

## SUPPLEMENTAL MATERIAL

### **Off-hour Admission and Mortality Risk for 28 Specific Diseases: A Systematic Review and Meta-analysis of 251 cohorts**

Yanfeng Zhou<sup>§</sup>, PhD, Wenzhen Li<sup>§</sup>, PhD, Chulani Herath, PhD, Jiahong Xia, MD, PhD, Bo Hu, MD, PhD, Fujian Song, PhD, Shiyi Cao<sup>\*</sup>, PhD, Zuxun Lu<sup>\*</sup>, MD, PhD

**Supplemental Table S1. Study Characteristics for Cohorts of Off-hour Admission and Mortality Risk.**

<b>Disease</b>	<b>First author, publication year</b>	<b>Study period</b>	<b>Country or region</b>	<b>Sample size</b>	<b>NOS score</b>	<b>Data source</b>	<b>Admission time</b>	<b>Mortality type</b>	<b>Outcome Adjusted</b>	<b>OR</b>	<b>LL</b>	<b>UL</b>
myocardial infarction	Bell et al <sup>1</sup>	1988-1997	North America	160220	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.03	1.00	1.06
myocardial infarction	Henriques et al <sup>2</sup>	1994-2000	Europe and Australia	1702	7	clinical registries	night vs. day	30-day	Unadjusted	2.26	1.26	4.08
myocardial infarction	Cram et al <sup>3</sup>	1998	North America	42974	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.09	1.00	1.17
myocardial infarction	Sadeghi et al <sup>4</sup>	1997-1999	North America	2036	9	clinical registries	weekend and night vs. weekday	30-day	Adjusted	1.99	0.74	5.37
myocardial infarction	Magid et al <sup>5</sup>	1999-2002	North America	102086	9	clinical registries	weekend and night vs. weekday	In-hospital	Adjusted	1.07	1.01	1.14
myocardial infarction	Assali et al <sup>6</sup>	2001-2004	Other countries	273	9	clinical registries	night vs. day	In-hospital	Unadjusted	5.22	1.06	25.60
myocardial infarction	Becker et al <sup>7</sup>	1989-1998	North America	922074	6	administrative data	weekend vs. weekday	30-day	Unadjusted	1.01	1.00	1.02
myocardial infarction	Kostis et al <sup>8</sup> (1987-1990)	1987-1990	North America	231164	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.03	1.01	1.06
myocardial infarction	Kostis et al <sup>8</sup> (1991-1994)	1991-1994	North America	231164	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.03	1.00	1.05
myocardial infarction	Kostis et al <sup>8</sup> (1995-1998)	1995-1998	North America	231164	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.02	0.99	1.04

**Supplemental Table S1. Study Characteristics for Cohorts of Off-hour Admission and Mortality Risk (continued).**

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myocardial infarction	Kostis et al <sup>8</sup> (1999-2002)	1999-2002	North America	231164	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.06	1.02	1.09
myocardial infarction	Ortolani et al <sup>9</sup>	2003-2005	Europe and Australia	985	8	clinical registries	weekend and night vs. weekday	In-hospital	Adjusted	1.23	0.66	2.30
myocardial infarction	Slonka et al <sup>10</sup>	1998-2003	Europe and Australia	1778	7	clinical registries	weekend and night vs. weekday	In-hospital	Unadjusted	0.91	0.60	1.38
myocardial infarction	Srimahachota et al <sup>11</sup>	1999-2003	Other countries	256	9	clinical registries	weekend and night vs. weekday	In-hospital	Unadjusted	1.04	0.46	2.35
myocardial infarction	Berger et al <sup>12</sup>	1997-2006	Europe and Australia	12480	9	clinical registries	weekend and night vs. weekday	In-hospital	Adjusted	1.04	0.92	1.18
myocardial infarction	Evangelista et al <sup>13</sup>	2002	Other countries	869	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.71	1.08	2.71
myocardial infarction	Glaser et al <sup>14</sup>	1997-2006	North America	685	9	clinical registries	night vs. day	In-hospital	Adjusted	1.17	0.50	2.72
myocardial infarction	Jneid et al <sup>15</sup>	2000-2005	North America	62814	8	clinical registries	weekend and night vs. weekday	In-hospital	Adjusted	0.99	0.93	1.06

**Supplemental Table S1. Study Characteristics for Cohorts of Off-hour Admission and Mortality Risk (continued).**

<b>Disease</b>	<b>First author, publication year</b>	<b>Study period</b>	<b>Country or region</b>	<b>Sample size</b>	<b>NOS score</b>	<b>Data source</b>	<b>Admission time</b>	<b>Mortality type</b>	<b>Outcome Adjusted</b>	<b>OR</b>	<b>LL</b>	<b>UL</b>
myocardial infarction	Kruth et al <sup>16</sup>	1994-2002	Europe and Australia	11516	9	clinical registries	weekend and night vs. weekday	In-hospital	Unadjusted	1.18	1.03	1.34
myocardial infarction	Becker et al <sup>17</sup>	2003-2005	Europe and Australia	1890	8	clinical registries	weekend and night vs. weekday	30-day	Unadjusted	1.02	0.73	1.42
myocardial infarction	Cubeddu et al <sup>18</sup>	2003-2007	North America	747	8	clinical registries	weekend and night vs. weekday	In-hospital	Adjusted	3.98	1.10	14.39
myocardial infarction	Albuquerque et al <sup>19</sup>	2004-2008	Other countries	274	7	clinical registries	weekend and night vs. weekday	In-hospital	Unadjusted	2.04	0.83	5.00
myocardial infarction	Lairez et al <sup>20</sup>	2005-2008	Europe and Australia	2266	8	clinical registries	weekend and night vs. weekday	In-hospital	Adjusted	2.81	1.56	5.06
myocardial infarction	Pollack et al <sup>21</sup>	2001-2003	North America	34297	7	clinical registries	weekend and night vs. weekday	In-hospital	Adjusted	0.95	0.86	1.04
myocardial infarction	Uyarel et al <sup>22</sup>	2003-2008	Other countries	2644	8	clinical registries	night vs. day	In-hospital	Adjusted	0.98	0.70	1.37
myocardial infarction	Aylin et al <sup>23</sup>	2005-2006	Europe and Australia	68932	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.08	1.03	1.13

**Supplemental Table S1. Study Characteristics for Cohorts of Off-hour Admission and Mortality Risk (continued).**

<b>Disease</b>	<b>First author, publication year</b>	<b>Study period</b>	<b>Country or region</b>	<b>Sample size</b>	<b>NOS score</b>	<b>Data source</b>	<b>Admission time</b>	<b>Mortality type</b>	<b>Outcome Adjusted</b>	<b>OR</b>	<b>LL</b>	<b>UL</b>
myocardial infarction	Cardoso et al <sup>24</sup>	2009-2010	Other countries	112	7	clinical registries	night vs. day	In-hospital	Unadjusted	2.53	0.67	9.53
myocardial infarction	Clarke et al <sup>25</sup>	2002-2006	Europe and Australia	17910	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.15	1.03	1.26
myocardial infarction	Gonzalez et al <sup>26</sup>	2006-2009	North America	786	7	clinical registries	weekend and night vs. weekday	In-hospital	Unadjusted	0.71	0.40	1.28
myocardial infarction	Hong et al <sup>27</sup>	2003-2007	Other countries	97466	8	administrative data	weekend vs. weekday	30-day	Adjusted	1.21	1.16	1.26
myocardial infarction	Maier et al <sup>28</sup>	2004-2007	Europe and Australia	2131	8	clinical registries	weekend and night vs. weekday	In-hospital	Adjusted	2.50	1.38	4.54
myocardial infarction	Casella et al <sup>29</sup>	2004-2006	Europe and Australia	3072	8	clinical registries	weekend and night vs. weekday	In-hospital	Adjusted	0.70	0.49	1.00
myocardial infarction	Graham et al <sup>30</sup>	1999-2006	North America	1664	8	clinical registries	Weekend and night	30-day	Adjusted	1.26	0.78	2.03
myocardial infarction	Siudak et al <sup>31</sup>	2005-2007	Europe and Australia	1650	7	clinical registries	weekend and night vs. weekday	In-hospital	Unadjusted	1.28	0.76	2.16
myocardial infarction	Al Faleh et al <sup>32</sup>	2005-2007	Other countries	1139	9	clinical registries	weekend and night vs. weekday	In-hospital	Unadjusted	1.17	0.66	2.10

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myocardial infarction	de Boer et al <sup>33</sup>	2000-2009	Europe and Australia	4352	8	clinical registries	weekend and night vs. weekday	30-day	Adjusted	1.05	0.84	1.31
myocardial infarction	Hansen et al <sup>34</sup> (1997-1999)	1997-1999	Europe and Australia	92169	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.10	1.01	1.20
myocardial infarction	Hansen et al <sup>34</sup> (2000-2002)	2000-2002	Europe and Australia	92169	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.04	0.95	1.13
myocardial infarction	Hansen et al <sup>34</sup> (2003-2005)	2003-2005	Europe and Australia	92169	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.02	0.93	1.12
myocardial infarction	Hansen et al <sup>34</sup> (2006-2009)	2006-2009	Europe and Australia	92169	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.05	0.95	1.16
myocardial infarction	Noman et al <sup>35</sup>	2008-2011	Europe and Australia	2571	8	clinical registries	weekend and night vs. weekday	In-hospital	Adjusted	1.33	0.73	2.41
myocardial infarction	Cubeddu et al <sup>36</sup>	2003-2007	North America	2440	8	clinical registries	weekend and night vs. weekday	In-hospital	Adjusted	1.64	0.95	2.84
myocardial infarction	Gyenes et al <sup>37</sup>	1999-2008	North America	6745	7	clinical registries	weekend vs. weekday	In-hospital	Adjusted	1.52	1.15	2.01
myocardial infarction	Khera et al <sup>38</sup>	2001-2010	North America	1434579	7	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.11	1.07	1.16

**Supplemental Table S1. Study Characteristics for Cohorts of Off-hour Admission and Mortality Risk (continued).**

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myocardial infarction	O'Neill et al <sup>39</sup>	2005-2011	North America	11981	7	clinical registries	weekend vs. weekday	30-day	Adjusted	1.06	0.82	1.38
myocardial infarction	Rathod et al <sup>40</sup>	2004-2012	Europe and Australia	3347	8	clinical registries	weekend and night vs. weekday	30-day	Adjusted	1.04	0.78	1.39
myocardial infarction	Shavelle et al <sup>41</sup>	2007-2009	North America	2565	7	clinical registries	night vs. day	In-hospital	Unadjusted	0.94	0.62	1.43
myocardial infarction	Showkathali et al <sup>42</sup>	2009-2011	Europe and Australia	1471	7	clinical registries	weekend and night vs. weekday	30-day	Unadjusted	1.10	0.60	12.00
myocardial infarction	Snelder et al <sup>43</sup> (1985-1990)	1985-1990	Europe and Australia	947	7	clinical registries	weekend vs. weekday	30-day	Adjusted	1.00	0.66	1.51
myocardial infarction	Snelder et al <sup>43</sup> (1990-2000)	1990-2000	Europe and Australia	1928	7	clinical registries	weekend vs. weekday	30-day	Adjusted	0.70	0.51	0.97
myocardial infarction	Snelder et al <sup>43</sup> (2000-2008)	2000-2008	Europe and Australia	3945	7	clinical registries	weekend vs. weekday	30-day	Adjusted	1.01	0.76	1.36
myocardial infarction	Al-Asadi et al <sup>44</sup>	2010	Other countries	419	7	clinical registries	weekend vs. weekday	In-hospital	Adjusted	0.66	0.31	1.39
myocardial infarction	Nagrebetskyi et al <sup>45</sup>	2001-2011	Europe and Australia	633388	7	administrative data	weekend vs. weekday	30-day	Unadjusted	1.01	0.99	1.03
myocardial infarction	Sterling et al <sup>46</sup>	2005-2009	North America	2463	8	administrative data	weekend and night vs. weekday	In-hospital	Adjusted	0.83	0.52	1.34

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myocardial infarction	Sorita et al <sup>47</sup>	1998-2010	North America	6086	9	clinical registries	weekend and night vs. weekday	In-hospital	Adjusted	1.12	0.84	1.49
myocardial infarction	Isogai et al <sup>48</sup>	2010-2012	Other countries	111200	9	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.14	1.08	1.21
stroke	Cram et al <sup>3</sup>	1998	North America	24565	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.04	0.93	1.16
stroke	Hasegawa et al <sup>49</sup>	2000-2001	Other countries	1134	8	clinical registries	weekend vs. weekday	In-hospital	Adjusted	2.10	1.25	3.51
stroke	Schmulewitz et al <sup>50</sup>	2001	Europe and Australia	524	7	administrative data	weekend vs. weekday	In-hospital	Adjusted	0.78	0.51	1.18
stroke	Saposnik et al <sup>51</sup>	2003-2004	North America	26676	7	administrative data	weekend vs. weekday	In-hospital	Unadjusted	1.14	1.02	1.27
stroke	Turin et al <sup>52</sup>	1988-2003	Other countries	1578	7	clinical registries	weekend vs. weekday	30-day	Unadjusted	1.58	0.85	2.95
stroke	Jauss et al <sup>53</sup>	2003-2006	Europe and Australia	37396	9	clinical registries	weekend and night vs. weekday	7-day	Unadjusted	1.00	0.86	1.16
stroke	Reeves et al <sup>54</sup>	2003-2007	North America	187669	8	clinical registries	weekend and night vs. weekday	In-hospital	Adjusted	1.09	1.03	1.15



**Supplemental Table S1. Study Characteristics for Cohorts of Off-hour Admission and Mortality Risk (continued).**

<b>Disease</b>	<b>First author, publication year</b>	<b>Study period</b>	<b>Country or region</b>	<b>Sample size</b>	<b>NOS score</b>	<b>Data source</b>	<b>Admission time</b>	<b>Mortality type</b>	<b>Outcome Adjusted</b>	<b>OR</b>	<b>LL</b>	<b>UL</b>
stroke	Tung et al <sup>55</sup>	2005	Other countries	34347	7	administrative data	weekend vs. weekday	30-day	Adjusted	1.22	1.06	1.40
stroke	Fang et al <sup>56</sup>	2003-2008	North America	12432	8	clinical registries	weekend vs. weekday	7-day	Unadjusted	1.17	1.00	1.37
stroke	Hoh et al <sup>57</sup>	2002-2007	North America	599087	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.00	0.97	1.03
stroke	Kazley et al <sup>58</sup>	1998-2006	North America	78657	7	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.02	0.96	1.09
stroke	McKinney et al <sup>59</sup> (Comprehensive Stroke Center)	1996-2007	North America	134441	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.00	0.92	1.09
stroke	McKinney et al <sup>59</sup> (Non-Stroke Center)	1996-2007	North America	134441	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.10	1.01	1.20
stroke	McKinney et al <sup>59</sup> (Primary Stroke Center)	1996-2007	North America	134441	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.07	1.00	1.14
stroke	Ogbu et al <sup>60</sup>	2000-2004	Europe and Australia	82219	7	administrative data	weekend vs. weekday	7-day	Adjusted	1.27	1.20	1.34
stroke	Albright et al <sup>61</sup>	2002-2009	North America	2090	7	clinical registries	weekend vs. weekday	In-hospital	Unadjusted	0.84	0.58	1.22

**Supplemental Table S1. Study Characteristics for Cohorts of Off-hour Admission and Mortality Risk (continued).**

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stroke	Madej-Fermo et al <sup>62</sup>	2005-2010	North America	917	7	clinical registries	weekend and night vs. weekday	In-hospital	Unadjusted	0.81	0.54	1.23
stroke	Martinez-martinez et al <sup>63</sup>	2008-2009	Europe and Australia	674	8	clinical registries	weekend and night vs. weekday	In-hospital	Adjusted	1.08	0.48	2.45
stroke	Niewada et al <sup>64</sup>	2004-2005	Europe and Australia	19667	9	clinical registries	weekend vs. weekday	In-hospital	Adjusted	1.20	1.09	1.31
stroke	Palmer et al <sup>65</sup>	2009-2010	Europe and Australia	93621	7	administrative data	weekend vs. weekday	7-day	Adjusted	1.18	1.12	1.24
stroke	Streifler et al <sup>66</sup>	2004-2010	Other countries	4827	9	clinical registries	weekend and night vs. weekday	In-hospital	Unadjusted	1.38	1.11	1.73
stroke	Barros et al <sup>67</sup>	2006-2008	Other countries	430	6	clinical registries	weekend vs. weekday	30-day	Unadjusted	0.92	0.36	2.37
stroke	Bejot et al <sup>68</sup> (1985-2003)	1985-2003	Europe and Australia	3924	7	clinical registries	weekend vs. weekday	30-day	Adjusted	1.26	1.06	1.51
stroke	Bejot et al <sup>68</sup> (2004-2010)	2004-2010	Europe and Australia	1940	7	clinical registries	weekend vs. weekday	30-day	Adjusted	0.99	0.69	1.43
stroke	Concha et al <sup>69</sup>	2000-2007	Europe and Australia	36762	7	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.13	1.07	1.20

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stroke	Lee et al <sup>70</sup>	2010–2011	Other countries	10774	8	administrative data	weekend and night vs. weekday	30-day	Adjusted	1.58	1.06	2.35
stroke	Nishimura et al <sup>71</sup>	2011	Other countries	68718	4	administrative data	weekend vs. weekday	30-day	Adjusted	1.11	1.04	1.18
stroke	Bray et al <sup>72</sup>	2011-2012	Europe and Australia	56666	7	administrative data	weekend vs. weekday	30-day	Adjusted	0.96	0.85	1.10
stroke	Kamitani et al <sup>73</sup>	2010-2011	Other countries	35685	7	administrative data	weekend and night vs. weekday	In-hospital	Adjusted	1.06	1.00	1.13
stroke	Lusic et al <sup>74</sup>	2005-2010	North America	3868	7	clinical registries	weekend vs. weekday	In-hospital	Unadjusted	1.06	0.89	1.26
stroke	Bell et. al <sup>1</sup>	1988-1997	North America	34136	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.00	0.94	1.06
stroke	O'Brien et al <sup>75</sup>	1987-2004	North America	821	8	administrative data	weekend vs. weekday	30-day	Adjusted	1.17	0.62	2.23
pulmonary embolism	Bell et al <sup>1</sup>	1988-1997	North America	11686	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.19	1.03	1.36
pulmonary embolism	Cram et al <sup>3</sup>	1998	North America	4341	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.42	1.15	1.76
pulmonary embolism	Schmulewitz et al <sup>50</sup>	2001	Europe and Australia	137	7	administrative data	weekend vs. weekday	In-hospital	Adjusted	0.61	0.09	2.57

**Supplemental Table S1. Study Characteristics for Cohorts of Off-hour Admission and Mortality Risk (continued).**

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pulmonary embolism	Aujesky et al <sup>76</sup>	2000-2002	North America	15531	6	administrative data	weekend vs. weekday	30-day	Adjusted	1.17	1.03	1.34
pulmonary embolism	Gallerani et al <sup>77</sup>	1999-2009	Europe and Australia	26560	6	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.18	1.10	1.25
pulmonary embolism	Nanchal et al <sup>78</sup>	2000-2008	North America	1143707	7	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.17	1.11	1.22
pulmonary embolism	Concha et al <sup>69</sup>	2000-2007	Europe and Australia	15086	7	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.64	1.34	1.99
pulmonary embolism	Giri et al <sup>79</sup>	2011	North America	41210	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.07	0.97	1.19
renal failure	Bell et al <sup>1</sup>	1988-1997	North America	3339	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.31	1.09	1.58
renal failure	Cram et al <sup>3</sup>	1998	North America	6164	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.07	0.93	1.24
renal failure	James et al <sup>80</sup>	2003-2006	North America	963730	7	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.07	1.02	1.12
renal failure	Concha et al <sup>69</sup>	2000-2007	Europe and Australia	10657	7	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.24	1.07	1.43
renal failure	Sakhuja et al <sup>81</sup>	2005-2009	North America	3278572	7	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.06	1.01	1.10
renal failure	Bell et al <sup>1</sup>	1988-1997	North America	6303	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.08	0.93	1.26

**Supplemental Table S1. Study Characteristics for Cohorts of Off-hour Admission and Mortality Risk (continued).**

<b>Disease</b>	<b>First author, publication year</b>	<b>Study period</b>	<b>Country or region</b>	<b>Sample size</b>	<b>NOS score</b>	<b>Data source</b>	<b>Admission time</b>	<b>Mortality type</b>	<b>Outcome Adjusted</b>	<b>OR</b>	<b>LL</b>	<b>UL</b>
renal failure	Bell et al <sup>1</sup>	1988-1997	North America	5196	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.10	0.94	1.29
renal failure	Aylin et al <sup>23</sup>	2005-2006	Europe and Australia	14134	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.45	1.32	1.6
heart failure	Cram et al <sup>3</sup>	1998	North America	55835	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.03	0.95	1.12
heart failure	Fonarow et al <sup>82</sup>	2003-2004	North America	48612	7	clinical registries	weekend vs. weekday	In-hospital	Adjusted	0.99	0.84	1.17
heart failure	Gallerani et al <sup>83</sup>	2002-2009	Europe and Australia	9657	7	administrative data	weekend vs. weekday	In-hospital	Unadjusted	1.39	1.22	1.58
heart failure	Horwich et al <sup>84</sup>	2005-2008	North America	81810	7	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.13	1.02	1.27
heart failure	Concha et al <sup>69</sup>	2000-2007	Europe and Australia	59789	7	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.16	1.07	1.26
heart failure	Hamaguchi et al <sup>85</sup>	2004-2005	Other countries	1620	7	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.13	0.63	2.00
heart failure	Bell et al <sup>1</sup>	1988-1997	North America	141687	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.00	0.96	1.04
arrhythmia and cardiac arrest	Sprung et al <sup>86</sup>	1990-2000	North America	223	5	clinical registries	weekend and night vs. weekday	In-hospital	Adjusted	5.73	2.32	14.15

**Supplemental Table S1. Study Characteristics for Cohorts of Off-hour Admission and Mortality Risk (continued).**

<b>Disease</b>	<b>First author, publication year</b>	<b>Study period</b>	<b>Country or region</b>	<b>Sample size</b>	<b>NOS score</b>	<b>Data source</b>	<b>Admission time</b>	<b>Mortality type</b>	<b>Outcome Adjusted</b>	<b>OR</b>	<b>LL</b>	<b>UL</b>
arrhythmia and cardiac arrest	Cram et al <sup>5</sup>	1998	North America	29995	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.28	1.08	1.50
arrhythmia and cardiac arrest	Peberdy et al <sup>87</sup>	2000-2007	North America	86748	7	clinical registries	weekend vs. weekday	In-hospital	Unadjusted	1.16	1.12	1.21
arrhythmia and cardiac arrest	Koike et al <sup>88</sup>	2005-2008	Other countries	173137	7	clinical registries	weekends or holidays	30-day	Unadjusted	1.00	0.97	1.04
arrhythmia and cardiac arrest	Moler et al <sup>89</sup>	2003-2004	North America	138	7	administrative data	weekend vs. weekday	In-hospital	Unadjusted	2.61	1.20	5.69
arrhythmia and cardiac arrest	Qureshi et al <sup>90</sup>	2000-2008	North America	1692	7	clinical registries	weekend vs. weekday	In-hospital	Unadjusted	1.10	0.88	1.38
arrhythmia and cardiac arrest	Concha et al <sup>69</sup>	2000-2007	Europe and Australia	10110	7	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.14	1.04	1.25
arrhythmia and cardiac arrest	Bell et al <sup>1</sup>	1988-1997	North America	76907	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.17	1.09	1.25
arrhythmia and cardiac arrest	Aylin et al <sup>23</sup>	2005-2006	Europe and Australia	2576	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.22	1	1.48
arrhythmia and cardiac arrest	Aylin et al <sup>23</sup>	2005-2006	Europe and Australia	86134	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.31	1.17	1.47
intracerebral hemorrhage	Bell et al <sup>1</sup>	1988-1997	North America	10987	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.01	0.93	1.11
intracerebral hemorrhage	Cram et al <sup>3</sup>	1998	North America	6210	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.20	1.08	1.34

**Supplemental Table S1. Study Characteristics for Cohorts of Off-hour Admission and Mortality Risk (continued).**

<b>Disease</b>	<b>First author, publication year</b>	<b>Study period</b>	<b>Country or region</b>	<b>Sample size</b>	<b>NOS score</b>	<b>Data source</b>	<b>Admission time</b>	<b>Mortality type</b>	<b>Outcome Adjusted</b>	<b>OR</b>	<b>LL</b>	<b>UL</b>
intracerebral hemorrhage	Bell et al <sup>1</sup>	1988-1997	North America	3525	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.21	0.98	1.48
intracerebral hemorrhage	Crowley et al <sup>91</sup>	2004	North America	13821	7	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.12	1.05	1.20
intracerebral hemorrhage	Busl et al <sup>92</sup>	2007-2009	North America	14093	7	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.19	1.02	1.38
intracerebral hemorrhage	Clarke et al <sup>25</sup>	2002–2007	Europe and Australia	1781	7	administrative data	weekend vs. weekday	30-day	Adjusted	1.01	0.86	1.16
intracerebral hemorrhage	Jiang et al <sup>93</sup>	2008-2009	Other countries	313	7	administrative data	weekend vs. weekday	In-hospital	Unadjusted	0.79	0.43	1.47
intracerebral hemorrhage	McDowell et al <sup>94</sup>	2009-2013	North America	13821	5	clinical registries	weekend vs. weekday	In-hospital	Unadjusted	1.04	0.55	1.97
gastrointestinal bleeding	Cram et al <sup>3</sup>	1998	North America	9057	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.28	1.04	1.57
gastrointestinal bleeding	Schmulewitz et al <sup>50</sup>	2001	Europe and Australia	584	7	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.65	0.69	3.71
gastrointestinal bleeding	Ananthkrishnan et al <sup>95</sup>	2004	North America	391119	7	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.21	1.09	1.35
gastrointestinal bleeding	Ananthkrishnan et al <sup>95</sup>	2004	North America	28820	7	administrative data	weekend vs. weekday	In-hospital	Adjusted	0.94	0.75	1.18
gastrointestinal bleeding	Dorn et al <sup>96</sup>	1998-2003	North America	75636	7	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.09	1.00	1.18

**Supplemental Table S1. Study Characteristics for Cohorts of Off-hour Admission and Mortality Risk (continued).**

<b>Disease</b>	<b>First author, publication year</b>	<b>Study period</b>	<b>Country or region</b>	<b>Sample size</b>	<b>NOS score</b>	<b>Data source</b>	<b>Admission time</b>	<b>Mortality type</b>	<b>Outcome Adjusted</b>	<b>OR</b>	<b>LL</b>	<b>UL</b>
gastrointestinal bleeding	Myers et al <sup>97</sup>	1998-2005	North America	36734	7	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.05	0.97	1.14
gastrointestinal bleeding	Shaheen et al <sup>98</sup>	1993-2005	North America	237412	7	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.08	1.02	1.15
gastrointestinal bleeding	Button et al <sup>99</sup>	1999-2007	Europe and Australia	24421	7	administrative data	weekend vs. weekday	30-day	Adjusted	1.13	1.02	1.25
gastrointestinal bleeding	Nahon et al <sup>100</sup>	2005-2006	Europe and Australia	3087	7	clinical registries	weekend vs. weekday	In-hospital	Unadjusted	1.42	0.86	2.34
gastrointestinal bleeding	Jairath et al <sup>101</sup>	2007	North America	6749	7	administrative data	weekend vs. weekday	In-hospital	Adjusted	0.93	0.75	1.16
gastrointestinal bleeding	Byun et al <sup>102</sup>	2005-2009	Other countries	294	7	clinical registries	weekend vs. weekday	In-hospital	Unadjusted	1.06	0.57	2.00
gastrointestinal bleeding	de Groot et al <sup>103</sup>	2009-2011	Europe and Australia	571	7	clinical registries	weekend vs. weekday	30-day	Adjusted	2.68	1.07	6.72
gastrointestinal bleeding	Abougergi et al <sup>104</sup>	2009	North America	199008	7	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.11	0.93	1.30
gastrointestinal bleeding	Tufegdzcic et al <sup>105</sup>	2002-2012	Other countries	493	7	clinical registries	weekend vs. weekday	In-hospital	Adjusted	1.20	0.50	2.87
gastrointestinal bleeding	Wu et al <sup>106</sup>	2009-2011	Other countries	744	7	clinical registries	weekends or holidays	30-day	Unadjusted	0.83	0.46	1.49
gastrointestinal bleeding	Bell et al <sup>1</sup>	1988-1997	North America	30129	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.08	0.96	1.20



**Supplemental Table S1. Study Characteristics for Cohorts of Off-hour Admission and Mortality Risk (continued).**

<b>Disease</b>	<b>First author, publication year</b>	<b>Study period</b>	<b>Country or region</b>	<b>Sample size</b>	<b>NOS score</b>	<b>Data source</b>	<b>Admission time</b>	<b>Mortality type</b>	<b>Outcome Adjusted</b>	<b>OR</b>	<b>LL</b>	<b>UL</b>
gastrointestinal bleeding	Aylin et al <sup>23</sup>	2005-2006	Europe and Australia	57937	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.08	1.00	1.17
aortic aneurysm	Bell et al <sup>1</sup>	1988-1997	North America	5454	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.28	1.13	1.46
aortic aneurysm	Cram et al <sup>3</sup>	1998	North America	1682	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	2.13	1.77	2.58
aortic aneurysm	Gallerani et al <sup>107</sup>	1999-2009	Europe and Australia	4559	7	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.32	1.14	1.52
aortic aneurysm	Gallerani et al <sup>108</sup>	2008–2010	Europe and Australia	17319	7	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.34	1.24	1.44
aortic aneurysm	Groves et al <sup>109</sup>	2009	North America	5800	7	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.32	1.13	1.55
aortic aneurysm	Groves et al <sup>109</sup>	2009	North America	1400	7	administrative data	weekend vs. weekday	In-hospital	Adjusted	2.55	1.77	3.68
COPD	Schmulewitz et al <sup>50</sup>	2001	Europe and Australia	821	7	administrative data	weekend vs. weekday	In-hospital	Adjusted	0.85	0.42	1.62
COPD	Clarke et al <sup>25</sup>	2002–2007	Europe and Australia	30522	7	administrative data	weekend vs. weekday	30-day	Adjusted	0.92	0.81	1.04
COPD	Brimms et al <sup>110</sup>	1997-2004	Europe and Australia	9915	7	administrative data	weekend vs. weekday	7-day	Adjusted	1.75	0.75	4.13
COPD	Barba et al <sup>111</sup>	2006-2007	Europe and Australia	289077	7	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.05	1.02	1.08

**Supplemental Table S1. Study Characteristics for Cohorts of Off-hour Admission and Mortality Risk (continued).**

<b>Disease</b>	<b>First author, publication year</b>	<b>Study period</b>	<b>Country or region</b>	<b>Sample size</b>	<b>NOS score</b>	<b>Data source</b>	<b>Admission time</b>	<b>Mortality type</b>	<b>Outcome Adjusted</b>	<b>OR</b>	<b>LL</b>	<b>UL</b>
COPD	Suissa et al <sup>112</sup>	1990-2007	North America	323895	7	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.06	1.03	1.09
COPD	Bell et al <sup>1</sup>	1988-1997	North America	11064	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.05	0.86	1.29
COPD	Bell et al <sup>1</sup>	1988-1997	North America	6512	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.03	0.88	1.21
COPD	Bell et al <sup>1</sup>	1988-1997	North America	52992	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.01	0.94	1.09
COPD	Cram et al <sup>3</sup>	1998	North America	28914	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.06	0.89	1.26
COPD	Cram et al <sup>3</sup>	1998	North America	1947	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.07	0.61	1.86
COPD	Aylin et al <sup>23</sup>	2005-2006	Europe and Australia	106951	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.00	0.94	1.05
breast cancer	Bell et al <sup>1</sup>	1988-1997	North America	5192	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.37	1.19	1.56
breast cancer	Cram et al <sup>3</sup>	1998	North America	350	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	2.86	1.59	5.17
breast cancer	Concha et al <sup>69</sup>	2000-2007	Europe and Australia	1382	7	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.73	1.31	2.29
breast cancer	Aylin et al <sup>23</sup>	2005-2006	Europe and Australia	6382	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.21	1.03	1.41

**Supplemental Table S1. Study Characteristics for Cohorts of Off-hour Admission and Mortality Risk (continued).**

<b>Disease</b>	<b>First author, publication year</b>	<b>Study period</b>	<b>Country or region</b>	<b>Sample size</b>	<b>NOS score</b>	<b>Data source</b>	<b>Admission time</b>	<b>Mortality type</b>	<b>Outcome Adjusted</b>	<b>OR</b>	<b>LL</b>	<b>UL</b>
leukemia	Bell et al <sup>1</sup>	1988-1997	North America	779	7	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.60	1.11	2.31
leukemia	Cram et al <sup>3</sup>	1998	North America	807	7	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.20	0.95	1.51
leukemia	Concha et al <sup>69</sup>	2000-2007	Europe and Australia	2401	7	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.95	1.41	2.68
leukemia	Goodman et al <sup>113</sup>	1999-2011	North America	1204	7	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.00	0.80	1.60
leukemia	Aylin et al <sup>23</sup>	2005-2006	Europe and Australia	12526	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.65	1.42	1.92
neonatal mortality	Gould et al <sup>114</sup>	1995-1997	North America	1615041	8	administrative data	weekend vs. weekday	neonatal	Adjusted	1.01	0.95	1.08
neonatal mortality	Hamilton et al <sup>115</sup>	1999-2000	North America	30463	6	administrative data	weekend vs. weekday	neonatal	Unadjusted	0.94	0.59	1.49
neonatal mortality	Hamilton et al <sup>115</sup>	1999-2000	North America	16720	6	administrative data	weekend vs. weekday	neonatal	Unadjusted	1.39	0.89	2.15
neonatal mortality	Hamilton et al <sup>115</sup>	1999-2000	North America	62535	6	administrative data	weekend vs. weekday	neonatal	Unadjusted	1.73	1.28	2.34
neonatal mortality	Stephansson et al <sup>116</sup>	1991-1997	Europe and Australia	694888	7	administrative data	weekend vs. weekday	neonatal	Adjusted	1.02	0.88	1.18
neonatal mortality	Luo et al <sup>117</sup>	1985-1998	North America	3239972	8	administrative data	weekend vs. weekday	neonatal	Adjusted	0.96	0.91	1.01

**Supplemental Table S1. Study Characteristics for Cohorts of Off-hour Admission and Mortality Risk (continued).**

<b>Disease</b>	<b>First author, publication year</b>	<b>Study period</b>	<b>Country or region</b>	<b>Sample size</b>	<b>NOS score</b>	<b>Data source</b>	<b>Admission time</b>	<b>Mortality type</b>	<b>Outcome Adjusted</b>	<b>OR</b>	<b>LL</b>	<b>UL</b>
neonatal mortality	Bell et al <sup>118</sup>	2001-2005	North America	11137	8	clinical registries	weekend vs. weekday	neonatal	Adjusted	1.00	0.91	1.11
neonatal mortality	Gijssen et al <sup>119</sup>	2003-2007	Europe and Australia	449714	6	clinical registries	weekend vs. weekday	neonatal	Unadjusted	1.16	0.98	1.39
neonatal mortality	Ibrahimou et al <sup>120</sup>	1989-2002	North America	879966	7	administrative data	weekend vs. weekday	neonatal	Adjusted	0.90	0.80	1.00
neonatal mortality	Salihu et al <sup>121</sup>	1989-1997	North America	493143	7	administrative data	weekend vs. weekday	neonatal	Unadjusted	1.13	1.01	1.27
pneumonia	Cram et al <sup>3</sup>	1998	North America	14199	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.00	0.91	1.10
pneumonia	Schmulewitz et al <sup>50</sup>	2001	Europe and Australia	561	7	administrative data	weekend vs. weekday	In-hospital	Adjusted	0.50	0.27	0.88
pneumonia	Chang et al <sup>122</sup>	1997-2008	Other countries	788011	7	administrative data	weekend vs. weekday	30-day	Adjusted	1.03	1.01	1.05
pneumonia	Gathara et al <sup>123</sup>	2005-2009	Other countries	2901	6	clinical registries	weekend vs. weekday	In-hospital	Adjusted	1.15	0.90	1.45
pneumonia	Bell et al <sup>1</sup>	1988-1997	North America	9387	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	0.99	0.83	1.17
pneumonia	Bell et al <sup>1</sup>	1988-1997	North America	10147	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.12	0.97	1.28
pneumonia	Bell et al <sup>1</sup>	1988-1997	North America	98318	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.03	0.98	1.08

**Supplemental Table S1. Study Characteristics for Cohorts of Off-hour Admission and Mortality Risk (continued).**

<b>Disease</b>	<b>First author, publication year</b>	<b>Study period</b>	<b>Country or region</b>	<b>Sample size</b>	<b>NOS score</b>	<b>Data source</b>	<b>Admission time</b>	<b>Mortality type</b>	<b>Outcome Adjusted</b>	<b>OR</b>	<b>LL</b>	<b>UL</b>
pneumonia	Cram et al <sup>5</sup>	1998	North America	58807	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	0.99	0.92	1.06
pneumonia	Aylin et al <sup>23</sup>	2005-2006	Europe and Australia	102465	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.00	0.97	1.04
hip fracture	Bell et al <sup>1</sup>	1988-1997	North America	59670	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	0.97	0.90	1.04
hip fracture	Cram et al <sup>3</sup>	1998	North America	22001	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.13	0.97	1.32
hip fracture	Foss et al <sup>124</sup>	2002-2004	Europe and Australia	600	7	clinical registries	weekend vs. weekday	30-day	Unadjusted	1.14	0.56	2.30
hip fracture	Clarke et al <sup>25</sup>	2002-2007	Europe and Australia	4183	7	administrative data	weekend vs. weekday	30-day	Adjusted	0.78	0.54	1.03
hip fracture	Daugaard et al <sup>125</sup>	2003-2010	Europe and Australia	38020	7	clinical registries	weekend vs. weekday	In-hospital	Adjusted	1.25	1.16	1.35
hip fracture	Thomas et al <sup>126</sup>	2009-2013	Europe and Australia	2987	7	clinical registries	weekend vs. weekday	30-day	Adjusted	1.40	1.02	1.90
trauma	Laupland et al <sup>127</sup>	2002-2006	North America	4000	5	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.02	0.79	1.32
trauma	Carr et al <sup>128</sup>	2006-2008	North America	4382	7	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.03	0.71	1.51
trauma	Carr et al <sup>129</sup>	2004-2008	North America	90461	7	administrative data	weekend vs. weekday	In-hospital	Adjusted	0.89	0.81	0.97

**Supplemental Table S1. Study Characteristics for Cohorts of Off-hour Admission and Mortality Risk (continued).**

<b>Disease</b>	<b>First author, publication year</b>	<b>Study period</b>	<b>Country or region</b>	<b>Sample size</b>	<b>NOS score</b>	<b>Data source</b>	<b>Admission time</b>	<b>Mortality type</b>	<b>Outcome Adjusted</b>	<b>OR</b>	<b>LL</b>	<b>UL</b>
trauma	Di Bartolomeo et al <sup>130</sup>	2011	North America	1940	7	administrative data	night vs. day	30-day	Adjusted	1.49	1.05	2.11
trauma	Arbabi et al <sup>131</sup>	1994-2002	North America	30686	7	administrative data	weekend vs. weekday	In-hospital	Adjusted	0.92	0.83	1.01
subarachnoid hemorrhage	Bell et al <sup>1</sup>	1988-1997	North America	6247	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.1	0.97	1.25
subarachnoid hemorrhage	Cram et al <sup>3</sup>	1998	North America	1918	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.17	0.99	1.39
subarachnoid hemorrhage	Crowley et al <sup>132</sup>	2004	North America	5667	7	administrative data	weekend vs. weekday	30-day	Adjusted	1.03	0.89	1.19
subarachnoid hemorrhage	Zhang et al <sup>133</sup>	2006-2009	Other countries	183	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.77	0.83	3.77
respiratory neoplasm	Concha et al <sup>69</sup>	2000-2007	Europe and Australia	12543	7	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.43	1.29	1.59
respiratory neoplasm	Bell et al <sup>1</sup>	1988-1997	North America	27013	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.19	1.12	1.25
respiratory neoplasm	Cram et al <sup>3</sup>	1998	North America	4784	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.51	1.31	1.73
respiratory neoplasm	Bell et al <sup>1</sup>	1988-1997	North America	868	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	0.96	0.67	1.39
respiratory neoplasm	Aylin et al <sup>23</sup>	2005-2006	Europe and Australia	20701	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.34	1.29	1.44

**Supplemental Table S1. Study Characteristics for Cohorts of Off-hour Admission and Mortality Risk (continued).**

<b>Disease</b>	<b>First author, publication year</b>	<b>Study period</b>	<b>Country or region</b>	<b>Sample size</b>	<b>NOS score</b>	<b>Data source</b>	<b>Admission time</b>	<b>Mortality type</b>	<b>Outcome Adjusted</b>	<b>OR</b>	<b>LL</b>	<b>UL</b>
colorectal cancer	Bell et al <sup>1</sup>	1988-1997	North America	11966	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.15	1.04	1.27
colorectal cancer	Cram et al <sup>3</sup>	1998	North America	2329	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.80	1.44	2.24
colorectal cancer	Bell et al <sup>1</sup>	1988-1997	North America	5018	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.23	1.05	1.43
colorectal cancer	Aylin et al <sup>23</sup>	2005-2006	Europe and Australia	8994	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.08	0.95	1.23
bloodstream infections	Powell et al <sup>134</sup>	2008	North America	120609	7	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.03	1.00	1.07
bloodstream infections	Laupland et al <sup>135</sup>	2000-2008	North America	7722	7	administrative data	weekend vs. weekday	In-hospital	Adjusted	0.99	0.83	1.16
bloodstream infections	Laupland et al <sup>136</sup>	1998-2005	North America	2108	7	administrative data	weekend and night vs. weekday	In-hospital	Adjusted	0.92	0.70	1.22
bloodstream infections	Cram et al <sup>3</sup>	1998	North America	25690	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.10	1.03	1.17
bloodstream infections	Bell et al <sup>1</sup>	1988-1997	North America	18853	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	0.99	0.91	1.07
bloodstream infections	Aylin et al <sup>23</sup>	2005-2006	Europe and Australia	16719	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.04	0.96	1.13

**Supplemental Table S1. Study Characteristics for Cohorts of Off-hour Admission and Mortality Risk (continued).**

<b>Disease</b>	<b>First author, publication year</b>	<b>Study period</b>	<b>Country or region</b>	<b>Sample size</b>	<b>NOS score</b>	<b>Data source</b>	<b>Admission time</b>	<b>Mortality type</b>	<b>Outcome Adjusted</b>	<b>OR</b>	<b>LL</b>	<b>UL</b>
traumatic brain injury	Schneider et al <sup>137</sup>	2006-2008	North America	38675	7	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.14	1.05	1.23
traumatic brain injury	Cram et al <sup>3</sup>	1998	North America	2510	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.14	0.95	1.37
traumatic brain injury	Bell et al <sup>1</sup>	1988-1997	North America	4668	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.16	1.00	1.35
malignant neoplasm of genitourinary organs	Cram et al <sup>3</sup>	1998	North America	390	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	3.12	1.99	4.00
malignant neoplasm of genitourinary organs	Bell et al <sup>1</sup>	1988-1997	North America	2527	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.22	0.99	1.49
malignant neoplasm of genitourinary organs	Bell et al <sup>1</sup>	1988-1997	North America	4218	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	0.91	0.74	1.11
malignant neoplasm of genitourinary organs	Bell et al <sup>1</sup>	1988-1997	North America	2448	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	0.90	0.71	1.34



**Supplemental Table S1. Study Characteristics for Cohorts of Off-hour Admission and Mortality Risk (continued).**

<b>Disease</b>	<b>First author, publication year</b>	<b>Study period</b>	<b>Country or region</b>	<b>Sample size</b>	<b>NOS score</b>	<b>Data source</b>	<b>Admission time</b>	<b>Mortality type</b>	<b>Outcome Adjusted</b>	<b>OR</b>	<b>LL</b>	<b>UL</b>
malignant neoplasm of genitourinary organs	Schmid et al <sup>138</sup>	1998-2009	North America	534011	7	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.20	1.14	1.27
malignant neoplasm of genitourinary organs	Bell et al <sup>1</sup>	1988-1997	North America	8369	7	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.21	1.06	1.37
malignant neoplasm of genitourinary organs	Aylin et al <sup>23</sup>	2005-2006	Europe and Australia	6935	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.42	1.22	1.64
diverticulitis	Bell et al <sup>1</sup>	1988-1997	North America	24278	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.08	0.86	1.34
diverticulitis	Worni et al <sup>139</sup>	2002-2008	North America	31832	7	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.00	0.86	1.16
diverticulitis	Cram et al <sup>3</sup>	1998	North America	11850	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.14	0.84	1.54
peptic ulcer	Bell et al <sup>1</sup>	1988-1997	North America	19214	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	0.98	0.82	1.17
peptic ulcer	Bell et al <sup>1</sup>	1988-1997	North America	13380	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.01	0.81	1.25

**Supplemental Table S1. Study Characteristics for Cohorts of Off-hour Admission and Mortality Risk (continued).**

<b>Disease</b>	<b>First author, publication year</b>	<b>Study period</b>	<b>Country or region</b>	<b>Sample size</b>	<b>NOS score</b>	<b>Data source</b>	<b>Admission time</b>	<b>Mortality type</b>	<b>Outcome Adjusted</b>	<b>OR</b>	<b>LL</b>	<b>UL</b>
peptic ulcer	Cram et al <sup>3</sup>	1998	North America	7434	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	0.80	0.58	1.12
peptic ulcer	Cram et al <sup>3</sup>	1998	North America	6059	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.64	1.22	2.20
aspiration pneumonia	Bell et al <sup>1</sup>	1988-1997	North America	8250	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.10	1	1.20
aspiration pneumonia	Cram et al <sup>3</sup>	1998	North America	12481	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	0.93	0.83	1.04
aspiration pneumonia	Aylin et al <sup>23</sup>	2005-2006	Europe and Australia	6233	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	0.97	0.86	1.10
pancreatic cancer	Bell et al <sup>1</sup>	1988-1997	North America	5723	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.19	1.05	1.36
pancreatic cancer	Cram et al <sup>3</sup>	1998	North America	969	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.27	0.96	1.67
pancreatic cancer	Aylin et al <sup>23</sup>	2005-2006	Europe and Australia	5063	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.51	1.29	1.77
lymphoma	Bell et al <sup>1</sup>	1988-1997	North America	5880	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.14	0.99	1.30
lymphoma	Cram et al <sup>3</sup>	1998	North America	1303	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.07	0.82	1.40
lymphoma	Aylin et al <sup>23</sup>	2005-2006	Europe and Australia	7992	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.33	1.12	1.57

**Supplemental Table S1. Study Characteristics for Cohorts of Off-hour Admission and Mortality Risk (continued).**

<b>Disease</b>	<b>First author, publication year</b>	<b>Study period</b>	<b>Country or region</b>	<b>Sample size</b>	<b>NOS score</b>	<b>Data source</b>	<b>Admission time</b>	<b>Mortality type</b>	<b>Outcome Adjusted</b>	<b>OR</b>	<b>LL</b>	<b>UL</b>
intestinal obstruction	Bell et al <sup>1</sup>	1988-1997	North America	43541	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.08	0.96	1.21
intestinal obstruction	Cram et al <sup>3</sup>	1998	North America	17979	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.14	0.95	1.35
intestinal obstruction	Aylin et al <sup>23</sup>	2005-2006	Europe and Australia	17328	8	administrative data	weekend vs. weekday	In-hospital	Adjusted	1.02	0.90	1.15
intestinal obstruction	McVay et al <sup>140</sup>	2004-2011	North America	404	7	administrative data	weekend and night vs. weekday	30-day	Unadjusted	1.31	0.26	6.67

OR= odds ratio. LL= lower limit of Confidence Interval. UL= upper limit of Confidence Interval. vs.= versus;

If OR is not given, RR or HR would be used;

Different cohorts in one study had been listed separately.

**Supplemental Data S1. List of references included in meta-analysis.**

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