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Mini Review

# Hidden Neurological Deaths Epidemic' 21<sup>st</sup> Century: Where is Preventative Medicine?

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This brief review of a 'hidden epidemic' of neurological deaths in the Major Western Countries (MWC), based on statistically controlled in well-established studies [1,2] indicates that there is no recognized Preventative Medicine' approach. The first international comparative study, in 1979 up to the 21<sup>st</sup> Century, shows neurological deaths are accelerating this Century. Some argued the increases were primarily due to demography, especially amongst the Over 75's. We show, based upon WHO data on the twenty-one liberal-democratic comparable MWC, that neurological conditions are starting earlier, seen in people aged 55-74, which is well below the average life expectancy of MWC, hence described as 'Early Adult Deaths' (E.A.D). In addition, total WHO neurological deaths, controlled for age, sex and population Age-Standardised-Death-Rates (ASDR), are examined to indicate whether or not there are true increases during the 21<sup>st</sup> Century, based upon controlled E.A.D and total ASDR, over the period of [1,2].

Combined Neurological Mortality (CNM) deaths are taken from two WHO global neurological mortality categories, Nervous Disease Deaths (NDD) and Alzheimer's & Other Dementias (AlzD). As these WHO categories include all the diagnostic conditions, this means we do not be concerned about separate diagnoses, rather than global changes, which are appropriate for epidemiological international comparisons.

Table 1 lists E.A.D, of the three highest and lowest MWC, to find that NDD was higher than AlzD, as NDD rises are not linked to Alzheimer's and Other Dementias.

Finland had the highest neurological rates at 1006 per million (pm), followed by the USA at 710pm and the UK at 653pm, a real increase in rates by 32% during the Century. Whilst the lowest countries, Austria, Greece and Japan had

**Table 1:** Nervous Disease Deaths (NDD) & Alzheimer & Other Dementia Deaths (AlzD) are Combined Neurological Mortality (CNM) 55-74-year-olds rates per million 2000 v 2015.

Country & Ratio change	NDD 55-74 2000 v2015	AlzD 55-74 2000 v 2015	CNM 55-74 2000 v 2015
1. Finland	394 - 642	305 - 364	699 - 006
Ratio change	63%	19%	44%
2. USA	364 - 455	147 - 255	511 - 710
Ratio change	25%	73%	39%
3. UK	256 - 399	164 - 254	420 - 653
Ratio change	56%	55%	32%
19. Austria	160 - 286	74 - 129	234 - 415
Ratio change	79%	74%	77%
20. Greece	213 - 279	121 - 99	334 - 378
Ratio change	31%	-18% #	13%
21. Japan	123 - 180	28 - 26	151 - 206
%change	46%	-7 % #	36%

risen 77%, 13%, and 36% respectively. Only Belgium, Canada and France had shown any fall in E.A.D.

Total Combined Neurological Mortality (CNM) at ASDR rose in every twenty-one MWC, an average increase of 49%, biggest increases were in UK 95% and other marked rises were Finland 82%, Japan 80% and USA 68% [Table 2].

However, statistical rates obscure the practice reality, so we report on actual numbers of deaths, which gives a more realistic perspective on families and front-line services. During the Century the British E.A.D numbers rose from 4,650 to 9,019 and total neurological deaths went from 24,601 to 103,550, a remarkable rise of 321%. American's E.A.D numbers went from 21,818 to 48,047, more than doubling, and total neurological deaths from 174,708 to 436,438, up 149%. Even in France, whose E.A.D rates had fallen, their total deaths increased from 40,594 to 71,543, a rise of 76%.

**Table 2:** Age-Standardised-Death-Rates – Combined Neurological Mortality (CNM) rates per million 2000 v 2015 (Highest & Lowest).

Country Rank And Year	CNM 2000	CNM 2015	% of Change
1. Finland 2015	259	472	+82%
2. USA 2016	174	292	+68%
3. UK 2015	128	249	+95%
19. Austria 2016	64	106	+66%
20. Greece 2015	53	67	+26%
21. Japan 2015	30	54	+80%
Western Average	129	192	+49%

These numbers are a clear indication of the burden and stress upon families and their services during the Century.

What might his account for these rises, other than demography? There is growing evidence of a range of multiple-interactive-environmental pollutions, related to neurodegenerative diseases ranging from solvent, engineering, chemical occupations, heavy metals in food and water, pesticides, plastics, endocrine disruptive chemicals, Petrochemicals from the road and air transport, including air-pollution and organophosphates, etc. In addition, the very low frequency but prolonged ubiquity exposure of electro-magnetic-field (EMF), which is feared might be a tripping point for the other environmental factors [3,4].

This challenges the complacency of the vested interests, not least from the EMF, as the European Union report commented, that the industrialist was not focusing upon possible negative impact on human health, “*but there are beginning to emerge*” [5], whilst the US Federal Communication Commission has been successfully prosecuted by the Environment Health Trust, that they were failing in giving recognition to recent research

[6], quoted in another recent authoritative study “*compelling evidence of new electric mechanisms in human brains may interfere with the evolution of neurodegenerative disease*” [4].

Finally, linking statistics and practice, when we considered the increase of thousands of neurological early-onset conditions during this Century, it is time for a new ‘preventative medicine’ approach.

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