Table S2. Evidence table for citations fulfilling the inclusion and exclusion criteria for the literature review (n=40).

Citation	Region/geographical area	Study design	Data period: Date range/year	If study:		Summary of data presentation or results/conclusion
				No. patients/population studied [M:F]	Age range	
MoPH, 2000–2012 [23–34]	Nationwide data	Surveillance data	2000–2011			Statistical data tables: presentation of data provided by the Thailand Ministry of Public Health
Kongsomboon et al., 2004 [37]	Bangkok	Observational study using an age-period cohort of temporal trends of dengue incidence rates	1981–2000	Not specified	0–>15y	The study showed the age group at greatest risk for DF/DHF was 5–9 years old. The period effect shows a remittent pattern, with significant increases in 1986–1990 and 1996–2000. Authors concluded that the temporal trend of DF/DHF is decreasing; especially for DHF
Sriprom et al., 2003 [38]	Siriraj Hospital, Bangkok	Laboratory survey using the serological records of DHF patients. Primary and secondary infections confirmed by haemagglutination-inhibition assay (HI) test and ELISA	1998–2003	1,183 patients admitted; 1,082 confirmed by serology to have DHF	<1y – >16y	Of the cases for which paired sera specimens were tested using both HI and ELISA in 2000, 2001, 2002 and the first half of 2003; six out of 48 cases (12.5%); 85 out of 293 cases (29%); 23 out of 90 cases (25.6%) and 16 out of 56 cases (28.6%), respectively, resulted from primary infections. During the last three of years of the study the proportion of primary infection above that reported between 1988 and 2003 in Bangkok (14.0%)
Punyagupta et al., 2009 [39]	Vichaiyut Hospital and Medical Center, Bangkok	Retrospective chart review of adult patients hospitalized at Vichaiyut Hospital and Medical Center, Bangkok, Thailand	Jan 2003 – June 2007	507 patients with clinical suspicion of dengue infection [248 :259]	18y – >70y	178 (94 males and 84 females) were confirmed as positive by either dengue IgM antibody, non-structural 1 (NS) antigen, or polymerase chain reaction (PCR). At hospitalization an initial diagnosis of dengue infection was correct in only 35 patients (46.7%).

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Nagao et al., 2008 [40]	North, north-eastern, central and southern regions and Bangkok	Observational study using surveillance data to examine relationship between spread of dengue is due to urbanization	1980–2005	Not specified	Not specified	Dengue transmission intensities in Thailand used to evaluate effect of urbanization. Inverse of mean age of dengue haemorrhagic fever (DHF) cases used as a surrogate of dengue transmission intensity. Transmission intensity in Bangkok decreased rapidly since the mid-1990s, to levels that are currently lower than in other regions. Regression analysis revealed that transmission intensity is highest in the North-eastern rural region. The results suggest that urbanization is not necessarily associated with intense dengue transmission in Thailand
Jianjaroonwong, 2008 [45]	Puttamonthon Hospital, Nakornpathom province	Retrospective descriptive study of patients diagnosed with dengue infection	January – December 2007	108 patients [57:51]	2–46y (mean 20y)	All patients who had dengue infection were assessed for sex, age, clinical presentation, diagnosis, treatment and complication. Highest disease prevalence during July-October. Most frequent clinical features: (100%), headache (46%) , nausea/vomiting (42.6%), hematemesis (5.5%), diarrhoea (12%), and abdominal pain (9%). Severity: grade I: 38%; grade II: 14%; grade III: 3%; grade IV: 0%
Witayathawornwong, 2006 [46]	Petchabun province	Retrospective chart review	January 2003 – December 2005	627 cases of DHF were considered, from which the charts of 14 infants were reviewed [8 :6]	3–12 months (median 8 months)	All 14 infants had signs, symptoms and laboratory investigations compatible with DHF. 5 cases (35.7%) were referred from district hospitals without definitive DHF diagnosis .11 cases (78.6%) occurred during the May–October rainy season. One 4-month-old patient had secondary dengue infection (ELISA) with DENV-4 (RT-PCR). The median duration of fever was 4.5 days; there were no deaths

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Tipayamongkholgul et al., 2009 [47]	Southern tropical coastal provinces: Petchaburi, Prachuap Khirikhan, Chumpon, Surat Thani, Nakhon Sithammarat Northern inland mountainous provinces: Chiangmai, Lamphun, Lampang, Phrea, Nan, Phayao, Chiangrai, Maehongson	Observational study with modelling to examine the temporal relationship between El Niño and the occurrence of dengue epidemics	1996–2005	Total population of regions studied: Southern provinces: 3,741,656 Northern provinces: 5,746,545 Total cases of dengue between January 1996 and December 2005: Southern provinces: 54,051 Northern provinces: 44,176	Not specified	In the two selected regions of Thailand, El Niño strength was a consistent predictor for the occurrence of dengue epidemics. Up to 22% (northern provinces) and 15% (southern provinces) of the variation in the monthly incidence of dengue cases were attributable to global ENSO cycles. In 10 of 13 provinces studied, the multivariate ENSO index was an independent predictor
Endy et al., 2002 [48]	Muang, a subdistrict of Kamphaeng Phet province	Prospective cohort study of children in grades 2–6 of primary schools	1998–2000	1,713 children in 2000 No differences in sex distribution were noted from year to year or between schools (data not shown)	Median age: 9.3y in 2000	717,106 person-school days observed (1998–2000). The incidence of inapparent and symptomatic DENV infections was 1.4% and 0.8% in 2000, respectively; 1.1% of acute-illness school absences in 2000 were attributed to symptomatic DENV infection. The results illustrate the spatial and temporal diversity of dengue virus infection and the burden of dengue disease in schoolchildren in Thailand
Khawsak et al., 2003 [49]	Central (Bangkok; Samut Prakan; Nakhon Sawan; Pathum Thani, Ratchaburi, Nakhon Pathom, Samut Songkhram); Northeast (Ubon Ratchathani, Udon Thani); North (Chiang Rai, Phitsanulok); South (Ranong; Nakhon Si Thammarat, Yala)	Retrospective laboratory serotype analysis usinga modified reverse transcriptase-polymerase chain reaction (RT-PCR) and a single-tube multiplex PCR assay	2000–2001	637 blood samples. Male/female breakdown not given	Not specified	71, 43, 28, and 43 patients were classified as having a single infection with serotypes 1, 2, 3, and 4, respectively.DENV-1 was abundant in Bangkok metropolitan area; serotypes 2, 3, and 4 were dominant in suburban areas. The percentage of single infection was approximately 29% (185 out of 637)

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Anantapreecha et al., 2004 [50]	Hospitals in Lampang, Nakhon Ratchasima, Pathum Thani, Bangkok, Ratchaburi and Songkhla provinces.	Serotype	1999–2002	Blood samples collected from suspected dengue cases at acute (n= 5,160) and convalescent (n=3,619) stages	Not specified	All four dengue serotypes were identified; overall DENV-1 was the predominant serotype (48%), followed by DENV-2 (27%), DENV-3 (20%) and DENV-4 (5%).The predominant dengue serotypes changed every 1-2 years in three of the six hospitals and the predominant serotypes were different in different hospitals
Veeraseatakul et al., 2007 [51]	Five northern provinces (Chiangmai, Lampang, Lamphun, Mae Hong Son, Phrae)	Clinical study to determine the dengue serotypes in circulation using RT-PCR	2002–2006	1,116 seropositive acute samples were analysed from DF/DHF patients	Not specified	559 samples were DENV positive: DENV-2: 47.2%; DENV-1: 30.6%; DENV-4: 18.4%; DENV-3: 3.8%. DENV-2 was the predominant dengue serotype from 2002–2005; DENV-1 was predominant in 2006. There was an apparent increase in the percentage of DENV-4 from 2005 to 2006
Fried et al., 2010 [52]	Queen Sirikit Institute of Child Health, Bangkok	Prospective observational single-site study to determine associations between serotype and signs of severe clinical disease	1994–2006	457 patients [254:204]	18mo –15y; mean age 8.6y	Data for the whole period reveal 162 (36%) cases with DENV-1, 102 (23%) with DENV-2, 123 (27%) with DENV-3, and 64 (14%) with DENV-4. Comparing study years, the rate of DHF was significantly less in 1999, 2000, 2004, and 2005 than in 1994, the study year with the highest percentage of DHF cases. There was no significant difference in the rates of DHF by serotype

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Limkittikul et al., 2005 [53]	Northeast region provincial hospitals	Retrospective study to compare the clinical spectra of disease in patients with confirmed dengue.	June–September 2002	Medical records of 99 dengue-infected in-patients, confirmed by PCR and paired antidengue IgG and IgM ELISA tests, were examined.	3–30 years.	Infecting serotypes: DENV-1 (21%), DENV-2 (55%), DENV-3 (12%) or DENV-4 (12%): 22% primary and 78% secondary infections. Dengue fever was the most common presentation for both primary (77.2%) and secondary infections (46.7%). The DF:DHF and non-DSS:DSS ratios were lowest for DENV-2. There was no difference in the duration of fever, percentage of hepatomegaly and bleeding among the serotypes
Anantapreecha et al., 2007 [54]	Hospitals in Lampang, Nakhon Ratchasima, Pathum Thani, Bangkok, Ratchaburi and Songkhla provinces	Antibody response study in patients with confirmed primary dengue virus infection who visited the selected hospitals	1999–2002	Acute and convalescent plasma samples obtained from 101 confirmed primary dengue cases	Not specified	DENV-1: 48 cases; DENV-2: 10 cases; DENV-3: 42 cases; DENV-4: 1 case. Haemagglutination inhibition titres of individual samples were similar at both acute and convalescent stages, irrespective of DENV serotype. The results indicate that haemagglutination inhibition antibodies to DENV are cross-reactive, which should be considered when it is used as a diagnostic test
Anantapreecha et al., 2005 [55]	Hospitals in Lampang, Nakhon Ratchasima, Pathum Thani, Bangkok, Ratchaburi and Songkhla provinces	Serological and virological analysis: DF and DHF	1999–2002	2,715 serologically and virologically confirmed clinical diagnoses of DF or DHF	<1y to ≥66y	DENV-1: 45%; DENV-2: 32%; DENV-3: 18%; DENV-4: 5%. Majority of DHF cases caused by DENV-2 and DENV-4 were secondary infections; approximately 20% of DHF cases caused by DENV-1 and DENV-3 were primary infections. Male:female ratios and age distribution were similar among the four serotypes in either primary or secondary infections

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Endy et al., 2011 [56]	Kamphaeng Phet, northern Thailand	Prospective study in schoolchildren describing spatial and temporal variations in the symptomatic to inapparent (S:I) illness ratio	1998–2002	There was a gradual decline of the study population over time: 2,044 in 1998; 1,915 in 1999; 2,203 in 2000; 2,011 in 2001; and 1,759 in 2002	7–16y	1,024 dengue virus infections were detected in total over the 5 years of the study; 909 children experienced at least one dengue infection during the study period and 115 experienced a second infection. There was a wide fluctuation in the S:I illness ratio between and among schools in a given year and within schools over several dengue seasons. For a given school, the most important determinants of S:I ratio were the incidence of dengue infection in a given year and in the preceding year
Poblap et al., 2006 [58]	Central Plain region Nakhon Pathom province; 15 villages in the Museang and Sam Phran districts	Cross-sectional clinical study using active serological surveys and viral RNA isolation to detect silent transmission of dengue virus	27 March – 11 April 2001	329 healthy volunteers	0 to >50y	Twenty-nine sera tested positive for dengue IgM (8.8%) and one for Japanese encephalitis IgM. Of those positive for dengue IgM antibody 13.7% (23/168) were males and 7.5% (12/161) were females, with no significant difference between the two. The highest prevalence occurred in the 15–40-year-old group. Viral RNA was detected by PCR in 2 cases (DENV-3 was identified)

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Mammen et al., 2008 [59]	Muang district, Kamphaeng Phet province, north-central Thailand	Prospective cluster study, during two seasons of peak DENV transmission to test the hypothesis that DENV transmission is spatially and temporally focal	2004–2005	1,204 febrile children (506 in 2004 and 698 in 2005) 48 had detectable DENV viremia (28 in 2004 and 20 in 2005)	6 momths–15y	Study compared geographic and temporal characteristics within Thai villages where DENV were not being actively transmitted. Thirty-four cluster investigations were conducted during the study period. The data reveal the remarkably focal nature of DENV transmission within a hyperendemic rural area of Thailand. Ten clusters (five pairs) in 2004 and two clusters (one pair) in 2005 were spatially and temporally matched. Children in 58% (seven of 12) of the positive clusters (six in 2004 and one in 2005) attended a single school
Tuntaprasart et al., 2003 [60]	Muenag district, Ratchaburi province	Seroepidemiological study	July 2000 – June 2001	341 schoolchildren included in survey: 283 specimens tested	5–12y	Of the tested specimens, 71% (200/283) were positive for dengue IgG antibody at baseline (July 2000). 90 schoolchildren were followed up three times, in September and December 2000, and June 2001. In June 2001, the rate of dengue infection showed an increase of 8.8% with 8.0% among immune children and 10.3% among naïve schoolchildren. The rate of seroconversion increased between September and December 2000
Choudhri et al., 2011 [61]	Nationwide	WHO Report of national surveillance data from countries in the WHO South-East Asia Region	2000–2010			Situation update of dengue in the South-East Asia Region, 2010. Reported number of cases of DF/ DHF in the South-East Asia Region, including Thailand, 2000–2010
Wichmann et al., 2011 [62]	Muang district of Kamphaeng Phet province and Muang district of Ratchaburi province	Observational cohort studyby members of a dengue field site consortium over at least two dengue seasons	2003–2006	14,627 person-years of prospective cohort data were obtained	<15y	Cohort studies were conducted among children aged <15 years by members of a dengue field site consortium over at least 2 dengue seasons. Average under-recognition of total and inpatient dengue cases was 8.7 and 2.6-fold in Thailand, and 9.1 and 1.4-fold in Cambodia, respectively

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Klungthong et al., 2004 [64]	Bangkok	Molecular epidemiology study of genetic diversity and evolutionary change of DENV-4	1973–2002	53 dengue viral isolates recovered	Not specified	Study revealed extensive genetic diversity within a single locality at a single time. A new and divergent genotype of DENV-4 was discovered and a pattern of continual lineage turnover observed. There was no evidence for adaptive evolution in any gene, codon, or lineage of DENV-4
Silawan et al., 2008 [Suppl. Table S3: Ref. A]	Nakhon Ratchasima, Buri Ram, Surin, Si Sa Ket, Ubon Ratchathani, Yasothon, Chaiyaphum, Amnat Charoen, Nong Bua Lam Phu, Khon Kaen, Udon Thani, Loei, Nong Khai, Maha Sarakham, Roi Et, Kalasin, Sakon Nakhon, Nakhon Phanom, Mukdahan	Observational modelling study	1996–2005; predictions 2006–2008	Regional census population, 21,297,769	Not specified	The forecasting model for dengue incidence was evaluated by comparing predicted versus actual rates of dengue for 1996−2005 and used to forecast monthly rates during January−December 2006. Epidemics occurred every 2 years
Ellis et al., 2006 [Suppl. Table S3: Ref. B]	Sangkhlaburi district, Kanchanaburi province, western Thailand	Prospective clinical study	June 1999 – March 2002	613 adult inpatients and outpatients evaluated for cause of fever .[325:288]	20–87y (median age 38y)	An etiologic diagnosis was made based on clinical findings and laboratory results in 48% of cases. Malaria was the most common diagnosis (25%). Serologic evidence for leptospirosis was found in 17% of cases. Other aetiologic diagnoses included rickettsial infections, dengue fever, and typhoid
Anderson et al., 2007 [Suppl. Table S3: Ref. C]	Kamphaeng Phet province, northern Thailand	Prospective cohort study of primary schoolchildren to assess disability-adjusted life years (DALYs) and patient costs per illness	1998–2002	8807 children in total (1998–2002). Of these, n = 1,713, 1,575 1,372 and in 2000, 2001 and 2002, respectively	5–15y	Dengue accounted for 328 (11%) of the 3056 febrile cases identified in 2114 children during the study period. The mean burden of dengue was 465·3 DALYs/million population/year. Non-hospitalized patients with dengue illnesses represented a substantial proportion of the overall burden of disease. DALYs lost to dengue each year and dengue incidences for each year of the study were presented

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Promprou et al., 2006 [Suppl. Table S3: Ref. D]	Southern Thailand	Observational study using univariate time-series analysis to model and forecast the monthly number of DHF cases	1994–2005	Not specified	Not specified	Autoregressive integrated moving average (ARIMA) models were developed using data collected between 1994 and 2005 and validated using data collected between January and August 2006. The results showed that the time-series forecasting of DHF cases in southern Thailand may help improve public health planning for disease prevention and control
Sriprom et al., 2010 [Suppl. Table S3: Ref. E]	Sakon Nakhon Province (18 districts)	Observational study using a statistical and autoregressive analysis to construct district level maps of the distribution of dengue infection	January 2005 – December 2007	1,894 hospitalised patients diagnosed with dengue infection 985 males; 909 females	4 months – 65y	High correlation between dengue incidence and weather conditions (monthly minimum temperature, past 2-month cumulated rainfall) and socio-economical (population of 0–4 years old, per capita number of public small water wells, proportion of villages with primary schools) covariates. Higher occurrences observed in the three most populated districts (Wanon Niwat, Sawang Daen Din and Mueang Sakon Nakhon)
Ditsuwan et al., 2011 [Suppl. Table S3: Ref. F]	Provinces in lower southern Thailand (Narathiwat, Pattani, Yala, Songkhla, Trang, Phatthalung, Satun)	Descriptive surveillance study to assess the incidence of dengue infection	August 2008 – June 2009	27,166 patients identified, including 3,319 with dengue infection [1,776; 1,543 (Calculated using percentages given in text and table)]	Mean: 19.2y ± 15.3	Dengue incidence: 73 /100,000 population. Of those with dengue, 1447 (43.6%) and 1827 (55.0%) were DF and DHF, respectively. 45 dengue cases were diagnosed as DSS; of these, 3 died. Most patients (85.5%) lived in rural areas; 75.4% of cases were admitted to hospital