

Influenza-associated paediatric respiratory hospitalizations in China, 1996–2012: a systematic analysis

Supplementary files

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Supplementary Table 1. Literature search methodology and results, by database

Database	Search terminology	Results
Embase	1. exp influenza/ OR exp influenza virus/ OR exp influenza A/ OR exp influenza B/ OR exp influenza C/ OR exp influenza virus A / OR exp influenza virus B / OR exp influenza virus C / OR exp seasonal influenza/ OR influenza.mp OR viral etiology.mp 2. exp respiratory tract infection/ OR exp acute respiratory tract disease/ 3. exp pneumonia/ OR exp virus pneumonia/ 4. exp bronchiolitis/ OR exp viral bronchiolitis/ OR exp bronchitis/ 5. exp flu like syndrome/ OR influenza-like illness.mp 6. ILI.mp OR SARI.mp OR ARI.mp OR ALRI.mp OR LRTI.mp OR CAP.mp 7. 1 AND (2 OR 3 OR 4 OR 5 OR 6) 8. Limit 7 to (human and yr="1996-Current")	34349
Web of Science	(TS= (Influenza) OR TS=(viral etiology)) AND (TS=(Acute Respiratory Infections) OR TS=(respiratory diseases) OR TS=(respiratory illnesses) OR TS=(Pneumonia) OR TS=(influenza-like illness) OR TS=(lower respiratory tract infections) OR TS=(bronchiolitis) OR TS=(bronchitis)) Time span= 1996-2012	6018
Global Health	1. exp influenza/ OR exp influenza viruses/ OR exp Influenzavirus A/ OR exp Influenzavirus B/ OR exp Influenzavirus C/ OR influenza.mp OR viral etiology.mp 2. exp respiratory diseases/ or exp lower respiratory tract infections 3. exp pneumonia/ 4. exp bronchiolitis/ OR exp bronchitis/ 5. influenza-like illness.mp OR ILI.mp OR SARI.mp OR ARI.mp OR ALRI.mp OR LRTI.mp OR CAP.mp 6. 1 AND (2 OR 3 OR 4 OR 5) 7. Limit to yr="1996-Current"	4068

Database	Search terminology	Results
PubMed	1. influenza, human[sh] OR influenza A virus[majr] OR influenza B virus[majr] OR influenza C virus[majr] OR influenza[all] OR viral etiology[all] 2. respiratory tract infections[sh] OR respiratory tract diseases[sh] 3. pneumonia[majr] OR pneumonia, viral[sh] 4. bronchiolitis[sh] OR bronchiolitis, viral[sh] OR bronchopneumonia[sh] 5. influenza-like illness[all] 6. acute respiratory[all] OR acute lower respiratory[all] OR lower respiratory[all] 7. ILI[all] OR SARI[all] OR ALRI[all] OR LRTI[all] OR CAP[all] 8. 1 AND (2 OR 3 OR 4 OR 5 OR 6 OR 7) 9. Limit 8 to ("1996/01/01"[PDAT] : "3000/12/31"[PDAT]) AND "humans"[MeSH Terms])	3596
CINAHL	(TX influenza OR TX influenza virus OR TX viral etiology) AND (TX respiratory infections OR TX pneumonia OR TX influenza-like illness OR TX acute respiratory OR TX lower respiratory OR TX "ILI" OR TX "SARI" OR TX "ALRI" OR TX "ARI" OR TX "LRTI" OR TX "CAP") Limiters: 1996-2012; human	630
LILACS	(Influenza) AND (respiratory disease OR respiratory infection OR pneumonia)	275
WHOLIS	(influenza OR influenza virus OR viral etiology) AND (respiratory infection OR respiratory disease OR respiratory illness OR acute respiratory OR lower respiratory OR pneumonia OR bronchiolitis OR bronchitis OR SARI OR ILI OR ARI OR ALRI OR LRTI OR CAP) Publication year: 1996-2012	10
IndMed	(Influenza) AND (respiratory disease OR respiratory infection OR pneumonia)	4

Database	Search terminology	Results
CNKI	甲流 or 流感 or 病毒病原学 (influenza group keywords) And 呼吸系统感染 (respiratory infection) 甲流 or 流感 or 病毒病原学 (influenza group keywords) And 呼吸系统疾病 (another name of respiratory infection) 甲流 or 流感 or 病毒病原学 (influenza group keywords) And 肺炎 or 下支气管炎 (pneumonia or bronchiolitis) 甲流 or 流感 or 病毒病原学 (influenza group keywords) And 肺炎 or 上支气管炎 (pneumonia or bronchitis) 甲流 or 流感 or 病毒病原学 (influenza group keywords) And 流感样病例 (ILI Chinesename) or ILI 甲流 or 流感 or 病毒病原学 (influenza group keywords) And 急性呼吸道感染 (sari chinese name) or SARI 甲流 or 流感 or 病毒病原学 (influenza group keywords) And ARI 甲流 or 流感 or 病毒病原学 (influenza group keywords) And 急性下呼吸道感染 (LRTI Chinese name) or LRTI 甲流 or 流感 or 病毒病原学 (influenza group keywords) And 急性上呼吸道感染 (LRTI Chinese name) or LRTI 甲流 or 流感 or 病毒病原学 (influenza group keywords) And 非典型肺炎 (SARS Chinese name) or SARS 甲流 or 流感 or 病毒病原学 (influenza group keywords) And 社区活动感染 (CAP Chinese name) or CAP	883

Supplementary Table 2. Summary of published articles included in the analyses

<i>First Author</i>	<i>City/Region</i>	<i>Province</i>	<i>Years</i>	<i>Age Range</i>	<i>Case Definition</i>	<i>Diagnostic Test</i>	<i>% Influenza Positive, age <18</i>	<i>% Influenza Positive, age <2</i>	<i>% Influenza Positive, age <5</i>	<i>Reference</i>
<i>Nong GN</i>	Nanning	Guangxi	Sep 1994-Sep 1995	0-15 years	ARI	APAAP	7	6.2	0.7	(33)
<i>Zhang J</i>	Suzhou	Jiangsu	Oct 1990-Oct 1995	1month-7 years	ALRI/LRTI	APAAP	30	-	-	(34)
<i>Zhu Y</i>	Nantong	Jiangsu	1995-1996	0-6 years	ALRI/LRTI	APAAP	24	-	-	(35)
<i>Liu C</i>	Beijing	Beijing	Mar 1995-Jun 1996	2 days-28 days	Pneumonia	Immunoassay	0	0	0	(36)
<i>Luo S</i>	Hangzhou	Zhejiang	Jan 1999-Dec 1999	2 months-14 years	Other	Multiple tests including PCR	10	11.6	11.1	(37)
<i>Lu M</i>	Shanghai	Shanghai	Jun 1995-Aug 1998	1 month-12 years	Pneumonia	APAAP	28	-	-	(38)
<i>Ding Y</i>	Shanghai	Shanghai	Sep 1993-Oct 1998	0-14 years	ARI	APAAP	2	2.2	2	(39)
<i>Tsai</i>	SouthernTaiwan	Taiwan	Jan 1997-Dec 1999	0-12years	ARI	Others	3.5	-	-	(40)
<i>Wang Y</i>	Yinchuan	Ningxia	Aug 1999-Jul 2000	0-15 years	ARI	ELISA	11.2	-	-	(41)
<i>Liu GR</i>	Beijing	Beijing	Mar 1997-Mar 1999	4- 5.3months	ALRI/LRTI	Immunoassay	2.6	-	-	(42)
<i>Zhang YM</i>	Xian	Shaanxi	Jan 1994-Dec 1997	5 days-11 years	Pneumonia	APAAP	19	18	18.2	(43)
<i>Zhu RN</i>	Beijing	Beijing	Nov 2000-Aug 2002	0-18 years	ARI	Multiple tests excluding PCR	2.3	-	-	(44)
<i>Chen HH</i>	Guangzhou	Guangdong	Mar 2003-May 2004	0-18 years	ALRI/LRTI	PCR	9	-	8.9	(45)
<i>Che DD</i>	Shanghai	Shanghai	Jan 2000-Dec 2000	0-15years	ALRI/LRTI	APAAP	13.8	16.2	14.4	(46)
<i>Wang XW</i>	Zhengzhou	Henan	Mar 2002-Mar2003	10days-14 years	ALRI/LRTI	ELISA	5.7	2.8	5.3	(47)
<i>Liu L</i>	Changchun	Jilin	Oct 2000-Apr 2002	2months-16 years	ARI	ELISA	1.3	1.3	0.9	(48)
<i>Ding Z</i>	Shanghai	Shanghai	Jan 2000-Dec 2002	1 month-12 years	ARI	Immunoassay	1.6	1.1	1.2	(49)
<i>Sun LX</i>	Tianjin	Tianjin	Jan 2002-Mar 2004	0-13 years	Other	Immunoassay	7.9	13	12	(50)
<i>Ye LF</i>	Hangzhou	Zhejiang	Jan 2000-Feb 2001	1 day-3 years	ALRI/LRTI	Immunoassay	3.2	3.1	3.3	(51)
<i>Cao L</i>	Beijing	Beijing	Feb 2001-Mar 2003	1 month-5 years	ALRI/LRTI	Multiple tests excluding PCR	6	2.3	6	(52)

<i>Yan M</i>	Xining	Qinghai	Oct 2003-Oct 2004	1 month-8 years	ARI	ELISA	46	48	49	(53)
<i>Lu M</i>	Shanghai	Shanghai	Oct 2002-Apr 2004	<1 month-16 years	ALRI/LRTI	Immunoassay	29	23.2	27.7	(54)
<i>Lin</i>	Taipei	Taiwan	Aug 2001-Jul 2002	0-18 years	Pneumonia	Multiple tests including PCR	5.2	-	-	(55)
<i>Liu</i>	Xian	Shaanxi	Jul 2003-Jun 2004	35 days-10 years	Pneumonia	ELISA	13	8.2	10.4	(56)
<i>Wang LJ</i>	Chongqing	Chongqing	Apr 2003-Mar 2005	0-15 years	ARI	Immunoassay	0.3	-	-	(57)
<i>Xiang QW</i>	Wenzhou	Zhejiang	Jan 2003-Jan 2005	1 month-13 years	ALRI/LRTI	Immunoassay	1.5	1.4	1.6	(58)
<i>Chen XF</i>	Wenzhou	Zhejiang	Jan 2003-Apr 2004	0.5 month-3 years	ALRI/LRTI	Immunoassay	1.7	1.8	1.7	(59)
<i>Luo XJ</i>	Chongqing	Chongqing	Apr 2003-Dec 2004	0-15years	ARI	Immunoassay	0.5	0.3	0	(60)
<i>Li J</i>	Shanghai	Shanghai	Jan 2005-Dec 2005	1 month-8 years	ALRI/LRTI	Immunoassay	2	-	-	(61)
<i>Cao HX</i>	Qinghai	Qinghai	Jan 2003-Dec 2005	1 month-15 years	Pneumonia	Others	7.7	-	-	(62)
<i>Yuan Y</i>	Beijing	Beijing	Sep 2003-Jul 2005	1 month-14 years	ARI	Immunoassay	4.8	2.3	5	(63)
<i>Li HZ</i>	Zhaoqing	Guangdong	Jan 2003-Jun 2004	1month-12 years	ALRI/LRTI	Others	9.1	7.5	8.8	(64)
<i>Huang HY</i>	Guangzhou	Guangdong	Sep 2000-May2004	0-14 years	ARI	ELISA	30.1	30.2	27.1	(65)
<i>Luo R</i>	Chongqing	Chongqing	Mar 2004-Mar2006	1 month-14 years	ARI	Immunoassay	0.8	0.7	0.8	(66)
<i>Deng JK</i>	ShenZhen	Guangdong	Dec 2003-Nov 2005	0-18 years	ALRI/LRTI	ELISA	16.7	6.4	12.3	(67)
<i>Liu YR</i>	Xian	Shaanxi	Nov 2003-Oct 2006	8 days-28 days	Pneumonia	ELISA	8.3	8.4	8.4	(68)
<i>Bei GP</i>	ZhouShan	Zhejiang	Apr 2004-Apr 2005	0-15 years	ARI	Immunoassay	2.8	-	-	(69)
<i>Zhang YL</i>	Wenzhou	Zhejiang	Jan 2003-Jun 2006	3days-14 years	ARI	Immunoassay	2.6	2.2	2.5	(70)
<i>Cheuk</i>	HongKong	Hong Kong	Aug 2001-Jul 2002	0-18 years	ARI	Immunoassay	7.5	-	-	(71)
<i>Lin JB</i>	Wenzhou	Zhejiang	Oct 2005-Feb 2008	1 month-3 years	Pneumonia	Immunoassay	7.5	7.7	7.5	(72)
<i>Qin M</i>	Nanjing	Jiangsu	Apr 2006-Mar 2007	1 month-14 years	Pneumonia	Immunoassay	1.6	1.8	1.6	(73)
<i>Wang</i>	Beijing	Beijing	Nov 2000-Jun 2006	0-14years	ARI	Multiple tests excluding PCR	0.6	-	-	(74)
<i>Fan M</i>	Kunming	Yunnan	Oct 2005-Oct 2007	0-15years	ALRI/LRTI	Immunoassay	0.6	0.4	0.5	(75)

<i>Qian J</i>	Wuxi	Zhejiang	Dec 2006-Nov 2007	45 days-9 years	ARI	Immunoassay	4	-	-	(76)
<i>Yang K</i>	GuiLin	Guangxi	Sep 2005-Sep 2006	30days- 12 years	ARI	Multiple tests excluding PCR	8.3	2.5	8.4	(77)
<i>Liao SF</i>	Jianyang	Sichuan	Jan 2006-Dec 2006	1 years-14 years	Pneumonia	ELISA	15.6	17.6	16.7	(78)
<i>Tang</i>	Hangzhou	Zhejiang	Jan 2001-Dec 2006	0-13years	ALRI/LRTI	Immunoassay	2.2	1.8	2.2	(79)
<i>Ou</i>	Shantou,jieyang	Guangdong	Jan 2007-Dec 2007	1month-5years	ALRI/LRTI	PCR	11.9	-	11.9	(80)
<i>Liu</i>	Beijing	Beijing	Mar 2007-Feb 2008	1month-15 years	ALRI/LRTI	PCR	6.9	3.2	4.9	(81)
<i>Peng</i>	Wuhan	Hubei	May 2008-Apr 2009	0-14 years	ARI	Immunoassay	59.5	12.8	42.2	(82)
<i>Zhang</i>	Harbin	Heilongjiang	Jan 2008-Dec 2008	0-16years	ALRI/LRTI	Immunoassay	19.4	-	-	(83)
<i>Chen HX</i>	Dalian	Liaoning	May 2007-May 2008	0-14years	Pneumonia	ELISA	2.1	-	-	(84)
	Hong Kong	Hong Kong	Oct 2003-Sep 2006	0-18years	ARI	Multiple tests excluding PCR	14.3	-	-	(85)
<i>Yang WM</i>	WeiFang	Shandong	Nov 2007-Nov 2008	2month-6years	Other	Immunoassay	7.7	2.8	40.3	(86)
<i>Tsung</i>	Hong Kong	Hong Kong	Nov 2005-Apr 2007	0-5years	Other	Multiple tests including PCR	11.3	11.5	11.3	(87)
<i>Chen Q</i>	Nanjing	Jiangsu	Sep 2008-Aug 2009	4h-14 years	ARI	Immunoassay	1.7	1.3	1.7	(88)
<i>Li H</i>	Shuangyashan	Heilongjiang	Jan 2007-Jun 2009	3d-14years	ARI	Immunoassay	2.2	2.3	2.5	(89)
<i>Hu</i>	Jiaxing	Zhejiang	Feb 2007-Dec 2008	8 days-6 years	ARI	Immunoassay	0.6	-	-	(90)
<i>Ren FM</i>	ShuangYashan	Heilongjiang	Jan 2003-Jun 2006	3days-14 years	ARI	Immunoassay	2.7	-	3.8	(91)
<i>Chang J</i>	Wenzhou	Zhejiang	Jan 2007-Dec 2008	13 days-13years	ARI	Immunoassay	1.5	1	1.5	(92)
<i>Tan LG</i>	Huizhou	Guangdong	Jan 2008-Dec 2009	18.5±5.5d	Pneumonia	Immunoassay	0	0	0	(93)
<i>Liu JP</i>	Taizhou	Zhejiang	Mar 2008-Jun 2009	3-6y	ARI	ELISA	1.1	-	-	(94)
<i>Yu</i>	Chongqing	Chongqing	Dec 2006-Mar 2008	3 days-44 month	Pneumonia	PCR	8.4	-	8.4	(95)
<i>Chen XQ</i>	Nanjing	Jiangsu	May 2009-Apr 2010	1 month-14 years	ARI	PCR	13.2	-	-	(96)
<i>Gong XY</i>	Yiwu	Zhejiang	Apr 2008-Mar 2009	29days-14 years	ALRI/LRTI	ELISA	1.1	1.2	1.3	(97)
<i>Xu Z</i>	Suzhou	Jiangsu	Jun 2006-Jun 2009	1 month- 15 year	Other	Immunoassay	2.4	2.6	2.5	(98)
<i>Mao XJ</i>	Guangzhou	Guangdong	Jan 2005-Dec 2007	0-15years	Pneumonia	Others	2	1.4	1.9	(99)

<i>Ji</i>	Suzhou	Jiangsu	Jan 2006-Dec 2009	1 month-10 years	ARI	Immunoassay	2.8	-	-	(100)
<i>Li Shifen</i>	Chongqing	Chongqing	Jan 2005-Dec 2009	0-14 years	Pneumonia	ELISA	3.1	-	-	(101)
<i>Zhang</i>	Lanzhou	Gansu	Oct 2004-Oct 2005	2 month- 14 years	Pneumonia	Immunoassay	9.1	8.4	8.4	(102)
<i>Zhang HJ</i>	Changsha	Hunan	Nov 2009-Dec 2010	0-18years	SARI	PCR	39.7	-	27.9	(103)
<i>Jin</i>	Lanzhou	Gansu	Dec 2006-Nov 2009	0-14 years	ALRI/LRTI	PCR	8.1	7.7	8.2	(104)
<i>Xu Y</i>	ZhuHai	Guangdong	Jun 2009-May 2011	all age	Pneumonia	PCR	4.1	-	-	(105)
<i>Jiang HY</i>	Beijing	Beijing	May 2010-May 2011	2-14month	Other	-	8.5	-	-	(106)
<i>Xiao</i>	Changsha	Hunan	Sep 2007-Aug 2008	1 days-14 years	ALRI/LRTI	PCR	5.6	4.8	5.6	(107)
<i>Xue YM</i>	Lanzhou	Gansu	Apr 2010-Mar 2011	1 month-14 years	ARI	ELISA	3.2	1.8	3.6	(108)
<i>Zhang ZT</i>	Zibo	Shandong	Sep 2008-Dec 2009	0-18 years	ARI	ELISA	39.2	15.7	31.3	(109)
<i>Liu XG</i>	Xian	Shaanxi	Jan 2010-Dec 2011	1 month-14 years	ALRI/LRTI	PCR	7.1	-	-	(110)
<i>Li CZ</i>	Wuhan	Hubei	Sep 2010-Sep 2011	0-9years	ARI	Immunoassay	6.4	3	6.2	(111)

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