

**On-line Appendix:**

**Mintzes et al. Does industry-sponsored education foster overdiagnosis and overtreatment of depression, osteoporosis and overactive bladder syndrome? An Australian cohort study**

**Appendix Table 1:  
Coding of event characteristic and audience variables**

Variable name	Keyword search
COMPANY	A. Menarini Australia Pty Ltd; Abbott Australasia Pty Ltd OR AbbVie Pty Ltd; Actelion Pharmaceuticals Australia Pty Ltd; Alexion Pharmaceuticals Australasia PTY LTD; Allergan Australia Pty Ltd; Amgen Australia; Astellas Pharma Australia Pty Ltd; Astrazeneca Pty Ltd; Baxter Healthcare Pty Ltd; Bayer Australia Ltd; Besins Healthcare Australia; BioCeuticals; Biogen Idec Australia Pty Limited; Boehringer Ingelheim Pty Limited; Bristol-Myers Squibb Australia Pty Limited; Celgene Pty Ltd; CSL (includes also bioCSL Australia Pty Ltd and CSL Behring); Eisai Australia Pty Ltd; Eli Lilly Australia Pty Ltd; Fresenius Kabi Australia; Gilead Sciences Pty.; GlaxoSmithKline Australia Pty Ltd *(GSK); iNova Pharmaceuticals (Aus) Pty Ltd; IPSEN Pty Ltd; Janssen; LEO Pharma Pty Ltd; Lundbeck Australia; Merck Serono Australia Pty Ltd; MSD Australia Pty Ltd; Mundipharma Pty Ltd; Mylan EPD; Norgine Pty Limited; Novartis Pharmaceuticals Australia Pty Limited (includes also Alcon Laboratories); Novo Nordisk Pharmaceuticals; Pfizer Australia; Roche Products Pty Limited; Sanofi/Sanofi Aventis Australia Pty Ltd; Servier Laboratories (Australia) Pty Ltd; Shire Australia; Takeda Pharmaceuticals Australia Pty Ltd (includes also Nycomed Pty Ltd Report); UCB Pharma; Vifor Pharma Pty Ltd
LOCATION	
New South Wales	NSW, New South Wales, Sydney, other cities or suburbs, and postal codes of NSW*
Victoria	VIC, Victoria, Melbourne, other cities or suburbs and postal codes of VIC*
Australian Capital Territory	ACT, Australian Capital Territory, Canberra, other cities or suburbs, and postal codes of ACT*
Western Australia	WA, Western Australia, Perth, other cities or suburbs, and postal codes of WA*

Variable name	Keyword search
South Australia	SA, South Australia, Adelaide, other cities or suburbs, and postal codes of SA*
Northern Territory	NT, North Territory, other cities or suburbs, and postal codes of NT*
Tasmania	TAS, Tasmania, Hobart, other cities or suburbs, and postal codes of Tasmania*
Overseas	Overseas: outside of Australia**
*Where the state or capital was not listed, events were hand coded based on postal codes, cities or suburbs	
**Events not taking place in an Australian state were hand-coded	
<b>MEALS</b>	
• Lunch	Lunch
• Dinner	Dinner
• Breakfast	Breakfast
• Tea	Afternoon tea, morning tea, light refreshments, light meals, sandwiches & drinks, coffee cart, snack and beverage, sushi
• All day events w/ meals	Day delegate package*; conference package**
• Food unspecified	food & beverages, meals, drinks, in hospital catering, beverages, wine
• No meals provided	Sponsorship/accommodation only, no hospitality provided, travel/accommodation only (domestic events)
*Note: "day delegate package" consisted of entries where multiple meals were listed ((Lunch, tea), (Breakfast, tea), (Dinner, tea), (Breakfast, lunch, tea))	
**Note: "conference package" consisted of events lasting multiple days and typically included a day delegate package, often accommodation (food and beverage not reported separately), registration (food and beverage not reported separately), or travel (including flights, registration, airfares, accommodation and food and beverages not reported separately)	
<b>EVENTS HELD IN CLINICAL SETTING</b>	Hospital; clinic; practice; medicare local; health centre; surgery; medical centre; medical; health care centre; specialist centre; cancer centre; cancer care centre; heart centre; medical and dental centre; endocrine centre; radiotherapy centre; radiation centre; optical centre; eye centre; renal unit; ward; department; dept; community health; family planning; education centre.
<b>PROFESSIONAL STATUS</b>	
• Primary care doctors	GP; general practitioner; family medicine.

Variable name	Keyword search
<ul style="list-style-type: none"> <li>Nurses</li> </ul>	Nurse
<ul style="list-style-type: none"> <li>Pharmacists</li> </ul>	Pharmacist
<ul style="list-style-type: none"> <li>Trainees</li> </ul>	Registrar; resident; intern; student; advanced trainee; RMO; resident medical officer; JHO; SHO; senior house officer; PHO; principal house officer; fellow
<ul style="list-style-type: none"> <li>Specialty care</li> </ul>	Specialist; consultant; senior medical officer; SMO; visiting medical officer; VMO; general medicine; general physician; *ology physician; *ology doctor; allergist; allergy physician; anesthesiologist; anesthetist; anaesthesiologist; anaesthetist; andrologist; cardiologist; dermatologist, diabetologist; emergency physician; emergency medicine physician; endocrinologist; epileptologist; gastroenterologist; geriatrician; geriatric physician; gynaecologist; obstetrician; OB/GYN; haematologist; hematologist; hepatologist; immunologist; infectious disease physician; infectious disease doctor; internal medicine physician; microbiologist; neonatologist; neurologist; nuclear medicine physician; nephrologist; renal physician; renal doctor; urologist; oncologist; pharmacologist; pulmonologist; psychogeriatrician; ophthalmologist; rheumatologist; radiologist; respiratory physician; respiratory medicine physician; respiratory medicine doctor; palliative care physician; pathologist; sexual health physician; sexual health doctor; psychiatrist; psychiatry doctor; paediatrician; surgeon; surgery doctor; intensive care doctor; intensivist; intensive care physician; cardiothoracic
CLINICAL FOCUS	
<ul style="list-style-type: none"> <li>Allergy/Immunology</li> </ul>	Allergist; allergy; immunologist; immunology
<ul style="list-style-type: none"> <li>Anaesthesiology</li> </ul>	Anesthesiologist; anesthetist; anaesthesiologist; anaesthetist; anaesthesiology
<ul style="list-style-type: none"> <li>Andrology</li> </ul>	Andrologist
<ul style="list-style-type: none"> <li>Cardiology</li> </ul>	Cardiologist; cardiology
<ul style="list-style-type: none"> <li>Dermatology</li> </ul>	Dermatologist; dermatology
<ul style="list-style-type: none"> <li>Emergency</li> </ul>	Emergency
<ul style="list-style-type: none"> <li>Endocrinology</li> </ul>	endocrinologist; endocrinology; diabetologist; diabetology; diabetes
<ul style="list-style-type: none"> <li>Gastroenterology</li> </ul>	Gastroenterologist; gastroenterology; Hepatologist; hepatology
<ul style="list-style-type: none"> <li>Geriatrics</li> </ul>	Geriatrician; geriatric; psychogeriatrician; elderly
<ul style="list-style-type: none"> <li>Haematology</li> </ul>	Haematologist; haematology; hematology; hematologist

Variable name	Keyword search
• Infectious Diseases	Infectious disease; microbiologist; microbiology
• Internal Medicine	Internal medicine
• Intensive care	Intensive care; intensivist; critical care
• Neonatology	Neonatologist; neonatology; NICU; neonatal
• Nuclear medicine	Nuclear medicine
• Nephrology	Nephrologist, nephrology; renal; kidney
• Neurology	Neurologist; neurology; epileptologist
• Obstetrics/Gynaecology	Gynaecologist; gynaecology; obstetrician; OB/GYN; obstetrics
• Oncology	Oncologist; oncology; cancer
• Ophthalmology	Ophthalmologist; ophthalmology
• Otolaryngology	Otolaryngology
• Palliative care	Palliative care
• Pathology	Pathologist; pathology
• Pharmacology	Pharmacologist; pharmacology
• Paediatrics	Paediatrician; paediatric*; pediatric*
• Psychiatry	Psychiatrist; psychiatry; mental health
• Radiology	Radiologist; radiology
• Rheumatology	Rheumatologist; rheumatology
• Respiratory medicine	Lung specialist; respiratory; pulmonologist
• Sexual health	Sexual health
• Surgery	Surgeon; surgery; surgical; operating theatre
• Urology	Urologist; urology
*Note: clinical focus is a proxy variable based on clinical specialty of attendees and/or event description.	
EVENT TYPE	
• Meeting (not otherwise specified)	Search for generic word “meeting”
• Journal club	Journal club; journalclub
• Inservice	Inservice
• Workshop	Workshop
• Grand rounds	Grand round; grandround
• Scientific meeting	scientific meeting; congress; conference AND NOT videoconference/teleconference
• Clinical meeting	internal meeting; departmental meeting; clinical meeting; case review, case conference; case study meeting; case study conference
• Multidisciplinary meeting	Multidisciplinary meeting

**Appendix Table 2:**

**Coding of three included conditions**

Variable name	Keyword search
DEPRESSION	Depress; Anx; Citalopram; Sertraline; Agomelatine; Vortioxetine; Amitriptyline; Clomipramine; Desvenlafaxine; Dothiepin; Doxepin; Duloxetine; Escitalopram; Fluoxetine; Fluvoxamine; Imipramine; Miaserin; Mirtazapine; Moclobemide; Paroxetine; Reboxetine; Tranylcypromine; Trimipramine; Venlafaxine; Brintellix; Valdoxan; Cymbalta; Anafranil; Pristiq; Sinequan; Andepira; Prozac; Tolvon; Avanza; Mirtazon; Remero; Edronax; Zoloft; Xydep; Altven; Efexor
OSTEOPOROSIS	osteop; bone health; bone disease; metabolic bone disease; mineral bone disease; bone mineral; mineral bone; bone and calcium; fracture; Bisphosphonate; Denosumab; Zoledronic acid; Cinacalcet; Teriparatide; Alendronic acid; Alendronate; Cholecalciferol; Calcitriol; Calcium chloride; Disodium Pamidronate; Ibandronate; Raloxifene; Risedronate ; Salcatonin; Sodium Clodronate; Strontium ranelate; Tiludronate; Prolia; Forteo; Sensipar; Adronat; Fosamax; Dronalen; Rocaltrol; Risedronate; Aredia; Bondronat; Evifyne; Evista; Miacalcic; Protos; Skelid; Aclasta; Osteovan; Zometa.
OVERACTIVE BLADDER	Incontinence; Overactive AND bladder; Over active AND bladder; Betmiga; Darifenacin; Oxybutynin; Propantheline; Solifenacin; Tolterodine; Mirabegron; Ditropan; Vesicare; Detrusitol

**Appendix Table 3:**

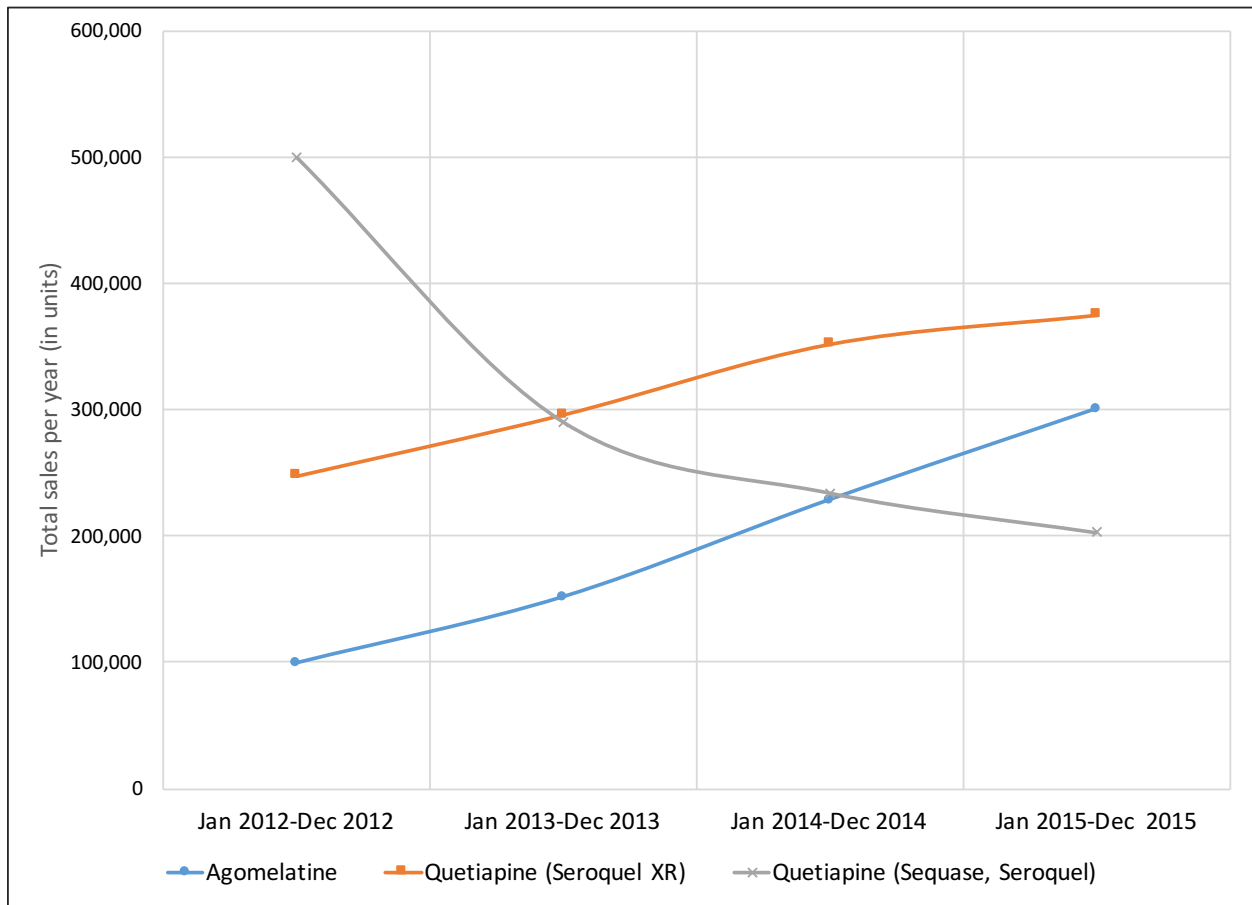
**Top 5 sponsoring companies in total and per condition**

<b>Company</b>	<b>Number of events (% of category)</b>	<b>Number of attendees (% of category)</b>	<b>Total cost of food and beverage (\$AUD)</b>	<b>Total cost of functions (\$AUD)</b>	<b>Mean total cost per event (SD) (AUD\$)</b>	<b>Median total cost per event (IQR) (AUD\$)</b>
General	116,845	3,481,750	84,862,791	286,117,928	2,449.70 (SD=15,020)	263 (153-1,195)
AstraZeneca	13,968 (12.0%)	435,686 (12.5%)	12,725,027 .09 (15.0%)	31,766,776 (11.1%)	2,274 (SD=10,878)	318 (165-2,261)
Novartis	10,120 (8.7%)	244,069 (7.0%)	6,600,502. 76 (7.8%)	27,467,246 (9.6%)	2,714 (SD=16,109)	270 (167-1,154)
MSD	9,142 (7.8%)	214,621 (6.2%)	5,388,246. 54 (6.4%)	18,352,116 (6.4%)	2,007 (SD=9,274)	341 (180-1,182)
Roche	7,383 (6.3%)	174,878 (5.0%)	2,891,426. 00 (3.4%)	16,625,126 (5.8%)	2,252 (SD=22,101)	186 (129-284)
Pfizer	7,125 (6.1%)	188,439 (5.4%)	3,740,677. 35 (4.4%)	18,464,785 (6.5%)	2,591 (SD=21,482)	236 (141-573)
Depression	1,567	41,472	2,441,950	6,259,581	3,995 (SD=15,895)	1,941 (659 – 3,264)
Servier	803 (51.2%)	19,671 (47.4%)	1,497,510 (61.3%)	3,757,665 (60.0%)	4,680 (SD=1,7837)	2,164 (921 - 3,145)
AstraZeneca	361 (23.0%)	9,577 (23.1%)	551,985 (22.6%)	1,269,764 (20.3%)	3,517 (SD =5,306)	1,082 (126-2,045)
Pfizer	251 (16.0%)	5,160 (12.4%)	182,306 (7.5%)	326,255 (5.2%)	1,300 (SD=1,846)	420 (195-1,978)
Eli Lilly	57 (3.6%)	1,175 (2.8%)	28,902 (1.2%)	47,485 (0.8%)	833 (SD=1,591)	165 (75-950)
Janssen	33 (2.1%)	974 (2.35%)	5,760 (0.24%)	56,953 (0.91%)	1,726 (SD=5,788)	187 (106-273)
Osteoporosis	1,375	33,916	2,314,319	6,073,333	4,417 (SD=21,611)	686 (217- 2,500)
Amgen	431 (31.4%)	10,120 (29.84%)	943,254 (40.8%)	2,114,304 (34.8%)	4,906 (SD=29,502)	259 (175-630)
Novartis	274 (19.9%)	5,735 (16.91%)	308,064 (13.3%)	971,212 (16.0%)	3,545 (SD=16,701)	369 (159-2,011)
GSK	249 (18.1%)	5,273 (15.55%)	474,364 (20.5%)	928,803 (15.3%)	3,730 (SD=11,982)	2,354 (1,500-3,532)
Servier	206 (15.0%)	4,344 (12.81%)	283,954.11 (12.3%)	523,699.04 (8.6%)	2,542 (SD=6,636)	1,647 (546-2,939)

<b>Company</b>	<b>Number of events (% of category)</b>	<b>Number of attendees (% of category)</b>	<b>Total cost of food and beverage (\$AUD)</b>	<b>Total cost of functions (\$AUD)</b>	<b>Mean total cost per event (SD) (AUD\$)</b>	<b>Median total cost per event (IQR) (AUD\$)</b>
Sanofi	119 (8.7%)	3,798 (11.20%)	100,970.91 (4.4%)	190,200.21 (3.1%)	1,598 (SD=3,205)	440 (120-1,755)
Overactive bladder	190	21,270	467,096	1,136,665	5,951 (SD=41,070)	2,024 (773-3,379)
Astellas	77 (40.5%)	2,294 (10.8%)	113,572 (24.3%)	209,663.47 (18.5%)	2,723 (SD=2,616)	2,277 (1,568-2,956)
CSL	76 (40.0%)	1,950 (9.2%)	94,902 (20.3%)	181,431 (16.0%)	2,387 (SD=2,399)	1,664.50 (169-3,579)
AstraZeneca	9 (4.7%)	194 (0.9%)	3,802 (0.8%)	11,911 (1.0%)	1,323 (SD=883)	795.07 (795-1,778)
Allergan	6 (3.2%)	681 (3.2%)	14,068 (3.0%)	54,569 (4.8%)	9,095 (SD=6,445)	10,654 (1,389-15,148)
Bristol-Myers Squibb	6 (3.2%)	2,710 (12.7%)	900 (0.2%)	66,400 (5.8%)	11,067 (SD=7,645)	16,000 (1,350-16,000)

**On-line Appendix Figure 1**

**Annual sales of agomelatine, slow release quetiapine (Seroquel XR)\* and other formulations of quetiapine (Sequase, Seroquel)**



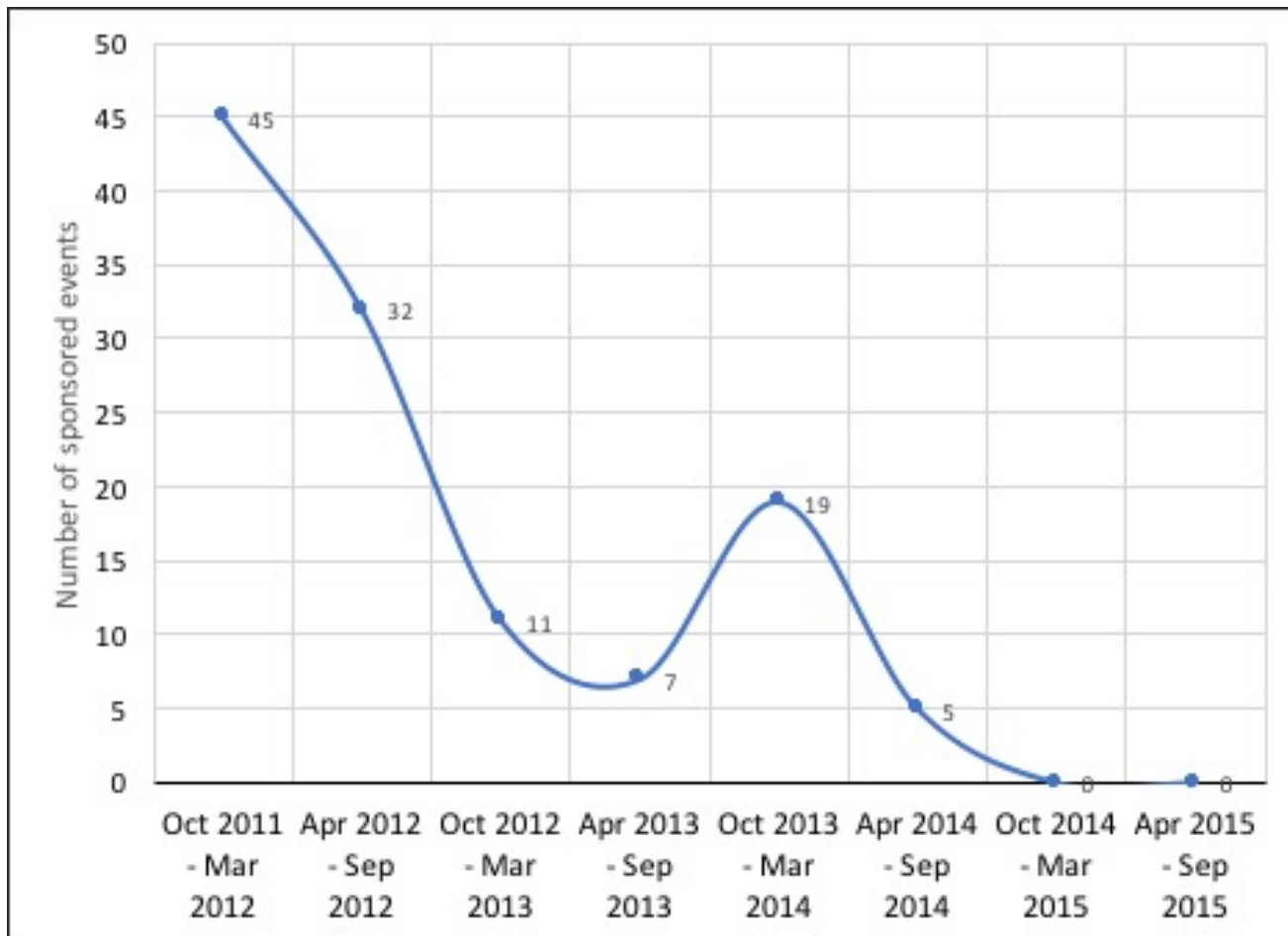
Agomelatine: 1 unit = 28 days@ 25mg/day; quetiapine (Seroquel XR, Sequase, Seroquel): 1 unit = 60 days (various doses) Source: IMS Quintiles

\*slow release quetiapine (Seroquel XR) is the only formulation of quetiapine that is indicated for use in depression and in generalised anxiety



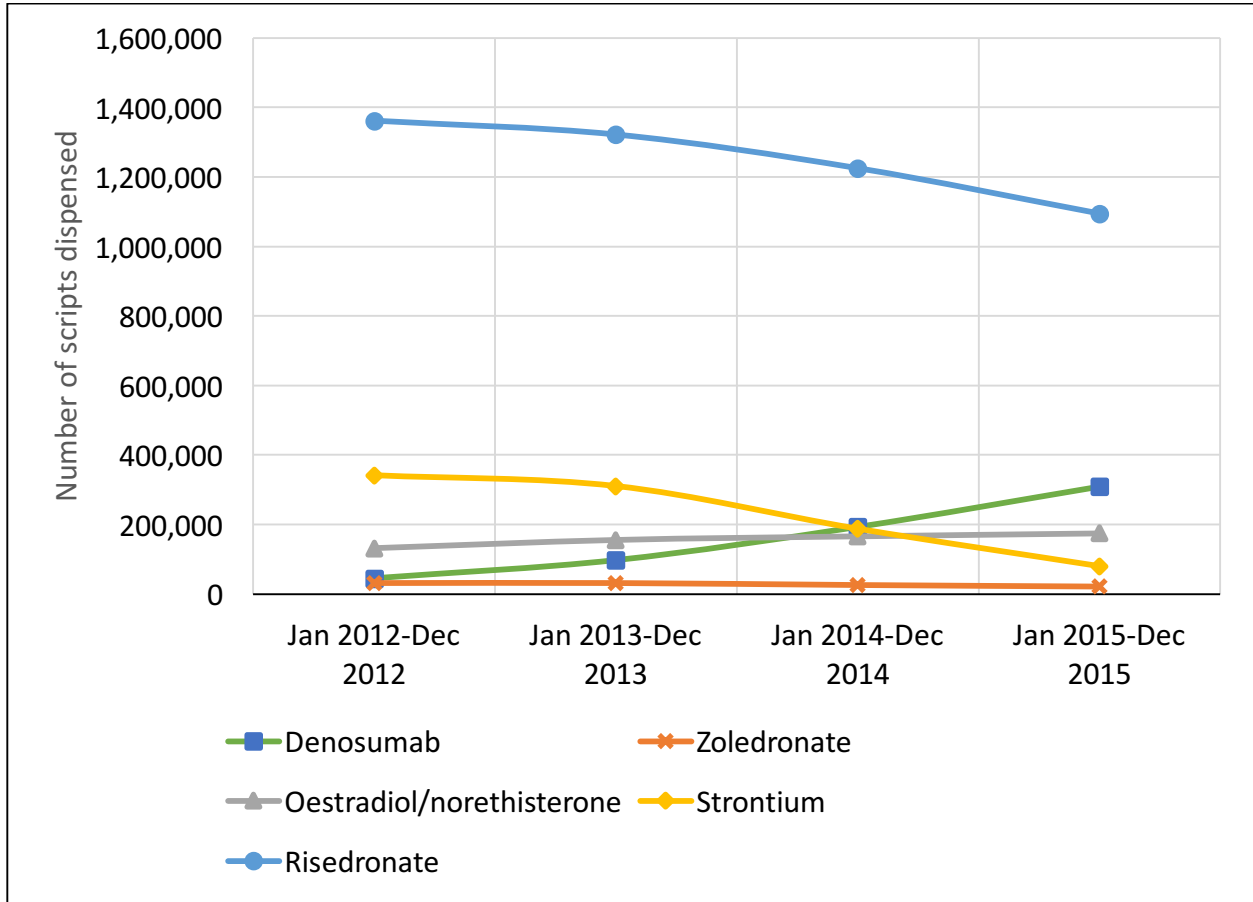
On-line Appendix Figure 2

Osteoporosis-related events sponsored by Sanofi



**On-line Appendix Figure 3**

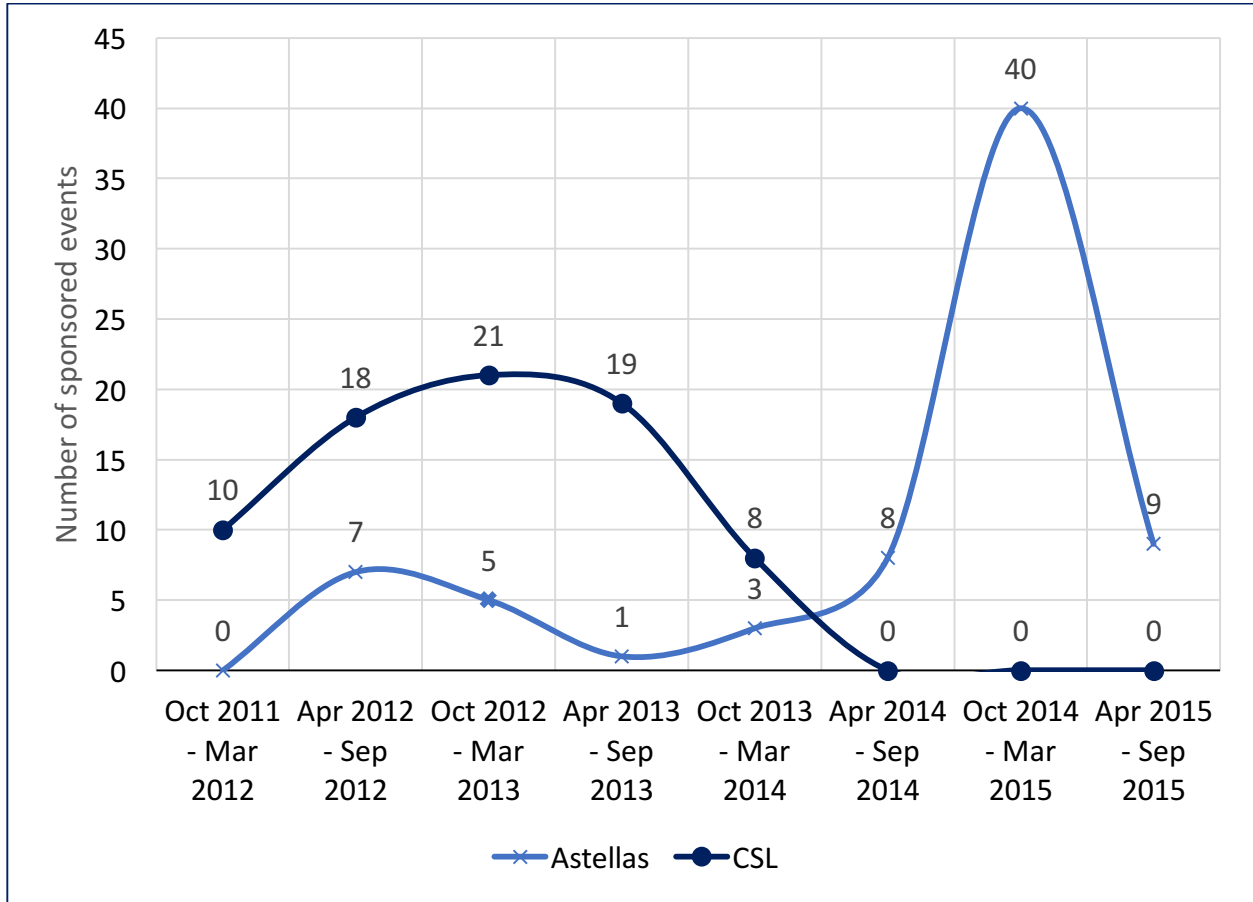
**Number of scripts dispensed for osteoporosis drugs, Pharmaceutical Benefits Scheme (PBS)**



Source: Australian Statistics on Medicines 2012 to 2015. Available at: <https://www.pbs.gov.au/info/browse/statistics#ASM>

**On-line Appendix Figure 4**

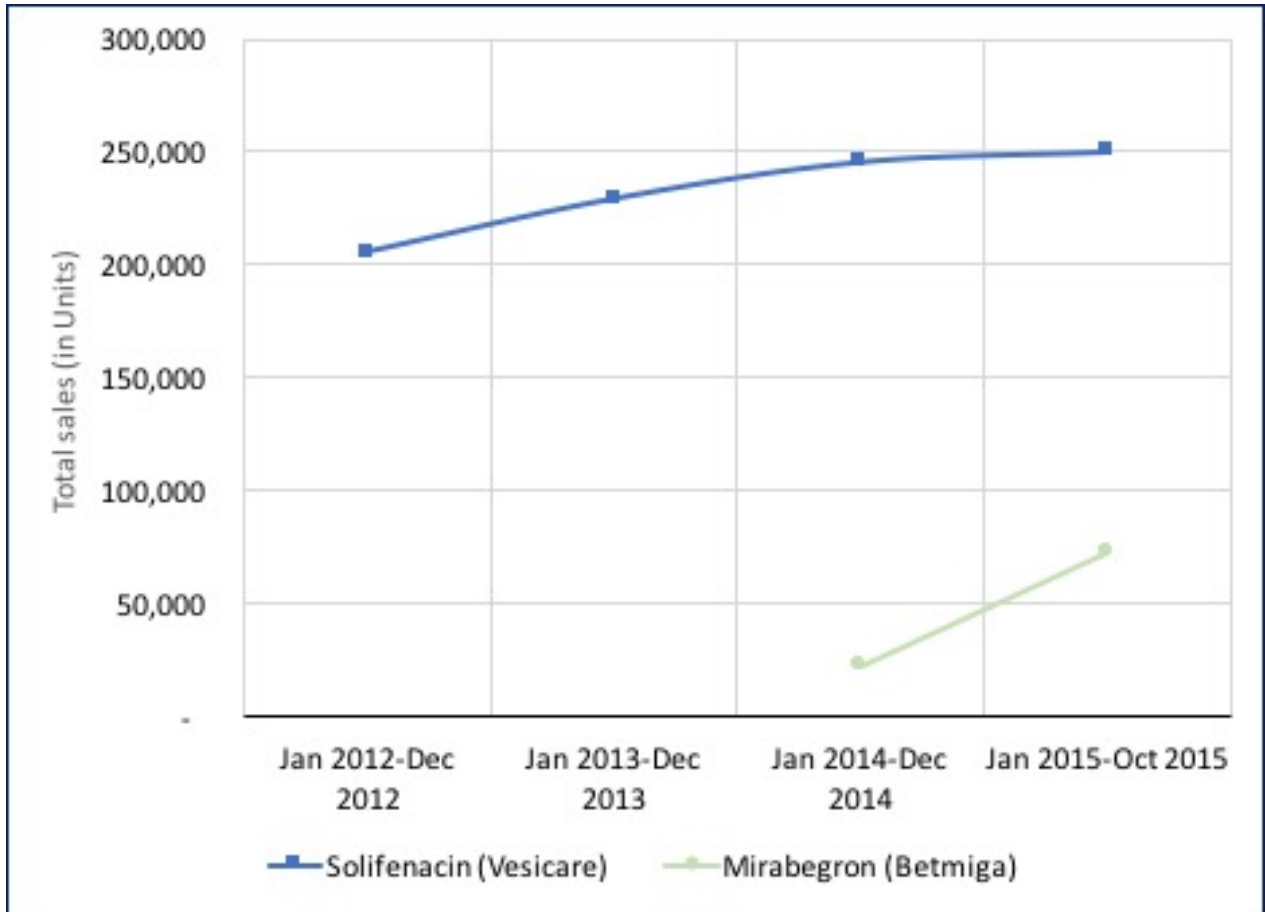
**Event sponsorship over the study period by lead overactive bladder sponsors**



*Note:* CSL marketed solifenacin in Australia from February 2011 to October 2014, when marketing rights shifted to Astellas. Astellas also markets mirabegron, approved in Australia in February 2014.

**On-line Appendix Figure 5**

**Sales of non-PBS funded overactive bladder drugs over the study period**



Mirabegron: 1 unit =30 days@ 25mg/day; solifenacin: 30 days@ 5mg or 10mg/day. Source: IMS Quintiles