

Supplementary Appendix

Appendix Table 1.

Microbiological profile of pneumonia hospitalisation cases before and after the 2011 Tohoku earthquake and tsunami, Kesenuma City.

Appendix Table 2. Comparisons of factors associated with death among patients hospitalised for pneumonia before and after the 2011 Tohoku earthquake and tsunami, Kesenuma City.

Appendix Figure 1.

Flow chart of study patients.

Appendix Figure 2.

Geographical distributions of patients hospitalised for pneumonia during the study period, Kesenuma City, Miyagi.

Appendix Figure 3.

Number of evacuees and daily cases by date of onset.

Appendix Table 1. Microbiological profile of patients hospitalised for pneumonia before and after the 2011 Tohoku earthquake and tsunami, Kesenuma City.

Microbiological test	Pre-disaster period (March 1, 2010-March 10, 2011) n=225			Post-disaster period (March 11, 2011-June 30, 2011) n=217		
	No. positive/tested	% positive among those tested	% positive among total cases	No. positive/tested	% positive among those tested	% positive among all cases
Sputum culture						
<i>Staphylococcus aureus</i>	16/93	17.2%	7.1%	14/91	15.4%	6.2%
<i>Klebsiella pneumoniae</i>	8/93	8.6%	3.6%	11/91	12.1%	4.9%
<i>Streptococcus pneumoniae</i>	7/93	7.5%	3.1%	14/91	15.4%	6.2%
<i>Pseudomonas aeruginosa</i>	6/93	6.5%	2.7%	3/91	3.3%	1.3%
<i>Haemophilus influenzae</i>	3/93	3.2%	1.3%	14/91	15.4%	6.2%
<i>Enterobacter spp.</i>	3/93	3.2%	1.3%	2/91	2.2%	0.9%
<i>Acinetobacter spp.</i>	3/93	3.2%	1.3%	2/91	2.2%	0.9%
<i>E. coli</i>	2/93	2.2%	0.9%	2/91	2.2%	0.9%
Other bacteria	13/93	14%	5.8%	10/91	11%	4.4%
Blood culture						
<i>E. coli</i>	1/22	4.5%	0.4%	0/8	0%	0%
Group G <i>Streptococcus</i>	0/22	0%	0%	1/8	12.5%	0.4%
Urinary antigen test for <i>S. pneumoniae</i>	12/67	17.9%	5.3%	17/84	20.2%	7.6%
Urinary antigen test for <i>Legionella pneumophila</i> serogroup 1	0/64	0%	0%	0/77	0%	0%
IgM antibodies to <i>Mycoplasma pneumoniae</i> (ImmunoCard <i>Mycoplasma</i> test)	12/69	17.4%	5.3%	2/29	6.9%	0.9%
Rapid influenza diagnostic test	0/24	0%	0%	0/38	0%	0%

Appendix Table 2. Comparisons of factors associated with death among patients hospitalised for pneumonia before and after the 2011 Tohoku earthquake and tsunami, Kesenuma City.

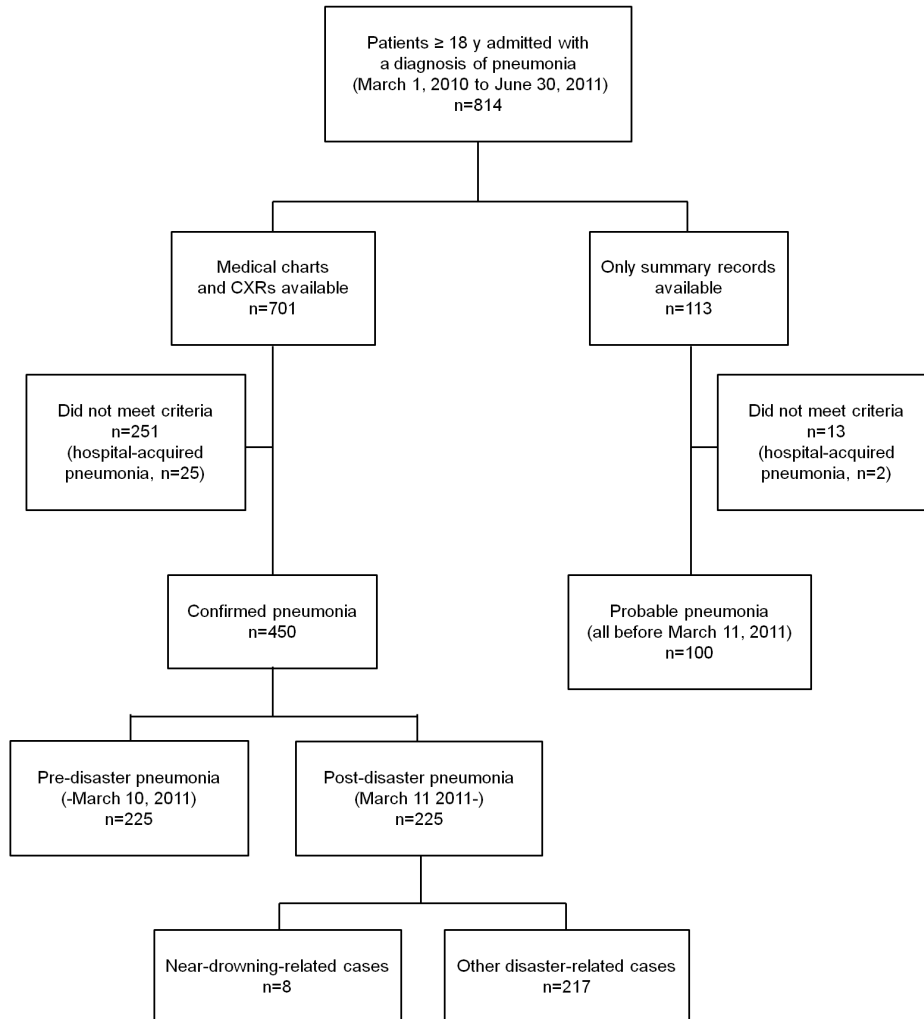
	Pre-disaster period (March 1, 2010-March 10, 2011), n=225			Post-disaster period (March 11, 2011-June 30, 2011), n=217			Test for interaction
	Deceased n (CFR*, %)	RR [†] (95% CI)	ARR [‡] (95% CI)	Deceased n (CFR, %)	RR (95% CI)	ARR (95% CI)	
Gender							
Female	16 (16.3)	Ref.	Ref.	20 (21.5)	Ref.	Ref.	0.377
Male	23 (18.1)	1.11 (0.62 to 1.99)	1.16 (0.65 to 2.08)	32 (25.8)	1.2 (0.73 to 2)	1.62 (1 to 2.63)	
Age category							
15-64 years	1 (2.9)	Ref.	Ref.	2 (9)	Ref.	Ref.	0.742
65-79 years	9 (14.8)			11 (16.4)			
≥80 years	29 (22.3)	2.12 (1.08 to 4.14)	1.92 (0.93 to 3.97)	39 (30.5)	2.09 (1.18 to 3.68)	1.53 (0.86 to 2.74)	
Duration of symptoms before admission							
≤2 days	24 (22)	Ref.	Ref.	30 (26.3)	Ref.	Ref.	0.299
3 days or more	15 (13.8)	0.62 (0.35 to 1.13)	0.67 (0.36 to 1.22)	20 (20.4)	0.78 (0.47 to 1.28)	0.85 (0.52 to 1.39)	
Unknown	0 (0)	-	-	2 (40)	-	-	
Antibiotics prescribed before admission							
Yes	5 (15.6)	0.89 (0.37 to 2.1)	1.06 (0.43 to 2.6)	11 (37.9)	1.74 (1.01 to 2.98)	1.81 (1.04 to 3.15)	0.184
No	34 (17.6)	Ref.	Ref.	41 (21.8)	Ref.	Ref.	
Presence of underlying condition							
Yes	28 (21.7)	1.89 (0.99 to 3.62)	1.46 (0.79 to 2.72)	32 (26.5)	1.27 (0.78 to 2.07)	0.96 (0.6 to 1.54)	0.377
No	11 (11.5)	Ref.	Ref.	20 (20.8)	Ref.	Ref.	
CURB65 score							
3-5 (severe)	10 (38.5)	2.55 (1.41 to 4.63)	2.38 (1.34 to 4.23)	16 (59.3)	3.12 (2.02 to 4.83)	2.26 (1.4 to 3.64)	0.497
0-2 (less severe)	28 (15.1)	Ref.	Ref.	35 (19.4)	Ref.	Ref.	
Unknown	1 (7.7)	-	-	2 (18.2)	-	-	
Residence location							
Home	31 (16.1)	Ref.	Ref.	28 (23.9)	Ref.	Ref.	0.253
Nursing home	8 (25)	1.56 (0.79 to 3.08)	1.43 (0.74 to 2.75)	18 (45)	1.88 (1.17 to 3.01)	1.38 (0.79 to 2.42)	
Evacuation site	-	-	-	6 (10)	0.42 (0.18 to 0.96)	0.43 (0.18 to 1.01)	

* Case fatality ratio

† Risk ratio

‡ Adjusted risk ratio

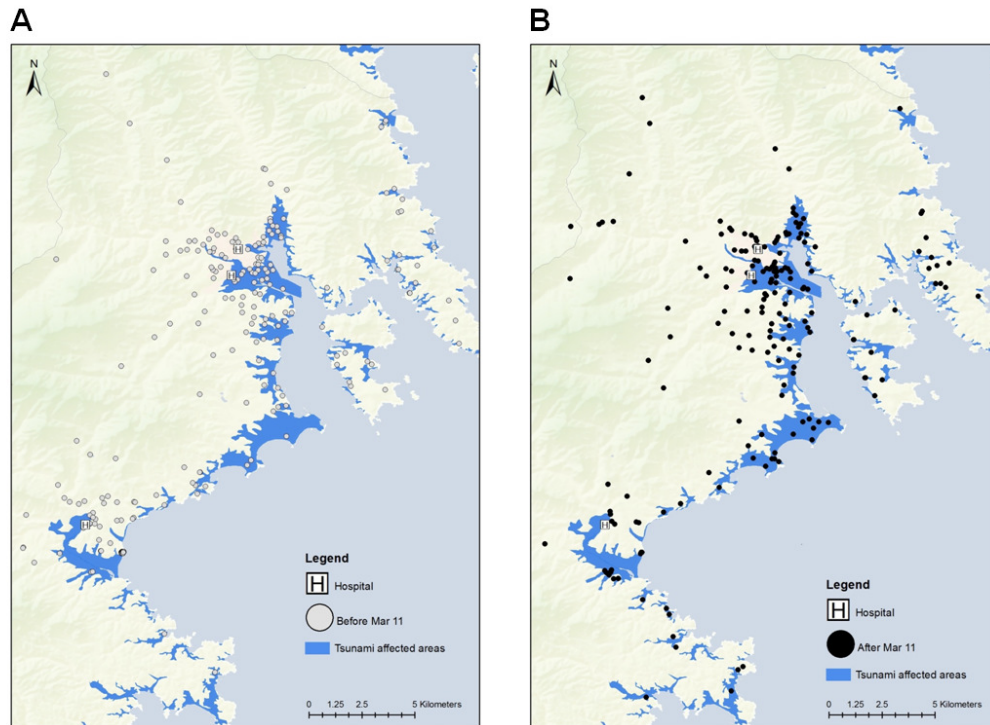
Appendix Figure 1. Flow chart of study patients.



Appendix Figure 2. Geographical distributions of patients hospitalised for pneumonia according to study period, Kesennuma City, Miyagi.

Cases were plotted according to the patients' addresses before the disaster. The disaster area data were obtained from the overview map of tsunami-affected areas released by the Geospatial Information Authority of Japan (http://www.gsi.go.jp/BOUSAI/h23_tohoku.html).

A: Pneumonia hospitalisations during the pre-disaster period (March 1, 2010, to March 10, 2011); B: Pneumonia hospitalisations during the post-disaster period (March 11, 2011, to June 30, 2011).



Appendix Figure 3. Number of evacuees and daily cases according to the date of onset.

A: Number of officially counted evacuees and daily minimum temperature. Climate data were obtained from the Japan Meteorological Agency. Temperature data were not available for the first week after March 11, 2011. B: Cases from February 20, 2011, to June 14, 2011. C: Cases from February 20, 2010, to June 14, 2010. NH, nursing home; ES, evacuation shelter.

