

Table S1: Microbial aetiology in individual cohorts stratified according to CURB65 severity score					
EDINBURGH COHORT					
CURB 65	N	Mild (0-1)	Moderate (2)	Severe (3-5)	Risk ratio
N	224	84	54 (138)	86	
<i>S. pneumoniae</i>	107	32	30	45	1.16 (0.89 – 1.52)
<i>H. influenza</i>	22	11	6	5	0.47 (0.18 – 1.23)
MSSA	18	7	3	8	1.28 (0.53 – 3.13)
MRSA	2	2	0	0	0.32 (0.016 – 6.58)
All Atypicals combined	22	13	4	5	0.47 (0.18 – 1.23)
Gram negative <i>enterobacteriaceae</i>	15	2	1	12	6.42 (2.86 – 22.10)
<i>P. aeruginosa</i>	2	1	1	0	1.28 (0.53 – 3.13)
MDR pathogens combined	7	3	1	3	1.59 (0.33 – 7.71)
MILAN COHORT					
CURB65		Mild (0-2)	Moderate (2)	Severe (3-5)	Risk ratio
N	170	35	52 (87)	83	-
<i>S.pneumoniae</i>	63	14	20	29	0.89 (0.60 – 1.33)
<i>H.influenzae</i>	6	3	0	3	1.05 (0.22 – 5.05)
MSSA	21	0	3	18	6.3 (1.92 – 20.56)
MRSA	16	0	8	8	1.05 (0.41 – 2.66)
All Atypicals combined	35	13	12	10	0.42 (0.21 – 0.82)
Gram negative <i>enterobacteriaceae</i>	30	2	10	18	1.57 (0.81 – 3.06)
<i>Pseudomonas</i>	12	3	2	7	1.47 (0.48 – 4.44)
MDR pathogens	58	10	21	27	0.91 (0.60 – 1.39)
FAILCAP COHORT					
CURB65		Mild (0-2)	Moderate (2)	Severe (3-5)	Risk ratio
N	145	36	51 (87)	58	
<i>S.pneumoniae</i>	54	11	20	23	1.11 (0.73 – 1.70)
<i>H.influenzae</i>	3	2	0	1	0.30 (0.01 – 6.21)
MSSA	8	3	1	4	1.50 (0.39 – 5.76)
MRSA	12	1	5	6	1.50 (0.51 – 4.42)
All Atypicals combined	29	11	13	5	0.32 (0.13 – 0.81)
Gram negatives <i>enterobacteriaceae</i>	13	2	4	7	1.75 (0.62 – 4.94)
<i>Pseudomonas</i>	7	0	2	5	3.75 (0.75 – 18.68)
MDR pathogens	18	3	5	10	1.88 (0.79 – 4.47)

Table S2: Microbial aetiology in individual cohorts stratified according to the Pneumonia Severity Index					
PSI	n	Mild (1-2)	Moderate (3)	Severe (4-5)	Risk ratio
EDINBURGH COHORT					
N	224	69	44	111	
<i>S. pneumoniae</i>	107	26	21	60	1.30 (0.98 – 1.72)
<i>H. influenzae</i>	22	8	7	7	0.47 (0.20 – 1.12)
MSSA	18	5	3	10	1.27 (0.52 – 3.11)
MRSA	2	1	1	0	0.20 (0.0099 – 4.19)
All Atypicals combined	22	13	2	7	0.48 (0.20 – 1.12)
Gram negative <i>enterobacteriaceae</i>	15	2	2	11	2.80 (0.92 – 8.53)
<i>P. aeruginosa</i>	2	0	0	2	5.09 (0.25 – 104.83)
MDR pathogens combined	7	1	2	4	1.35 (0.31 – 5.92)
MILAN COHORT					
PSI		Mild (1-2)	Moderate (3)	Severe (4-5)	Risk ratio
N	170	16	16 (32)	138	
<i>S.pneumoniae</i>	63	5	5	53	1.22 (0.71 – 2.14)
<i>H.influenzae</i>	6	2	0	4	0.46 (0.089 – 2.42)
MSSA	21	1	0	20	4.64 (0.65 – 33.3)
MRSA	16	0	1	15	3.48 (0.48 – 25.38)
All Atypicals combined	35	8	7	20	0.31 (0.18 – 0.53)
Gram negative <i>enterobacteriaceae</i>	30	1	2	27	3.03 (0.76 – 12.08)
<i>Pseudomonas</i>	12	0	1	11	2.55 (0.34 – 19.05)
MDR pathogens	58	2	5	51	1.69 (0.85 – 3.37)
FAILCAP COHORT					
PSI		Mild (1-2)	Moderate (3)	Severe (4-5)	Risk ratio
N	145	24	14 (38)	107	
<i>S.pneumoniae</i>	54	8	6	40	1.01 (0.63 – 1.65)
<i>H.influenzae</i>	3	1	1	1	0.18 (0.017 – 1.90)
MSSA	8	1	0	7	2.49 (0.32 – 19.55)
MRSA	12	1	0	11	3.90 (0.52 – 29.26)
All Atypicals combined	29	10	3	16	0.44 (0.23 – 0.82)
Gram negatives <i>enterobacteriaceae</i>	13	0	1	12	4.26 (0.57 – 31.68)
<i>Pseudomonas</i>	7	0	1	6	2.13 (0.27 – 17.13)
MDR pathogens	18	2	0	16	2.84 (0.68 -11.79)
BARCELONA COHORT n =665					
PSI		243	164	258	
N		53	45	83	
<i>S.pneumoniae</i>		38	32	53	0.89 (0.73 – 1.10)
<i>H.influenzae</i>		1	2	2	0.79 (0.13 – 4.60)
MSSA		1	0	0	0.39 (0.016 – 9.52)
MRSA		3	2	5	1.18 (0.35 – 3.94)
All Atypicals combined		7	2	8	1.05 (0.42 – 2.60)
Gram negatives <i>enterobacteriaceae</i>		3	2	5	1.18 (0.35 – 3.94)
<i>Pseudomonas</i>		1	5	7	1.38 (0.48 – 3.94)

MDR pathogens		3	2	7	1.65 (0.55 – 5.01)
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