Table 1 Clinical course of influenza illness and major complications according to the results of influenza A/H1N1 testing

	A/H1N1+ve (n=68)	A/H1N1−ve (n=59)	All patients	RR (95% CI)	p
Duration of disease (days)*	5 (3−11)	10 (6−14)	7 (4−14)	−	0.002
Pulmonary exacerbation†	46 (67.6%)	47 (79.7%)	93 (73.2%)	0.85 (0.69−1.05)	0.127
Hospitalisation	47 (69.1%)	41 (69.5%%)	88 (69.3%)	1.00 (0.79−1.25)	1.000
Antiviral therapy‡	56 (82.4%)	7 (11.1%)	63 (49.6%)	−	<0.0001
Complications	10 (14.7%)	7 (11.9%)	17 (13.4%)	1.24 (0.50−3.05)	0.795
Permanent need for oxygen therapy	1 (1.5%)	0	1 (0.8%)	−	−
Respiratory failure	1 (1.5%)	1 (1.7%)	2 (1.6%)	−	−
Pneumothorax	1 (1.5%)	0	1 (0.8%)	−	−
Haemoptysis	2 (3.0%)	2 (3.4%)	4 (3.1%)	−	−
Atelectasia	0	1 (1.7%)	1 (0.8%)	−	−
Death	3 (4.4%)	1 (1.7%)	4 (3.1%)	2.60 (0.28−24)	−

*Among the 68 patients with A/H1N1 infection, duration of disease was 5 (3−9) days in the 56 patients treated with oseltamivir and 5 (3−11) days in the 12 patients who did not receive antiviral treatment (p=0.874).
†Among the 68 patients with A/H1N1 infection, pulmonary exacerbations occurred in 69.6% of patients treated with oseltamivir and in 58.3% of those who did not receive antiviral therapy (p=0.505).
‡Among the 68 patients with A/H1N1 infection, complications occurred in 17.9% of patients treated with oseltamivir and in none of those who did not receive antiviral therapy (p=0.189).

Oseltamivir (2−3 mg/kg/day as currently recommended) was administered to 82% A/H1N1+ve and 12% A/H1N1−ve patients. In the A/H1N1+ve group, treatment was started within 24−48 h from symptom onset upon virological confirmation. Oseltamivir was well tolerated and no treatment cessation was required. In one AH1N1+ve patient complications were associated with development of oseltamivir resistance.[5]

Clinical course and duration of disease are reported in table 1. In the entire CF patient population, shorter disease duration was seen in oseltamivir treated patients (5, 4−11 vs 10, 6−14 days; p=0.008), a difference apparently limited to the A/H1N1−ve subset.

During illness, 68% A/H1N1+ve and 80% A/H1N1−ve patients developed pulmonary exacerbations (p=0.127). Disease course was uncomplicated in 85% and 88% patients, respectively (p=0.639). Of note, immunosuppressive therapy for organ transplantation did not increase risk of complications in either group.

Four patients with severe pulmonary disease (3 A/H1N1+ve, 1 A/H1N1−ve) died of respiratory failure: none had been vaccinated and all had received antiviral therapy (online supplementary table S2).

No significant FEV_1 decline was observed in both groups after 1 and 6 months from symptom onset (online supplementary figure S2). In none of the cases, new isolation of *Pseudomonas aeruginosa* or *Burkholderia cepacia* complex was documented.

In conclusion, in a cohort of patients who consecutively presented to Italian CF centres for flu-like symptoms during the 2009 pandemic period, accurate diagnostic testing did not identify clinical characteristics specifically associated with A/H1N1 infection, the only exception being younger age in A/H1N1+ve patients. The use of a reliable identification method allowed appropriate treatment to be initiated.

Systematic collection of data at patient presentation and subsequent follow-up provided further information on A/H1N1 infection in CF, which will be useful to patients for the next influenza season.

Influenza A/H1N1 has no major impact in CF, but patients with poor clinical conditions due to the disease are exposed to substantial risk of complications and unfavourable outcomes. Annual vaccination for seasonal influenza and A/H1N1 influenza is recommended in CF, with continuing efforts towards higher vaccination coverage levels especially in adult subjects.

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The mortality of treated acute PE

I read with interest the editorial in *Thorax* entitled 'Identification of those at risk after acute pulmonary embolism'.[1] In the second paragraph, the authors state and reference the inpatient mortality for normotensive patients with acute PE as ~10%.

My concern is twofold. First it is that readers may surmise that the mortality of acute treated PE is as quoted, when in reality the all-cause out of hospital 3 month mortality of those with PE is 9% in the reference quoted. This level of mortality relates not just to the PE but to the co-morbidities, such as cancer, that this cohort frequently possess. Secondly, in clinical experience it seems a rarity that those even with a large clot burden identified on CT pulmonary angiography (CTPA) and without life-threatening co-morbidities do not improve their clinical state once treated with anticoagulation. Do the editors know of any studies that clearly identify the cause of death systematically in those with PE so that we can truly pick out the mortality associated with this diagnosis?

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Authors' reply

We welcome the letter from Dr Iles and the opportunity to make additional comments on the subject of our recent editorial.[1] It is correct that the mortality rate in normotensive patients with acute pulmonary embolus (PE) reported in the recent study by Boca *et al*[2] refers to all-cause mortality at 3 months and not inpatient mortality, and we are pleased to have the opportunity to clarify this. A wide range of mortality rates in acute PE have been reported in published studies, depending on whether hypotensive and normotensive patients are included together or reported separately and whether inpatient, 30-day or 3-month mortality is quoted as an end point. Furthermore, identifying the exact cause of death in studies of PE is very difficult and few if any have been able to provide accurate data on this, therefore most report all-cause mortality. In the recent European Society of Cardiology guidelines on acute PE[3] it states that the risk of early mortality in normotensive patients with acute PE is dependent on the presence of right ventricular dysfunction (RVD) on transthoracic echocardiography, with studies reporting rates of 3–15% in those who are normotensive with RVD and <3% in those without RVD. Indeed, in the ICOPER study,[4] 50% of normotensive patients with acute PE had RVD and the mortality in that group was 10%, much higher than in those who were normotensive but without evidence of RVD. These observations imply that, even in normotensive patients, clot burden as implied by the presence of RVD contributes to the risk of early death. This suggests that death after PE in those normotensive at presentation is not simply down to other diagnoses such as cancer but that cardiorespiratory comorbidities are likely to contribute to the risk in an additive way. In a recent study by Ibrahim and colleagues which included >15 000 patients with acute PE, the 30-day mortality rate in normotensive patients not receiving thrombolysis was 7.7% and the in-hospital mortality rate for normotensive patients who did not receive thrombolysis was 7.2 per 1000 person days.[5] We therefore believe that it would be wrong to underestimate the early acute PE-associated mortality risk, even in normotensive patients. We believe this is significant in those with objective evidence on echocardiography or on cardiac biomarkers of RVD. It is this association which is eloquently described in the original article on which our editorial was based, stressing its importance to the literature.[6]

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Predicting CAP-related mortality with CRB-65

Ewig *et al* are to be commended for their very large study of 388 406 patients admitted with community-acquired pneumonia (CAP) in German hospitals from 2005 to 2006.[1] Using the CRB-65 tool (confusion, respiratory rate ≥30 min, low blood pressure (either systolic <90 mm Hg or diastolic ≤60 mm Hg) and age ≥65 years), the authors found 30-day mortality rates of 2.4, 13.4 and 34.4% in those with 0 points, 1–2 points and 3–4 points, respectively. As a result, the authors promote this tool as being accurate for predicting CAP-related deaths.

However, while this appears impressive, it is notable that of the >54 700 deaths, only 29.0% were classed as high risk, whereas 68.1% were only intermediate risk and 2.8% were low risk. In addition, many of those patients who died had treatment limitations applied and only 15.7% of the patients who died received ventilatory support. These two points raise the question of how clinically useful this tool really is. If over two-thirds of deaths were classed as having clinically 'moderate' CAP, then the tool cannot really be described as being accurate for this purpose. Furthermore, if the vast majority of people who died did so after active treatment was withdrawn, then the identification of such patients does not appear to serve much purpose. It would be more relevant to assess such a tool for its ability to identify those patients in whom every effort is made to save their lives—that is, those admitted to the intensive care unit.

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Authors' response

We thank Dr Charles for his important comments.[1]

He raises the important question of whether CRB-65 is a useful tool to advise treatment limitations. If only 29% of those who finally died were at high risk of death at initial presentation (CRB-65 risk class 3), such a tool may be of limited value in this regard. In fact, we agree that the CRB-65 score (like any other such as the PSI) is not helpful for the decision to apply treatment restrictions. Such restrictions up to fully palliative treatment cannot be based primarily on considerations about the current risk of death but should be the result of a careful evaluation of the clinical state and overall prognosis of the patient, both initially and during follow-up, and such decisions should be decided with the patient or his legal social worker.

In this context, the CRB-65 severity score remains important as part of the initial clinical evaluation of all patients. Treatment restrictions must not follow a hidden agenda