

PILOTING GP SURVEILLANCE FOR INFLUENZA-LIKE ILLNESS, MALTA 1999-2000 SEASON

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INTRODUCTION

Through a joint effort of a team of three private GPs, the Department of Public Health and the Department of Virology at SLH, an attempt was made to survey the influenza season in Malta through epidemiological and virological means. The main objectives of the endeavour were:

1. Enhancing the process of influenza notification
2. Describing the epidemiology from private practitioners' perspectives
3. Obtaining virological evidence to support epidemiological findings
4. Piloting for the first time sentinel surveillance in general

Methods

Two GPs based in the central and southern parts of Malta, and one in Gozo, were involved in notifying patients with influenza-like illness who fitted a particular case definition of fever with coryza over November 1999 through February 2000. Participant reporters were selected by convenience sampling: they were expected to complete a report form for each classifying patient seen, indicating name, sex, age, town of residence, symptomatology, date of onset, influenza vaccine status for the previous season and date of examination.

Blood serology was undertaken from amongst a sub sample of the reported cases to check specifically for IgA to influenzas A and B and respiratory syncytial virus¹. IgM ELISA was used to differentiate 3 cases testing inconclusively and two others as an initial test.

Testing was not offered to:

- patients aged under 12 years
- members of the same household as someone already tested
- those having the influenza vaccine earlier on in the same season
- patients whose date of onset of first symptom had exceeded 2 weeks at the encounter

Results

Table 1 shows the distribution by age group and sex of the reported cases. The median age was 25 (range 2-77y). Patients originated from 12 villages in Malta and 9 in Gozo (Chart 1). Table 2 gives the dates of onset for the reported cases.

Age group (years)	F	M	Total
0 to 4	2	2	4
5 to 14	13	7	20
15 to 24	11	21	32
25 to 44	14	22	36
45 to 64	7	7	14
65 +	4	4	8
Total	51	63	114

Table 1. Distribution by age and sex.

The study failed to achieve completeness in reporting. One of the reporting GPs was suddenly inundated and stopped reporting from the start of 2000, while another failed to notify all cases.

Week of onset	Cases
45/1999	15
46/1999	13
47/1999	9
48/1999	2
49/1999	7
50/1999	3
51/1999	5
52/1999	9
01/2000	14
02/2000	24
03/2000	1
04/2000	7
05/2000	1
06/2000	0
07/2000	0
08/2000	4

Table 2. Week of onset for reported cases.

Table 3 summarises the list of symptoms reported by the cases apart from fever and coryza.

Symptom	Frequency
Headache	81.5%
Cough	76.3%
Sore throat	73.7%
Musculo skeletal pains	54.4%
Nausea	30.7%
Diarrhoea	13.2%
Vomiting	13.2%

Table 3. Frequency of symptoms for reported cases.

11.2% of cases reported having had the vaccine for influenza before the current season. Of the 39 tested (34% of cases), 18 were negative for all antibodies, 15 were positive for Influenza A alone and 2 for RSV. One sample was haemolysed and three others tested positive for Influenza A and B with IgM ELISA.

Univariate² and logistic regression analyses³ failed to show significant associations between testing positive for Influenza A and age, sex, flu vaccination or the symptoms listed in Table 3.

Main discussion points

- In conclusion, influenza A antibodies were elevated in over one third of the patients tested during this surveillance. No clinically useful associations were found between influenza A positivity and symptomatology, age or sex, largely because the small numbers surveyed precluded

significance testing.

- In the rest of Europe and in Tunisia, from October 1999 to end February 2000, 32 countries reported influenza to WHO. Almost all viral isolates have been Influenza A subtype H3N2, antigenically similar to the viruses that have predominated since the 1997-98 season, and well matched to A/Sydney/5/97 of the last vaccine. There were also a few other reports of influenza A (H1N1) and influenza B⁴. In a country-wide sentinel surveillance program linked to virological confirmatory testing in Italy, during the 1999-2000 season,⁵ the Istituto Superiore di Sanita' also noted a steady rise in influenza activity over the weeks 51/99 to 02/00, with a gradual drop in incidence in the following 5 weeks. 99% of isolates successfully subtyped were Influenza A H3N2. A similar pattern of disease was observed in Denmark⁶.
- Outbreaks of influenza-like illness (ILI) have been correlated with epidemics of meningococcal disease for up to 2 months during and after an epidemic⁷. Moreover, during the influenza season of 1989 in Britain, patients with meningococcal disease were nearly four times more likely to have had recent influenza A than controls⁸. Confirmation of such outbreaks may therefore have practical application in alerting the community physician to the increased likelihood of concurrent invasive N.meningitidis disease, more so that modern influenza treatments may offer protection from serious sequelae⁹.
- The time trend is only crudely indicative of the epidemic coming to a peak in the first and second weeks of this year. It should only be used to indicate the profile of the

cases studied rather than disease activity in the community. Similarly, Chart 1 maps the extent of the practices involved rather than the epidemic. There is ample evidence that the outbreak was countrywide¹⁰. As there was no attempt at reporting all cases fitting the definition over the period of surveillance, no extrapolation to the study population was possible.

Recommendations for future

Future attempts at a similar project would have to consider having in particular:

1. To adopt a more universally acknowledged (and internationally comparable) case definition such as the one applied by CDC for ILI¹¹, which is temperature $\geq 100^{\circ}\text{F}$ ($\geq 37.8^{\circ}\text{C}$) plus either cough or sore throat. The ILI definition used by the Italian group mentioned above was considered too restrictive for the local situation. Additionally, the monitoring index should be expressed as 'daily proportion consultations with ILI' - per 100 or 1000 - rather than absolute numbers without a denominator. This would avoid having to estimate the practice population and would be more accurate. Information about concurrent hospital activity such as proportional mortality from 'pneumonia and influenza', all cause mortality and hospital admissions for respiratory disorders have been usefully applied in the UK¹² and the US¹² to interpret better the influenza pattern in the community;
2. The paper reporting could be facilitated using spread-sheeted line-lists rather than individual forms;
3. Participant doctors should be better briefed and supported with feedback. Doctors who are willing to report

electronically and regularly should be preferred. A motivation mechanism could entail accreditation points with the Malta College of Family Doctors, or involvement in official publication and presentation of findings in a subsequent conference;

4. Laboratory testing should primarily aim for virological isolation rather than indirect testing. In this instance, arrangements would need to be done with overseas centres that can do such testing as collaborative research or against payment. Only such analyses could give definitive characterisation of viruses for meaningful sero-epidemiological interpretation and comparison with regional researchers.

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