# MONITORING OF WINTER DEATHS

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## ABSTRACT

Active monitoring of weekly deaths at a European level will assist member states by providing rapid assessment of the impact of threats in order to further guide policy development and risk management. In January 2015 an excess all-cause mortality has been reported in some European Countries.

## INTRODUCTION

The influence of seasonality on mortality is well documented, and mortality among residents of the Maltese Islands typically sees increasing number of deaths during the winter (December-March) when compared to the rest of the year.[1] This is pronounced in the elderly population. This is commonly attributed to the cold weather as well as increased circulation of respiratory viruses.

According to the European Monitoring of excess mortality for Public Health Action[2] (Euro MOMO) excess all-cause mortality (represents all deaths irrespective of the cause of death) has been observed among the elderly since the beginning of the year in nine of 15 reporting countries. An excess number of deaths among the elderly was observed in Portugal, England, Scotland, Wales, France, Netherlands, Belgium, Spain and Switzerland.

The latest official statistics on deaths in England and Wales reported that in the last two weeks of December 2014 there was a significant excess mortality mainly in the elderly (65+), coinciding with circulating influenza and cold snaps.[3] A significant excess mortality was also seen in the last three weeks of January 2015.[4]

According to Flu News Europe,[5] which reports from the WHO Global Influenza Surveillance and Response System, Influenza A(H1N1)pdm09, A(H3N2) and type B viruses continued to circulate in the European Region, with A(H3N2) predominating. Most of the A(H3N2) viruses characterized so far show antigenic differences from the virus included in the 2014–2015 northern hemisphere influenza vaccine. A reduction in the effectiveness of the A(H3N2) component of the vaccine was therefore expected, which in turn may have contributed to the excess mortality reported among elderly people in some European countries. However the vaccine is still expected to provide some cross-protection against A(H3N2) viruses, which may reduce the likelihood of severe outcomes such as hospitalization or death, in some cases. The A(H1N1)pdm09 and B components of the vaccine are likely to be effective.

The circulation of respiratory syncytial virus (RSV) has decreased across the Region, following peak activity during the first two weeks of 2015.[5]

**Table 1:** Deaths per week from week 51 (December 2014) to week 4 (January 2015) compared to the average of the last 3 winter seasons, in all age groups. Source: National Mortality Registry, Directorate of Health Information and Research

| Weekly and average daily deaths per week in all age groups | | | | | | | |
|---|---|---|---|---|---|---|---|
| Dec 2014/ Jan 2015 | No of deaths per week | Average daily no. of deaths in residents | Lower and Upper CI per week | Average of: Dec13/Jan14, Dec12/Jan13, Dec11/Jan12; | No of deaths per week | Average daily no of deaths in residents | Lower and Upper CI per week |
| Week 51 | 76 | 10.86 | (10.0;11.70) | Week 51 | 75 | 10.71 | (10.36;11.07) |
| Week 52 | 83 | 11.86 | (10.06;13.66) | Week 52 | 76 | 10.81 | (10.22;11.40) |
| Week 1 | 84 | 12.00 | (11.03;12.97) | Week 1 | 80 | 11.38 | (10.93;11.83) |
| Week 2 | 94 | 13.43 | (12.85;14.00) | Week 2 | 76 | 10.90 | (10.11;11.70) |
| Week 3 | 93 | 13.29 | (12.19;14.39) | Week 3 | 84 | 12.00 | (11.61;12.39) |
| Week 4 | 72 | 10.29 | (9.74;10.83) | Week 4 | 82 | 11.76 | (11.01;12.51) |
| **Overall** | **502** | **11.95** | **(10.90;13.01)** | **Overall** | **473** | **11.26** | **(10.23;12.29)** |

## THE SITUATION IN MALTA

What is the situation in Malta? Are more deaths being reported in the general population or in the more vulnerable groups, such as those aged 65 years and over?

The National Mortality Registry within the Directorate of Health Information and Research collects death certificates of all deaths occurring within the Maltese Islands. In order to study whether a situation similar to the above is occurring in Malta, deaths during the last two weeks of 2014 (week 51, 52) as well as first four weeks in 2015 (week 1-4) were compared to the average number of deaths during the same weeks over the past three years. The average number of daily deaths during the whole six weeks for the last 3 years were compared to the daily number of deaths during the present season. More detailed analysis included comparing the average number of daily deaths on a weekly basis as well as analysing deaths in persons aged 65 years and over. Only residents of the Maltese Islands were included in the analysis.

## RESULTS

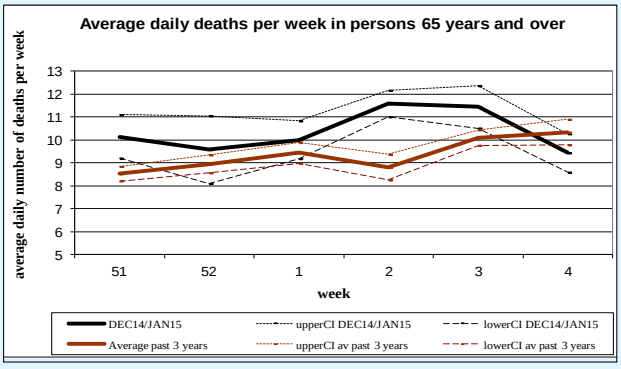
As seen in table 1 the overall number of deaths for all age groups during the six week period was greater during Dec 2014/Jan 2015 then the past 3 year average. Although the average number of daily deaths during Dec 2014/Jan 2015 (11.95, CI 10.90;13.01) was greater than the past 3 year average (11.26, CI 10.23;12.29), there was no significant difference between the two periods as confidence intervals overlap.

Interestingly, when looking at deaths during each week separately, overall there are more deaths per week during the present winter season, in all weeks except the last week of January 2015, with significantly more deaths during the second and third weeks of January (highlighted in table 1 ). During the last week of January there were significantly less deaths when compared to the past average 3 year period.

## DEATHS IN PERSONS OVER 65 YEARS OF AGE

A more detailed analysis was undertaken to compare weekly deaths in persons 65 years and over (figure 1). During week 51, as well as weeks 2 and 3 there was a significant increase in the average number of daily deaths compared to the past 3 year average. The opposite was true for week 4. Overall the current average number of daily deaths in persons 65 years and over was 10.36 (CI 9.42;11.30) and this was marginally but significantly higher than the past 3 year average, in which the average number of daily deaths was 9.36 (CI 8.40;10.31).

**Figure 1:** Average number of daily deaths per week during December 2014 and January 2015 compared to the average of the last 3 winter seasons in persons aged 65 years and over. Source: National Mortality Register, Directorate of Health Information and Research




## DISCUSSION

Excess all-cause mortality cannot with certainty be attributed to specific causes, but may be associated with circulating influenza, extreme cold or increase in acute respiratory illness. Malta, similar to another 21 countries - predominantly in western, northern and central Europe and the Russian Federation - reported medium-intensity, i.e. usual-level, influenza activity this year.[5] In Malta this is based on a sentinel surveillance system in which a group of physicians report the weekly number of patients seen with influenza-like illness (ILI) to the Infectious Disease Prevention and Control Unit.[6]

Further analysis of this mortality data is warranted in order to verify whether these deaths represent 'excess deaths' or are a result of harvesting or short- term forward shift in mortality, in debilitated, older persons.

While in Malta attention and health warnings are given for hot weather, due to the mildness of our winters, fewer precautions are taken.[1] In view of this fact, health care professionals are encouraged to continue to engage and advise their patients regarding precautions to take in order to reduce the risks associated with developing chest infections (e.g. good hygiene and stopping smoking). Furthermore, one should stress the importance of keeping warm. It is important to continue encouraging vulnerable groups especially the elderly and those with chronic diseases to take the influenza vaccine. It is well documented that even if there is a mismatch in the vaccine and circulating virus during the influenza season there is a degree of cross protection and this plays a part in reducing to some degree the likelihood of severe outcomes like hospitalisation and death.[7]

The Euro MOMO[8] provides a standardised approach developed and utilised by a European network of national surveillance centres, which reports expected number of deaths and observed number of deaths by week of death corrected for reporting delay. Malta has recently indicated its interest in forming part of the Euro MOMO network. Its activities improve the member states capacity for generic preparedness and response by providing data that support crisis management and evaluate impact of public health interventions. It increases in particular the capacity to deal with pandemic influenza and tackle European health threats by providing real-time data on deaths related to pandemic influenza, newly emerging infections, bioterrorism and other threats such as heat waves and cold snaps. The data may serve as an early warning of impending catastrophes and will provide rapid assessment of the impact of threats to further guide policy development and risk management.

REFERENCES CAN BE ACCESSED ON THESYNAPSE.NET