

## **After UK-withdrawal from Basra City, and the Afghan winter: recent military fatalities in Afghanistan and Iraq by cause and nationality** (issue date: 26 August 2008)

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### **Summary**

**Afghanistan & Iraq:** a) PERIOD 6 (31 March to 17 August 2008, 140 days) is the first of six 140-day periods since 1 May 2006 in which coalition military fatalities were as numerous in Afghanistan as in Iraq: 134 deaths in Iraq, 136 in Afghanistan. In Afghanistan, coalition forces have been engaged in major combat with an average fatality rate of 7 per 1,000 personnel-years (pys) as judged by US, UK and Canada operations {121 deaths in 17,455 pys; 95% CI: 5.7 to 8.2 deaths per 1,000 pys}.

**Iraq in retrospect:** b) Around 2 years ago, in PERIOD 1 (1 May to 17 September 2006) & PERIOD 2 (18 Sept. 2006 to 4 February 2007), coalition fatalities in pre-surge Iraq were 299 and 436. US deployment to Iraq was 145,000 troops and the US military fatality rate had risen from 5.0 (95% CI: 4.4 to 5.6) to 7.5 (6.8 to 8.2) per 1,000 personnel-years, the latter consistent with major combat. SURGE swiftly followed. By PERIOD 5 (12 Nov. 2007 to 30 March 2008) & PERIOD 6 (31 March to 17 August 2008), when post-surge US deployment was back to 155,000 and 150,000, coalition fatalities had decreased to 156 and 134 and US military fatality rate was comfortably below 3 per 1,000 pys.

**Afghanistan in retrospect:** c) Recent history in Afghanistan is different-yet-similar: total coalition fatalities in PERIODS 1+2 were 157 (which includes large clusters of 10 US and 14 UK fatalities) but increased to 195 in PERIODS 5+6. {PERIODS 2 and 5 coincided with Afghan winter.} UK deployment increased from 4,500 in PERIOD 1 to over 8,000 by the end of PERIOD 6; and UK military fatality rate decreased from horrendous 19 (95% CI: 13 to 27) – which includes 14 Nimrod deaths – to 8 (95% CI: 5 to 11) per 1,000 personnel-years in PERIOD 6, still consistent with major combat. The combined US+UK+Canadian military fatality rate in PERIOD 6 was 6.9 (95% CI: 5.7 to 8.2) {based on 121 deaths, 45,500 troops, and 17,455 personnel-years} – equivalent to the level of combat that had occasioned SURGE in Iraq.

**Afghanistan & Iraq:** d) In PERIOD 6, which follows the withdrawal of UK troops from Basra City and winter in Afghanistan, the fatality rate of UK troops was high in Afghanistan {24 fatalities in 3,068 personnel-years (pys), namely: 8 deaths per 1,000 pys, 95% CI: 5 to 11} but under 2 per 1,000 pys in Iraq {0 fatalities in 1,534 pys}.

**Afghanistan & Iraq:** e) In PERIOD 6, the fatality rate of US troops in Afghanistan was consistent with major combat at 6.6 deaths per 1,000 pys {88 fatalities in 13,425 personnel-years, 95% CI: 5 to 8 deaths per 1,000 pys} but was as low as 2.2 deaths per 1,000 pys in Iraq {130 fatalities in 59,615 personnel-years, 95% CI: 1.8 to 2.6 deaths per 1,000 pys}.

**Afghanistan:** f) In PERIODS 1+2+3+4+5 (1 May 2006 to 30 March 2008, 700 days), Canadian losses were 66 deaths in 4,616 personnel-years, or 14 per 1,000 personnel-years (95% CI: 11 to 18), nearly double the corresponding UK fatality rate of 7.5 per 1,000 personnel-years (95% CI: 6 to 9) based on 84 fatalities in 11,277 personnel-years. In PERIOD 6, Canadian fatalities remained high at 9 deaths in 962 personnel-years, but consistent with US and UK rates.

**Afghanistan's fatal IED (only) incidents:** g) Fatal IED (only) incidents, which had doubled in frequency in PERIOD 4 (27 incidents caused 44 fatalities) compared to 12 (causing 22 fatalities) in PERIOD 3, remained high at 29+39 IED incidents in PERIODS 5+6, & caused 37+62 ISAF fatalities {99/165 hostile deaths: 60%}.

**Iraq's fatal IED (only) incidents:** h) By contrast, fatal IED (only) incidents in Iraq had nearly halved in frequency in PERIOD 4 when there were 86 (causing 136 deaths) compared to 155 (causing 280 deaths) in PERIOD 3. In PERIODS 5+6, fatal IED (only) incidents were further dramatically reduced to 48+49 incidents causing 78+62 deaths {140/227 hostile deaths: 62%}.

**Lethality of fatal IED (only) incidents:** i) Lethality per fatal IED (only) incident in PERIODS 4+5+6 was similar in Iraq (276 fatalities in 183 fatal IED incidents) and Afghanistan (143 fatalities in 95 fatal IED incidents), both a mean of 1.5 deaths per fatal IED (only) incident.

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### ***1. Background and rationale***

Our analyses<sup>1,2</sup> rely on icasualties.org, to which we make acknowledgement. Date and cause of fatalities on icasualties.org are subject to change as well as to updating.

Bird and Fairweather<sup>1</sup> showed that the vast majority of coalition fatalities in Operation Iraqi Freedom in 2006 up to 17 September was ascribed as hostile (85%: 457/537). In particular, ***improvised explosive devices (IEDs) accounted for 53% of all fatalities, and for 62% of hostile deaths (282/457: 95% CI from 57% to 66%).***

Bird and Fairweather also reported on IED lethality: 271 deaths in 183 fatal IED (only) incidents in Iraq in 2006 to 17 September (260 days), and 222 deaths in 142 fatal IED (only) incidents in the subsequent 140 days (PERIOD 2 = 18 September 2006 to 4 February 2007), ***a pooled mean of 1.5 deaths per fatal IED (only) incident.***

UK troops were withdrawn from Basra on 3 September 2007 midway through PERIOD 4 (25 June to 11 November 2007).

After UK withdrawal from Basra City, and the Afghan winter<sup>3</sup> which coincided with PERIOD 5 (12 November 2007 to 30 March 2008), this update incorporates fatalities in PERIOD 6 (31 March to 17 August 2008): **134 deaths in Iraq, 136 in Afghanistan.**

UK troop numbers in Iraq decreased to 5,000 in the second half of PERIOD 4<sup>6,5</sup>. Subsequently, in PERIOD 5, there was much debate about UK's deployment to Iraq<sup>6,8</sup>, which we assume to have been roughly 4,500 troops from 12 November until the end of 2007; and around 4,000 thereafter. In PERIOD 5, UK troops in Afghanistan continued at 7,000<sup>9,10</sup> with the US contingent being reckoned at 31,000<sup>11-14</sup>.

By the end of PERIOD 6, both deployments had increased: UK is variously reported as having 8,500<sup>15</sup>, 'more than 8,000'<sup>16</sup>, or 'roughly 8,000'<sup>17</sup> troops in Afghanistan; and US as having 34,000<sup>16</sup> to 36,000<sup>18</sup>. We shall count UK and US deployments to Afghanistan as averaging 8,000 and 35,000 respectively throughout PERIOD 6; and to Iraq as 4,000<sup>17</sup> and 150,000<sup>18</sup> respectively in PERIOD 6.

PERIOD 7 is 18 August 2008 to 4 January 2009. During PERIOD 7, the US is expected to send an additional 10,000 to 12,000 troops to Afghanistan; and UK's deployment to Iraq may reduce to 2,000.

## **2. Methods briefly**

Our analyses relate primarily to 140-day periods:

PERIOD 1= 1 May to 17 September 2006,

PERIOD 2= 18 September to 4 February 2007,

PERIOD 3= 5 February to 24 June 2007,

PERIOD 4= 25 June to 11 November 2007,

PERIOD 5= 12 November 2007 to 30 March 2008 {from icasualties.org on 3 April 2008}, and

PERIOD 6 = 31 March to 17 August 2008 (from icasualties.org on 12 & 21 August 2008).

We report fatality rates per 1,000 personnel-years. Four thousand troops in a theatre of operation for 3 months contribute 1,000 personnel-years. So too do 1,000 personnel in theatre for one year. *Analytically, we characterise “major combat” by a military fatality rate of 6 or more per 1,000 personnel-years.*

We analyse the lethality of IED (only) incidents.

As in Bird and Fairweather<sup>1</sup>, we exclude from this analysis multiply-ascribed deaths, such as IED and small arms fire (16, 17 and 6 in PERIODS 3, 4 and 6 respectively) or IED and rocket propelled grenade/grenades (two, two and zero respectively). A singleton fatal IED attack in Iraq during PERIOD 5 in which a suicide vehicle was used has been coded as ‘suicide bomb’ rather than IED. Unusually, triple hostile fire US fatalities in Afghanistan and a UK singleton SAS death in PERIOD 6 were coded as ‘explosion’. We have not counted them as IED deaths.

In PERIOD 5, UK’s deployment to Iraq reduced below 5,000 troops<sup>6-8</sup> and to Afghanistan was to have increased to 7,700, but seems to have remained at around 7,000<sup>3</sup> until PERIOD 6<sup>15-17</sup>. Withdrawal of some 20,000 US combat troops from Iraq during PERIOD 5 was announced by President Bush: we have assumed that their number has effectively stood at 155,000 throughout PERIOD 5<sup>11-14</sup> whereas US troops in Afghanistan have been reckoned at 31,000<sup>11</sup> throughout PERIOD 5. In PERIOD 6, US troop numbers have been reckoned as 150,000 in Iraq and 35,000 in Afghanistan<sup>16, 18</sup>.

Our next update relates to the 140-day PERIOD 7 (18 August 2008 to 4 January 2009).

## **3. RESULTS**

### **3.1 Fatalities in Afghanistan and Iraq in PERIODS 1+2<sup>1</sup>; PERIOD 3; and PERIODS 4+5+6**

This update incorporates fatalities in PERIOD 6 (31 March to 17 August 2008): **134 deaths in Iraq, 136 in Afghanistan**. PERIOD 6 is the first in which the number of military fatalities has been as high in Afghanistan as in Iraq, see **TABLE 1**.

**TABLE 1** summarises coalition military fatalities by nationality in Iraq and Afghanistan. The data for PERIODS 1+2 are reproduced from Bird and Fairweather<sup>1</sup> and for PERIODS 3, 4 & 5 from earlier reports on MRC Biostatistics Unit website.

*Iraq:* Recall that, in the first half of PERIOD 4, the UK fatality rate in Iraq rose to 14 per 1,000 personnel-years (95% CI: 8 to 23), whereas the US fatality rate in Iraq fell to 5.7 per 1,000 personnel-years (95% CI: 4.9 to 6.6) or less, thereby reverting to its level a year previously, see PERIOD 1 in **TABLE 1 (Iraq)**.

The second half of our PERIOD 4 began on the day after UK troops had withdrawn from Basra City. UK's military fatality rate in Iraq fell to 3 per 1,000 personnel-years in the second half of PERIOD 4 and has remained low, averaging 2 per 1,000 personnel-years (pys), with only 3+5+0 = 8 fatalities (**none** in PERIOD 6) in 4,099 pys (95% CI: 1 to 4 fatalities per 1,000 pys).

The second half of PERIOD 4 also saw a highly significant further reduction in US military fatality rate to 3.7 deaths per 1,000 personnel-years (95% CI: 3.0 to 4.4), lower even than in PERIOD 1. The decrease in US military fatality rate has continued so that, by PERIOD 6, it had dropped remarkably to 2.2 per 1,000 personnel years (95% CI: 1.8 to 2.6).

In PERIODS 5+6, 63/290 military fatalities in Iraq were non-hostile causes of death (22%: 95% CI from 17% to 26%); and 140/227 hostile deaths were caused by IEDs (62%: 95% CI from 55% to 68%), see **TABLE 2**.

*Afghanistan:* In Afghanistan in PERIODS 1+2+3+4+5 (700 days), there were 84 UK military fatalities in 11,272 personnel-years (pys), and 66 Canadian deaths in 4,616 pys.

Canada's deployment has *never been more than* half the UK's, but Canadian losses<sup>19</sup> have been onerously high at 14 per 1,000 personnel-years (95% CI: 11 to 18) when set against UK's 7.5 fatalities per 1,000 personnel-years (95% CI: 5.9 to 9.0) for PERIODS 1+2+3+4+5.

In PERIOD 6, after the Afghan winter, all nationalities have again encountered major combat and have sustained military fatalities at an average rate of 7 per 1,000 personnel-years as judged by US, UK and Canada. This is in stark contrast with Iraq in PERIOD 6.

In Afghanistan, US personnel accounted for 49% of all military fatalities in PERIODS 1+2+3+4 (180/367; 95% CI: 44% to 54%) but for a higher proportion ( $p < 0.05$ ) at 58% in PERIODS 5+6 (113/195; 95% CI: 51% to 65%).

In PERIODS 5+6, **TABLE 1 (Afghanistan)** shows that non-hostile causes accounted for only 30/195 of military fatalities in Afghanistan (15%, 95% CI: 10% to 20%); and - as in Iraq - 99/165 hostile deaths were caused by IEDs (60%, 95% CI: 53% to 67%), see **TABLE 2**.

**TABLE 1 (Iraq):** Coalition military deaths and estimated fatality rates per 1,000 personnel-years in consecutive 140-day or 70-day PERIODS; friendly fire deaths superscripted <sup>F</sup>

<i>Theatre</i>	<i>Iraq</i>								
<i>PERIODS of 140 days, except where indicated</i>	<i>1 May to 17 Sept. 2006</i>	<i>18 Sept. to 4 Feb. 2007</i>	<i>5 Feb. to 24 June 2007</i>	<i>25 Jun to 2 Sept. 2007 (70days)</i>	<i>3 Sep to 11 Nov. 2007 (70days)</i>	<i>12 Nov. 2007 to 30 Mar. 2008</i>	<i>31 Mar. to 17 Aug. 2008</i>	<i>18 Aug 2008 to 4 Jan. 2009</i>	<i>5 Jan. to 14 May 2009</i>
Total fatalities <i>(non-hostile, see footnotes)</i>	299 ( 32)	436* ( 56)	490* ( 42)	193 ( 43)	123 ( 36)	156 ( 29)	134 ( 34)		
US (estimated deployment) & person-years	280 (145,000 troops) <b>55,616pys</b>	416 <sup>FF</sup> (145,000 troops)	463 (<= 165,000)	177**** (162,000 <sup>8</sup> - 168,000 troops <sup>9</sup> )	116**** (minimum 162,000 troops <sup>8</sup> )	151 (155,000 troops) <b>59,615pys</b>	130 (150,000 troops) <b>59,615pys</b>		
UK (estimated deployment) & person-years	14 (7,200 troops) <b>2,769pys</b>	12 (7,000 troops) <b>2,692pys</b>	23 (7,000 down to 5,500 <sup>3 4</sup> ) <b>2,586pys</b>	15 (5,500 troops) <b>1,058 pys</b>	3 (5,000 troops) <b>962 pys</b>	5 (~4,500 troops in 2007; 4,000 in 2008) <b>1,603 pys</b>	0 (4,000 in 2008) <b>1,534 pys</b>		
Other	5	8	4	1	4	0	4		
<b>Estimated fatality rates per 1,000 personnel-years (95% Poisson uncertainty)</b>									
US	5.0 (4.4 to 5.6)	7.5 (6.8 to 8.2)	7.3 (6.6 to 8.0)	5.7 <sup>8</sup> (5.5 <sup>9</sup> ) (4.9 to 6.6 <sup>8</sup> ) (4.7 to 6.3 <sup>9</sup> )	3.7 (3.0 to 4.4 <sup>8</sup> )	2.5 (2.1 to 2.9)	2.2 (1.8 to 2.6)		
UK	4.8 (3.1 to 7.0)		8.8 (5.6 to 13.3)	14.1 (7.9 to 23.4)	3.1 (0.6 to 9.1)	3.1 (1.6 to 5.2)	nil (0 to 2)		
Canada	<b>No deployment</b>								

\* Now shown as 437 and as 491 respectively on icasualties.org.

\*\* Includes large clusters of 10 US and 14 UK deaths respectively.

\*\*\* Includes a large cluster of eight US deaths

\*\*\*\* Includes large cluster of 14 US non-hostile deaths in helicopter crash in first half of PERIOD 4 (when 43/193 US fatalities in Iraq were non-hostile deaths) and 8 US non-hostile deaths in vehicle roll-over in second half of PERIOD 4 (when 36/123 US fatalities in Iraq were non-hostile deaths)

F = friendly fire; JW = death of Jonathan Wigley from hostile fire, but questions raised;

?? = friendly fire mooted as cause of two Danish deaths in a firefight in September 2007

A: 13/22 UK and 10/11 Canadian fatalities occurred in the first half of PERIOD 4.

**TABLE 1 (Afghanistan):** Coalition military deaths and estimated fatality rates per 1,000 personnel-years in consecutive PERIODS; friendly fire deaths superscripted <sup>F</sup>

<i>Theatre</i>	<i>Afghanistan ( winter PERIODS highlighted )</i>							
<i>PERIODS of 140 days.</i>	<i>1 May to 17 Sept. 2006</i>	<i>18 Sept. 2006 to 4 Feb. 2007</i>	<i>5 Feb. to 24 June 2007</i> <i>START of SURGE in IRAQ</i>	<i>25 Jun to 11 Nov. 2007</i>	<i>12 Nov. 2007 to 30 Mar. 2008</i>	<i>31 Mar. to 17 Aug. 2008</i>	<i>18 Aug 2008 to 4 Jan. 2009</i>	<i>5 Jan. 2008 to 14 May 2009</i>
Total fatalities (non-hostile)	117 ( 41)	40 ( 4)	96 ( 27)	114 ( 16)	59 <sup>FF</sup> ( 10)	136 ( 20)		
US (estimated deployment) & person-years	54**	18	50***	58	25 (31,000 troops) 11,923pys	88 (35,000 troops) 13,425pys		
UK (estimated deployment) & person-years	33** <sup>F</sup> (4,500 troops) 1,726pys	6 <sup>JW</sup> (up to 5,250 troops) 2,014pys	15 (5,250 to 6K to 6,900 <sup>56</sup> ) 2,186pys	22 <sup>FFFA</sup> (6,900 troops) 2,654pys	8 (7,000 troops) 2,692pys	24 (8,000 troops) 3,068pys		
Canada (estimated deployment) & person-years	17 <sup>F</sup> (2,250 troops) 865pys	12 (2,250 troops) 865pys	16 (2,500 troops) 962pys	11 (2,500 troops) 962pys	10 (2,500 troops) 962pys	9 (2,500 troops) 962pys		
Other	13	4	15	23 <sup>??</sup>	16 <sup>FF</sup>	15		
<i>Estimated fatality rates per 1,000 personnel-years (95% Poisson uncertainty)</i>								
US	US troop numbers not ascertained				2.1 (1.3 to 2.9)	6.6 (5.2 to 7.9)		
UK	19** (13 to 27)	3 (1 to 6)	7 (4 to 11)	8 (5 to 13)	3 (1 to 6)	8 (5 to 11)		
Canada	20 (11 to 31)	14 (7 to 24)	17 (9 to 27)	11 (6 to 20)	10 (5 to 19)	9 (3 to 16)		
UK/Canada	19** (14 to 25)	6 (4 to 11)	10 (7 to 14)	9 (6 to 13)	4.9 (2.9 to 7.8)	8.2 (5.4 to 11)		

**3.2 Fatal IED (only) incidents: variation in frequency of incidents and in fatalities per fatal IED incident**

TABLE 2 shows military fatalities in IED (only) incidents in Iraq and Afghanistan.

*Iraq:* In Iraq<sup>1</sup>, the rate at which fatal IED (only) incidents occurred had increased by 37% in PERIOD 2 (to one per day) compared to BASELINE (0.7 per day). That increase was sustained in PERIOD 3 but reverted in PERIOD 4 and fell dramatically to 0.35 fatal IED

incidents per day in PERIODS 5+6. In PERIODS 4+5+6, there were 276 fatalities in 183 fatal IED (only) incidents, that is: an average of 1.5 deaths per fatal IED incident, and unchanged from the BASELINE in **TABLE 2 (Iraq)**.

*Afghanistan*: Noteworthy in **TABLE 2 (Afghanistan)** are the striking changes in fatal IED (only) incident rate, and fatalities, between PERIOD 3 and PERIODS 4+5+6. In Afghanistan, the number of fatal IED (only) incidents roughly doubled from 12 in PERIOD 3 to 27 in PERIOD 4 ( $p < 0.02$ ); with 29 in PERIOD 5 and up to 39 in PERIOD 6. Meanwhile, in Iraq, the number of fatal IED (only) incidents reduced from 155 in PERIOD 3 to 86 in PERIOD 4 ( $p < 0.001$ ) with further major reductions to 48 and 49 incidents in PERIODS 5 and 6 respectively.

Lethality per fatal IED incident in PERIODS 4+5+6 was similar in Afghanistan and Iraq with 143 fatalities in 95 fatal IED (only) incidents in Afghanistan, again a mean of 1.5 deaths per fatal IED (only) incident: as in Iraq.

**TABLE 2 (Iraq):** IED fatalities in Iraq and Afghanistan

<i>Theatre</i>	<i>Fatal IED incidents in Iraq</i>							
<b>PERIOD</b>	<i>BASE-LINE:</i> 1 Jan. to 17 Sept. 2006 <b>271 IED</b> <b>deaths in</b> <b>183 fatal</b> <b>IED</b> <b>incidents</b>  (260 days)	Period 2: 18 Sept. to 4 Feb. 2007 <b>217 IED</b> <b>deaths in</b> <b>135 fatal</b> <b>IED</b> <b>incidents</b>  (140 days)	Period 3: 5 Feb. to 24 June 2007 <b>280 IED</b> <b>deaths in</b> <b>155 fatal</b> <b>IED</b> <b>incidents</b>  (140 days) <b>SURGE</b>	<b>Period 4:</b> 25 June to 11 Nov. 2007 <b>136 IED</b> <b>deaths in</b> <b>86 fatal</b> <b>IED</b> <b>incidents</b>  (140 days) <b>SURGE</b>	<b>Period 5:</b> 12 Nov. 2007 to 31 Mar. 2008 <b>78 IED</b> <b>deaths in</b> <b>48 fatal</b> <b>IED</b> <b>incidents</b>  (140 days) <b>SURGE</b>	<b>Period 6:</b> 31 Mar. to 17 Aug. 2008 <b>62 IED</b> <b>deaths in</b> <b>49 fatal</b> <b>IED</b> <b>incidents</b>  (140 days) <b>SURGE</b>		
1	<b>128</b>	88	97	57	35	39		
2	<b>33</b>	23	22	13	4	8		
3	<b>14</b>	14	20	12	4	1		
4	<b>5</b>	9	10	3	3	1		
5	<b>3</b>	1	1	1	1			
6+			5		1			
<b>TOTAL</b>	<b>183</b>	135	155	86	48	49		
<i>Fatal IED</i> <i>incidents</i> <i>per day</i>	<i>0.7</i>	<i>1.0</i>	<i>1.1</i>	<i>0.6</i>	<i>0.34</i>	<i>0.35</i>		
<i>Mean</i> <i>deaths per</i> <i>fatal IED</i> <i>incident</i>	<i>1.5</i>	<i>1.6</i>	<i>1.8</i>	<i>1.6</i>	<i>1.6</i>	<i>1.3</i>		

**TABLE 2 (Afghanistan): IED fatalities in Iraq and Afghanistan**

<i>Theatre</i>	<i>Fatal IED incidents in Afghanistan</i>						
<b>PERIOD</b>	<i>BASE-LINE</i> 1 Oct. 2001 to 4 Feb. 2007	Period 3: 5 Feb. to 24 June 2007	<b>Period 4:</b> 25 June to 2 Sept 2007	<b>Period 5:</b> 12 Nov 2007 to 31 Mar. 2008	<b>Period 6:</b> 31 Mar. to 17 Aug. 2008		
<b>Number of deaths in a fatal IED incident</b>	<b>76 IED deaths in 46 fatal IED incidents</b>  (1,953 days)	<b>22 IED deaths in 12 fatal IED incidents</b>  (140 days)	<b>44 IED deaths in 27 fatal IED incidents</b>  (140 days)	<b>37 IED deaths in 29 fatal IED incidents</b>  (140 days)	<b>62 IED deaths in 39 fatal IED incidents</b>  (140 days)		
1	<b>28</b>	8	19	22	25		
2	<b>11</b>	1	3	6	8		
3	<b>2</b>	2	3	1	3		
4	<b>5</b>	0	1		3		
5	<b>0</b>	0	0		0		
6+	<b>0</b>	1	1		0		
<b>TOTAL</b>	<b>46</b>	12	27	29	39		
<i>Fatal IED incidents per day</i>	<b>0.02</b>	<i>0.1</i>	<i>0.2</i>	<i>0.2</i>	<i>0.3</i>		
<i>Mean deaths per fatal IED incident</i>	<b>1.7</b>	<i>1.8</i>	<i>1.6</i>	<i>1.3</i>	<i>1.6</i>		

#### **4. DISCUSSION**

##### **4.1 Afghanistan versus Iraq: dicing with death**

In PERIOD 6, for the first time, military fatalities have been as numerous in Afghanistan as in Iraq. This may seem paradoxical because of the considerably lower coalition deployment to Afghanistan than to Iraq but the explanation is that, whereas the military fatality rate was well under 3 per 1,000 personnel-years in Iraq, it was more than twice as high at 7 per 1,000 personnel-years for US, UK and Canadian troops in Afghanistan (95% CI: 5.7 to 8.2)

Canada's high military fatality rate throughout PERIODS 1+2+3+4+5 of 14 deaths per 1,000 personnel-years (95% CI: 11 to 18) in Afghanistan warranted close scrutiny. In PERIOD 6, Canadian troops again faced major combat in Afghanistan but their fatalities were in line with those of UK and US.

The erstwhile US military fatality rate of 7 deaths per 1,000 personnel-years in Iraq which had been sustained from PERIOD 2 into PERIOD 3, despite a surge of 20,000 to 30,000 additional US troops, fell very significantly in the first half of PERIOD 4 to 5.7 per 1,000 personnel-years (95% CI: 4.9 to 6.6) or less<sup>11</sup>, and dropped further still in the second half of PERIOD 4 to 3.7 per 1,000 personnel-years (95% CI: 3.0 to 4.4) and more

so to 2.2 per 1,000 personnel-years by PERIOD 6 (95% CI: 1.8 to 2.6). UK's military fatality rate in Iraq in PERIODS 5+6 was correspondingly low at five fatalities in 3,137 personnel-years.

#### ***4.2 Increased lethality and frequency of IEDs in Iraq reverts, but not in Afghanistan***

Bird and Fariweather<sup>1</sup> identified that the frequency of fatal IED (only) incidents in Iraq had increased very significantly (by 37%) in PERIOD 2 compared with earlier in 2006, but that the mean number of deaths per fatal IED incident was essentially unchanged, there having been 1.5 deaths per fatal IED (only) incident overall.

In PERIOD 3, an important change in IEDs occurred. Their lethality increased markedly since 155 fatal IED incidents claimed 280 lives, not the hitherto-expected 238, or even 249 (if based on PERIOD 2 only). Unprecedented in Afghanistan or in Iraq in 2006 were fatal IED incidents which claimed 6+ lives – six such incidents occurred in Iraq, and two in Afghanistan to the end of PERIOD 5; but none in PERIOD 6.

In PERIOD 4, the frequency and lethality of fatal IED (only) incidents in Iraq reverted to the lower levels of a year previously but, in Afghanistan, frequency at least doubled: 27 fatal IED incidents (and 44 fatalities) in PERIOD 4 compared with 12 (and 22 fatalities) in PERIOD 3. In PERIODS 5+6, fatal IED incidents in Iraq reduced dramatically to as few as 48+49 (and 78+62 fatalities) but the PERIOD 4 increase in Afghanistan persisted into PERIOD 5 when 29 fatal IED incidents claimed 37 lives and accentuated in PERIOD 6 when 39 fatal IED incidents claimed 62 lives.

Substantial reduction (by at least two-thirds) in the frequency of fatal IED (only) incidents in Iraq between PERIOD 3 (155 incidents) and PERIODS 5+6 (48+49 = 97 incidents) was matched by at least a doubling in frequency in Afghanistan (from 12 incidents in PERIOD 3 to 29+39 = 68 in PERIODS 5+6).

PERIOD-specific similar lethality in fatal IED incidents (mean of 1.5 deaths per fatal IED incident) may be seen as empirical endorsement of military concerns that a common source for IEDs is servicing both theatres of operation.

#### ***4.3 Projection of UK military fatalities in PERIOD 6***

On the basis of 1,500 and 3,000 personnel-years respectively in Iraq and Afghanistan, we had expected around 30 UK fatalities (5.25+24) in PERIOD 6 as singleton deaths or in small clusters - but with wide, informal uncertainty range from 15 to 45. Actual fatalities in PERIOD 6 were (0 + 24). Our range of expectations for Afghanistan for PERIOD 7 is much as it had been for PERIOD 6 because, despite PERIOD 7's overlapping winter by some 10 weeks UK troops numbers may increase to Afghanistan but decrease in Iraq where proportionately fewer than 3.4 fatalities might then be expected.

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