011	0	0	0	0	0	0	13,040,713	4,264,172,331
Candesartan								
0-Day Min Episode Duration and Blackout Period								
2007	4,483	20,028	844,843	4,483	831,326	2	14,604,182	4,463,532,510
2008	2,967	12,801	486,921	2,967	489,694	0	23,214,181	4,672,296,824
2009	3,438	13,300	516,596	3,438	516,857	6	22,832,689	6,902,771,980
2010	1,926	6,529	264,281	1,926	262,566	0	22,295,895	6,848,250,590
2011	953	2,290	89,369	953	88,339	0	20,958,246	6,179,406,075
365-Day Min Episode Duration and Blackout Period								
2007	556	10,882	438,211	556	441,690	1	11,951,049	4,049,100,302
2008	392	6,909	272,667	392	275,056	0	19,764,318	4,473,836,192
2009	404	6,290	261,656	404	263,930	1	20,108,550	6,513,964,419
2010	230	2,559	116,393	230	116,505	0	20,527,016	6,614,837,334
2011	8	55	3,074	8	3,095	0	16,580,060	5,366,890,667
730-Day Min Episode Duration and Blackout Period								
2007	247	6,617	278,075	247	279,115	1	9,135,296	3,105,043,449
2008	153	3,878	157,889	153	158,744	0	15,080,612	3,949,008,571
2009	141	2,822	125,364	141	126,084	0	16,675,693	5,545,055,819
2010	2	36	1,535	2	1,540	0	15,568,291	5,481,164,984
2011	0	0	0	0	0	0	13,171,875	4,307,629,922
Eprosartan								
0-Day Min Episode Duration and Blackout Period								
2007	116	472	18,858	116	19,173	0	14,623,948	4,471,485,443
2008	53	224	8,820	53	8,869	0	23,252,048	4,679,360,969
2009	43	146	7,006	43	6,906	0	22,862,089	6,913,515,789
2010	27	94	4,191	27	4,107	0	22,321,773	6,857,569,740
2011	19	49	1,826	19	1,800	0	20,977,576	6,186,046,820
365-Day Min Episode Duration and Blackout Period								
2007	15	276	10,390	15	10,598	0	11,973,039	4,057,309,383
2008	8	123	5,220	8	5,240	0	19,800,739	4,480,793,243
2009	6	79	4,352	6	4,448	0	20,136,709	6,524,325,456
2010	4	37	1,986	4	1,924	0	20,551,291	6,623,484,914
2011	1	12	360	1	379	0	16,599,540	5,373,196,556

Table 4a cont. Summary of Incident Drug Use and Outcomes in the MSDD between January 1, 2007 to December 31, 2011, by Drug Product, Minimum Episode Duration and Blackout Period, and Year

	New Users	Dispensings	Total Days Supplied	New Episodes	Days at Risk	Events	Eligible Members	Member-Days
Eprosartan								
730-Day Min Episode Duration and Blackout Period								
2007	5	143	5,260	5	5,333	0	9,150,817	3,110,834,223
2008	3	58	2,910	3	2,948	0	15,108,345	3,955,778,527
2009	3	38	2,642	3	2,678	0	16,701,502	5,554,417,371
2010	0	0	0	0	0	0	15,592,596	5,489,796,104
2011	0	0	0	0	0	0	13,192,565	4,314,338,054
Irbesartan								
0-Day Min Episode Duration and Blackout Period								
2007	15,780	73,450	3,285,018	15,780	3,219,971	7	14,549,030	4,442,123,716
2008	13,044	62,530	2,475,006	13,044	2,489,128	2	23,105,908	4,652,763,731
2009	16,081	70,335	2,768,720	16,081	2,774,728	6	22,750,772	6,872,365,993
2010	10,363	36,156	1,452,850	10,363	1,446,539	4	22,218,135	6,819,656,859
2011	3,927	9,333	369,875	3,927	355,344	0	20,891,094	6,157,107,523
365-Day Min Episode Duration and Blackout Period								
2007	2,225	41,707	1,823,376	2,225	1,838,428	4	11,889,641	4,026,672,797
2008	2,070	36,133	1,496,729	2,070	1,507,574	1	19,658,675	4,454,628,122
2009	2,533	38,736	1,594,823	2,533	1,601,322	1	20,027,334	6,484,083,996
2010	1,113	13,180	572,645	1,113	571,806	2	20,453,258	6,587,906,733
2011	11	100	4,095	11	4,183	0	16,519,873	5,347,570,650
730-Day Min Episode Duration and Blackout Period								
2007	1,031	26,387	1,208,656	1,031	1,215,652	1	9,096,923	3,091,121,951
2008	907	21,459	910,394	907	914,992	0	15,001,617	3,929,832,185
2009	759	15,051	664,059	759	664,537	0	16,598,519	5,517,052,586
2010	24	298	17,961	24	17,926	0	15,492,836	5,454,101,292
2011	0	0	0	0	0	0	13,108,737	4,287,328,101
Losartan								
0-Day Min Episode Duration and Blackout Period								
2007	50,611	309,159	19,160,337	50,611	18,953,234	20	14,423,456	4,391,886,163
2008	44,961	246,456	15,009,757	44,961	14,862,785	19	22,926,089	4,595,528,426
2009	56,076	272,934	15,127,875	56,076	14,924,858	32	22,554,233	6,796,885,511
2010	121,002	539,009	25,613,468	121,002	24,983,413	53	22,000,137	6,731,058,439
2011	167,933	463,742	21,681,271	167,933	19,997,809	50	20,567,672	6,023,813,915
365-Day Min Episode Duration and Blackout Period								
2007	14,291	227,800	15,044,397	14,291	14,937,000	12	11,741,799	3,972,906,187
2008	12,593	173,851	11,552,782	12,593	11,423,904	10	19,478,201	4,397,081,549
2009	14,546	180,704	10,971,071	14,546	10,808,829	2	19,831,076	6,409,920,365
2010	27,127	257,676	13,731,000	27,127	13,303,047	6	20,225,757	6,499,420,952
2011	860	6,521	323,971	860	327,118	0	16,232,276	5,226,948,431
730-Day Min Episode Duration and Blackout Period								
2007	8,936	174,936	12,237,241	8,936	12,115,117	6	8,932,734	3,031,709,500
2008	7,611	127,173	8,975,758	7,611	8,833,962	3	14,790,833	3,868,693,610
2009	8,325	115,910	7,675,096	8,325	7,503,552	0	16,378,047	5,436,882,668
2010	173	2,319	129,807	173	129,905	0	15,257,796	5,362,944,193
2011	0	0	0	0	0	0	12,839,559	4,176,898,798

Table 4a cont. Summary of Incident Drug Use and Outcomes in the MSDD between January 1, 2007 to December 31, 2011, by Drug Product, Minimum Episode Duration and Blackout Period, and Year

	New Users	Dispensings	Total Days Supplied	New Episodes	Days at Risk	Events	Eligible Members	Member-Days
Telmisartan								
0-Day Min Episode Duration and Blackout Period								
2007	9,594	41,653	1,530,232	9,594	1,531,707	4	14,607,309	4,463,898,756
2008	8,654	33,799	1,203,805	8,654	1,218,377	1	23,200,529	4,669,603,845
2009	9,563	33,094	1,279,752	9,563	1,283,068	1	22,815,546	6,895,787,752
2010	8,597	26,915	1,041,647	8,597	1,042,618	2	22,279,520	6,841,522,272
2011	3,561	7,917	309,261	3,561	307,851	0	20,938,000	6,172,472,196
365-Day Min Episode Duration and Blackout Period								
2007	1,081	22,139	809,238	1,081	822,446	2	11,948,969	4,048,551,592
2008	841	15,568	583,203	841	592,252	0	19,750,382	4,471,173,809
2009	984	15,140	624,250	984	629,111	0	20,091,630	6,507,280,765
2010	745	8,598	368,550	745	372,268	0	20,513,173	6,609,105,184
2011	26	195	9,940	26	10,035	0	16,566,458	5,362,020,359
730-Day Min Episode Duration and Blackout Period								
2007	454	13,158	491,145	454	497,618	0	9,128,668	3,102,836,327
2008	323	8,267	325,418	323	329,402	0	15,063,370	3,945,951,253
2009	333	6,677	292,195	333	293,888	0	16,659,100	5,538,746,468
2010	14	173	10,390	14	10,573	0	15,550,296	5,474,371,591
2011	0	0	0	0	0	0	13,155,260	4,301,879,440
Valsartan								
0-Day Min Episode Duration and Blackout Period								
2007	54,906	325,509	12,590,496	54,906	12,557,934	32	14,417,060	4,390,728,292
2008	50,242	272,550	10,211,802	50,242	10,281,311	22	22,794,468	4,590,858,519
2009	80,143	390,203	15,149,051	80,143	15,183,576	30	22,445,003	6,759,331,810
2010	66,555	276,694	10,555,091	66,555	10,557,573	25	21,906,804	6,705,744,633
2011	38,459	99,933	3,868,965	38,459	3,769,347	9	20,589,127	6,054,463,393
365-Day Min Episode Duration and Blackout Period								
2007	9,983	212,634	8,212,274	9,983	8,296,004	14	11,735,444	3,971,750,792
2008	8,714	164,951	6,428,498	8,714	6,481,157	7	19,347,244	4,392,447,570
2009	13,832	223,806	9,087,461	13,832	9,152,408	3	19,718,790	6,372,210,547
2010	9,645	123,448	4,916,862	9,645	4,946,237	1	20,151,558	6,478,577,643
2011	214	1,584	80,624	214	82,304	0	16,252,015	5,257,136,654
730-Day Min Episode Duration and Blackout Period								
2007	4,788	138,974	5,506,745	4,788	5,553,135	6	8,950,483	3,039,354,398
2008	3,884	99,583	3,985,115	3,884	4,012,165	1	14,712,985	3,866,900,727
2009	5,093	106,005	4,463,113	5,093	4,492,218	0	16,308,871	5,413,221,096
2010	160	2,300	118,665	160	120,277	0	15,207,031	5,350,163,195
2011	0	0	0	0	0	0	12,856,031	4,202,296,514
Hydrochlorothiazide								
0-Day Min Episode Duration and Blackout Period								
2007	165,415	679,485	37,106,753	165,415	36,891,402	48	14,089,467	4,243,604,118
2008	165,401	649,102	33,686,975	165,401	33,531,077	56	22,328,286	4,430,916,153
2009	220,671	794,805	38,052,073	220,671	37,756,760	66	21,999,416	6,569,253,692
2010	201,003	628,232	29,392,537	201,003	28,885,076	69	21,411,775	6,505,597,320
2011	161,073	346,953	16,142,806	161,073	15,039,483	55	20,062,214	5,857,709,108
365-Day Min Episode Duration and Blackout Period								
2007	26,769	398,132	23,986,990	26,769	23,959,425	14	11,321,650	3,812,799,453
2008	26,200	365,234	21,151,745	26,200	21,049,127	11	18,850,631	4,231,906,184
2009	31,899	405,579	21,869,028	31,899	21,683,976	10	19,270,624	6,189,840,459
2010	26,026	246,772	13,566,943	26,026	13,231,480	8	19,721,389	6,304,330,222
2011	551	3,854	207,247	551	209,272	0	15,817,842	5,095,903,198

Table 4a cont. Summary of Incident Drug Use and Outcomes in the MSDD between January 1, 2007 to December 31, 2011, by Drug Product, Minimum Episode Duration and Blackout Period, and Year

	New Users	Dispensings	Total Days Supplied	New Episodes	Days at Risk	Events	Eligible Members	Member-Days
Hydrochlorothiazide								
730-Day Min Episode Duration and Blackout Period								
2007	13,553	266,153	17,246,588	13,553	17,158,424	9	8,521,290	2,877,337,686
2008	13,026	233,272	14,458,691	13,026	14,305,709	5	14,171,997	3,694,358,715
2009	13,401	200,269	12,144,824	13,401	11,924,264	3	15,812,884	5,221,770,324
2010	224	2,955	167,765	224	168,154	0	14,699,444	5,161,142,227
2011	0	0	0	0	0	0	12,378,392	4,029,857,630
Atenolol								
0-Day Min Episode Duration and Blackout Period								
2007	104,214	511,164	30,157,615	104,214	29,898,805	39	14,013,047	4,235,427,832
2008	87,298	388,106	22,316,368	87,298	22,093,104	29	22,356,381	4,433,185,647
2009	114,875	488,328	24,336,817	114,875	24,069,153	51	22,045,453	6,605,962,678
2010	86,828	289,103	14,480,430	86,828	14,151,883	37	21,523,257	6,564,223,692
2011	59,770	126,094	6,516,731	59,770	5,929,880	25	20,231,199	5,927,839,373
365-Day Min Episode Duration and Blackout Period								
2007	22,280	343,341	21,854,424	22,280	21,739,432	13	11,317,682	3,815,753,222
2008	17,987	247,097	15,627,167	17,987	15,460,162	13	18,923,386	4,236,755,439
2009	21,738	285,405	15,593,813	21,738	15,418,495	12	19,335,236	6,225,693,015
2010	14,077	129,391	7,520,561	14,077	7,290,372	3	19,799,838	6,348,470,567
2011	211	1,487	79,816	211	80,274	0	15,929,107	5,143,493,559
730-Day Min Episode Duration and Blackout Period								
2007	12,682	248,517	16,889,249	12,682	16,745,433	10	8,548,379	2,889,774,531
2008	10,035	170,679	11,540,608	10,035	11,367,173	7	14,296,935	3,711,854,776
2009	10,567	160,950	9,709,669	10,567	9,519,959	5	15,921,127	5,267,253,896
2010	147	2,007	110,499	147	110,197	0	14,834,482	5,215,845,237
2011	0	0	0	0	0	0	12,513,422	4,082,395,409
Amlodipine								
0-Day Min Episode Duration and Blackout Period								
2007	96,103	620,833	24,495,785	96,103	24,383,167	39	14,307,420	4,345,950,978
2008	258,182	1,609,173	99,173,446	258,182	98,234,407	89	22,472,320	4,498,514,335
2009	249,321	1,333,495	60,555,952	249,321	60,022,666	102	21,982,917	6,573,680,284
2010	228,338	994,339	44,433,423	228,338	43,572,807	85	21,326,377	6,482,584,347
2011	159,240	408,877	18,085,336	159,240	16,810,170	46	19,921,995	5,823,099,234
365-Day Min Episode Duration and Blackout Period								
2007	19,611	419,305	16,872,957	19,611	16,968,409	17	11,596,119	3,921,555,189
2008	85,407	1,202,312	79,282,461	85,407	78,469,217	44	18,990,256	4,297,280,771
2009	57,948	841,897	41,419,792	57,948	41,019,684	23	19,236,721	6,185,641,111
2010	47,476	501,684	25,178,356	47,476	24,548,979	11	19,606,505	6,268,897,170
2011	762	5,770	291,531	762	292,882	0	15,695,622	5,059,772,037
730-Day Min Episode Duration and Blackout Period								
2007	9,926	284,384	11,834,226	9,926	11,878,007	7	8,692,089	2,946,922,337
2008	53,322	900,957	62,689,149	53,322	61,808,738	27	14,228,003	3,744,037,230
2009	27,932	468,026	25,333,561	27,932	24,913,138	3	15,810,511	5,224,504,023
2010	527	7,287	394,404	527	396,176	0	14,662,959	5,144,817,926
2011	0	0	0	0	0	0	12,322,689	4,014,417,049

Table 4b. Rates of Incident Drug Use and Outcomes in the MSDD between January 1, 2007 to December 31, 2011, by Drug Product, Minimum Episode Duration and Blackout Period, and Year

	New Users/1K Eligible Members	Dispensings/ User	Days Supplied/ User	Days Supplied/ Dispensing	New Events/1M Days at Risk
Olmesartan					
0-Day Min Episode Duration and Blackout Period					
2007	1.6	4.6	178.3	39.0	0.2
2008	1.3	4.5	166.0	36.8	0.2
2009	2.0	3.9	150.1	38.0	0.2
2010	1.6	3.3	123.1	37.6	0.2
2011	0.9	2.3	87.3	37.5	0.1
365-Day Min Episode Duration and Blackout Period					
2007	0.3	19.6	770.1	39.3	0.1
2008	0.2	17.8	683.9	38.5	0.2
2009	0.3	15.2	613.3	40.2	0.0
2010	0.1	12.1	491.7	40.5	0.1
2011	0.0	7.0	372.3	53.0	0.0
730-Day Min Episode Duration and Blackout Period					
2007	0.1	27.5	1,112.1	40.4	0.1
2008	0.1	24.3	969.8	39.9	0.3
2009	0.1	20.4	873.2	42.9	0.0
2010	0.0	13.3	742.9	55.7	0.0
2011	0.0	-	-	-	-
Candesartan					
0-Day Min Episode Duration and Blackout Period					
2007	0.3	4.5	188.5	42.2	0.2
2008	0.1	4.3	164.1	38.0	0.0
2009	0.2	3.9	150.3	38.8	1.2
2010	0.1	3.4	137.2	40.5	0.0
2011	0.0	2.4	93.8	39.0	0.0
365-Day Min Episode Duration and Blackout Period					
2007	0.0	19.6	788.1	40.3	0.2
2008	0.0	17.6	695.6	39.5	0.0
2009	0.0	15.6	647.7	41.6	0.4
2010	0.0	11.1	506.1	45.5	0.0
2011	0.0	6.9	384.3	55.9	0.0
730-Day Min Episode Duration and Blackout Period					
2007	0.0	26.8	1,125.8	42.0	0.4
2008	0.0	25.3	1,032.0	40.7	0.0
2009	0.0	20.0	889.1	44.4	0.0
2010	0.0	18.0	767.5	42.6	0.0
2011	0.0	-	-	-	-
Eprosartan					
0-Day Min Episode Duration and Blackout Period					
2007	0.0	4.1	166.4	39.4	0.0
2008	0.0	4.2	162.9	48.0	0.0
2009	0.0	3.4	155.2	44.6	0.0
2010	0.0	3.5	96.1	37.3	0.0
2011	0.0	2.6	-	-	-
365-Day Min Episode Duration and Blackout Period					
2007	0.0	18.4	652.5	42.4	0.0
2008	0.0	15.4	725.3	55.1	0.0
2009	0.0	13.2	496.5	53.7	0.0
2010	0.0	9.3	360.0	30.0	0.0
2011	0.0	12.0	-	-	-

Table 4b cont. Rates of Incident Drug Use and Outcomes in the MSDD between January 1, 2007 to December 31, 2011, by Drug Product, Minimum Episode Duration and Blackout Period, and Year

Eprosartan					
730-Day Min Episode Duration and Blackout Period					
2007	0.0	28.6	970.0	50.2	0.0
2008	0.0	19.3	880.7	69.5	0.0
2009	0.0	12.7	-	-	-
2010	0.0	-	-	-	-
2011	0.0	-	-	-	-
Irbesartan					
0-Day Min Episode Duration and Blackout Period					
2007	1.1	4.7	189.7	39.6	0.1
2008	0.6	4.8	172.2	39.4	0.2
2009	0.7	4.4	140.2	40.2	0.3
2010	0.5	3.5	94.2	39.6	0.0
2011	0.2	2.4	-	-	-
365-Day Min Episode Duration and Blackout Period					
2007	0.2	18.7	723.1	41.4	0.1
2008	0.1	17.5	629.6	41.2	0.1
2009	0.1	15.3	514.5	43.4	0.3
2010	0.1	11.8	372.3	41.0	0.0
2011	0.0	9.1	-	-	-
730-Day Min Episode Duration and Blackout Period					
2007	0.1	25.6	1,003.7	42.4	0.0
2008	0.1	23.7	874.9	44.1	0.0
2009	0.0	19.8	748.4	60.3	0.0
2010	0.0	12.4	-	-	-
2011	0.0	-	-	-	-
Losartan					
0-Day Min Episode Duration and Blackout Period					
2007	3.5	6.1	333.8	60.9	0.1
2008	2.0	5.5	269.8	55.4	0.2
2009	2.5	4.9	211.7	47.5	0.2
2010	5.5	4.5	129.1	46.8	0.3
2011	8.2	2.8	-	-	-
365-Day Min Episode Duration and Blackout Period					
2007	1.2	15.9	917.4	66.5	0.1
2008	0.6	13.8	754.2	60.7	0.0
2009	0.7	12.4	506.2	53.3	0.0
2010	1.3	9.5	376.7	49.7	0.0
2011	0.1	7.6	-	-	-
730-Day Min Episode Duration and Blackout Period					
2007	1.0	19.6	1,179.3	70.6	0.0
2008	0.5	16.7	921.9	66.2	0.0
2009	0.5	13.9	750.3	56.0	0.0
2010	0.0	13.4	-	-	-
2011	0.0	-	-	-	-
Telmisartan					
0-Day Min Episode Duration and Blackout Period					
2007	0.7	4.3	139.1	35.6	0.1
2008	0.4	3.9	133.8	38.7	0.1
2009	0.4	3.5	121.2	38.7	0.2
2010	0.4	3.1	86.8	39.1	0.0
2011	0.2	2.2	-	-	-

Table 4b cont. Rates of Incident Drug Use and Outcomes in the MSDD between January 1, 2007 to December 31, 2011, by Drug Product, Minimum Episode Duration and Blackout Period, and Year

Telmisartan					
365-Day Min Episode Duration and Blackout Period					
2007	0.1	20.5	693.5	37.5	0.0
2008	0.0	18.5	634.4	41.2	0.0
2009	0.0	15.4	494.7	42.9	0.0
2010	0.0	11.5	382.3	51.0	0.0
2011	0.0	7.5	-	-	-
730-Day Min Episode Duration and Blackout Period					
2007	0.0	29.0	1,007.5	39.4	0.0
2008	0.0	25.6	877.5	43.8	0.0
2009	0.0	20.1	742.1	60.1	0.0
2010	0.0	12.4	-	-	-
2011	0.0	-	-	-	-
Valsartan					
0-Day Min Episode Duration and Blackout Period					
2007	3.8	5.9	203.3	37.5	0.2
2008	2.2	5.4	189.0	38.8	0.2
2009	3.6	4.9	158.6	38.1	0.2
2010	3.0	4.2	100.6	38.7	0.2
2011	1.9	2.6	-	-	-
365-Day Min Episode Duration and Blackout Period					
2007	0.9	21.3	737.7	39.0	0.1
2008	0.5	18.9	657.0	40.6	0.0
2009	0.7	16.2	509.8	39.8	0.0
2010	0.5	12.8	376.7	50.9	0.0
2011	0.0	7.4	-	-	-
730-Day Min Episode Duration and Blackout Period					
2007	0.5	29.0	1,026.0	40.0	0.0
2008	0.3	25.6	876.3	42.1	0.0
2009	0.3	20.8	741.7	51.6	0.0
2010	0.0	14.4	-	-	-
2011	0.0	-	-	-	-
Hydrochlorothiazide					
0-Day Min Episode Duration and Blackout Period					
2007	11.7	4.1	203.7	51.9	0.2
2008	7.4	3.9	172.4	47.9	0.2
2009	10.0	3.6	146.2	46.8	0.2
2010	9.4	3.1	100.2	46.5	0.4
2011	8.0	2.2	-	-	-
365-Day Min Episode Duration and Blackout Period					
2007	2.4	14.9	807.3	57.9	0.1
2008	1.4	13.9	685.6	53.9	0.0
2009	1.7	12.7	521.3	55.0	0.1
2010	1.3	9.5	376.1	53.8	0.0
2011	0.0	7.0	-	-	-
730-Day Min Episode Duration and Blackout Period					
2007	1.6	19.6	1,110.0	62.0	0.0
2008	0.9	17.9	906.3	60.6	0.0
2009	0.8	14.9	749.0	56.8	0.0
2010	0.0	13.2	-	-	-
2011	0.0	-	-	-	-

Table 4b cont. Rates of Incident Drug Use and Outcomes in the MSDD between January 1, 2007 to December 31, 2011, by Drug Product, Minimum Episode Duration and Blackout Period, and Year

Atenolol					
0-Day Min Episode Duration and Blackout Period					
2007	7.4	4.9	255.6	57.5	0.1
2008	3.9	4.4	211.9	49.8	0.2
2009	5.2	4.3	166.8	50.1	0.3
2010	4.0	3.3	109.0	51.7	0.4
2011	3.0	2.1	-	-	-
365-Day Min Episode Duration and Blackout Period					
2007	2.0	15.4	868.8	63.2	0.1
2008	1.0	13.7	717.4	54.6	0.1
2009	1.1	13.1	534.2	58.1	0.0
2010	0.7	9.2	378.3	53.7	0.0
2011	0.0	7.0	-	-	-
730-Day Min Episode Duration and Blackout Period					
2007	1.5	19.6	1,150.0	67.6	0.1
2008	0.7	17.0	918.9	60.3	0.1
2009	0.7	15.2	751.7	55.1	0.0
2010	0.0	13.7	-	-	-
2011	0.0	-	-	-	-
Amlodipine					
0-Day Min Episode Duration and Blackout Period					
2007	6.7	6.5	384.1	61.6	0.1
2008	11.5	6.2	242.9	45.4	0.2
2009	11.3	5.3	194.6	44.7	0.2
2010	10.7	4.4	113.6	44.2	0.3
2011	8.0	2.6	-	-	-
365-Day Min Episode Duration and Blackout Period					
2007	1.7	21.4	928.3	65.9	0.1
2008	4.5	14.1	714.8	49.2	0.1
2009	3.0	14.5	530.3	50.2	0.0
2010	2.4	10.6	382.6	50.5	0.0
2011	0.0	7.6	-	-	-
730-Day Min Episode Duration and Blackout Period					
2007	1.1	28.7	1,175.7	69.6	0.0
2008	3.7	16.9	907.0	54.1	0.0
2009	1.8	16.8	748.4	54.1	0.0
2010	0.0	13.8	-	-	-
2011	0.0	-	-	-	-