Figure 2 (***supplemental online***): Public health (PH) perspectives on falling life expectancy, with solutions

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| Population data, life course perspective, transdiagnostic, plastic risk & protective factors, interactions of biological, social, economic and other societal factors for example discrimination (based on race, gender, sexuality etc.), place-based (urban, rural, intermediate) | PH **solutions** –invisible (sanitation), often hard won e.g. victories over Big Tobacco: Gallea Chapter 48, 2018. |
| Sources: 1. NHS England inequalities definition from Barnard-Kelly KD, Cherñavvsky D.(2020); 2. Singer M (2017); 3. Baciu, Negussie (2017) | Applied to public mental health:Galea (2018) urges PH colleagues to follow a “scholarship of consequence”, placing their work at the centre of the public good that is Health. (It) “gets messier (as public health intrudes into) fields such as economics and sociology”The *World Health Organisation* advocates three solutions to reverse the social determinants: social protection, universal healthcare and health equity in all policies (WHO, 2008). Principle of **proportionate universalism** that is, delivering health and other interventions to the people whose need for them is greatest (Marmot, 2005).Getting it right for every child, Scotland <https://www.gov.scot/publications/girfec-national-practice-model/> Bristol One City initiative to prevent or mitigate adverse childhood experiences: <https://www.bristolonecity.com/health-and-wellbeing/adverse-childhood-experiences/>  |
| Marteau et al (2021) reported **falling life expectancy** in England 7 years between 2012 - 2018:Male life expectancy gap between most and least deprived areas increased from 9.1 to 9.5 years;for women, the gap increased from 6.8 to 7.1 years; time spent in poor physical health increased over the same 7 year period in England: in men, from 15.8 to 16.2 years for women, from 18.7 to 19.4 years; healthy years losses were greatest in most deprived. Delgado et al (2021) define ***population health improvement*** as “concerted, intentional and systematic efforts by those working together towards measurable improvement of health and wellbeing outcomes, co-produced with and for the population in their locality”; their shared method is:Assess (problems + systems) → Agree key aims → Act / Intervene → Measure → Acknowledge  | Universal solutions: restore income lost during austerity years, improve housing and PH resources, invest in early years; policies to reduce smoking, obesity, alcohol misuse, addiction and other drivers of physical illnesses and mental disordersSelective: Deep End projects in primary care to reverse Inverse Care Law e.g. Dublin: Kiely, Clyne (2021) |

Table Two: ***(supplemental online)*** Understanding the effects of Four or More ACEs (Adverse Childhood Experiences): data based on 14,661 young adults in education from Karen Hughes, Lancet Public Health, 2017 - The effect of multiple adverse childhood experiences on health: a systematic review and meta-analysis

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| Physical inactivity | 1·25 (1·03–1·52) |  | Anxiety | 3·70 (2·62–5·22) |
| Overweight or obesity | 1·39 (1·13–1·71) |  | Low life satisfaction | 4·36 (3·72–5·10) |
| Diabetes | 1·52 (1·23–1·89) |  | Depression | 4·40 (3·54–5·46) |
| Cardiovascular disease | 2·07 (1·66–2·59) |  | Illicit drug use | 5·62 (4·46–7·07) |
| Heavy alcohol use | 2·20 (1·74–2·78) |  | Problematic alcohol use | 5·84 (3·99–8·56) |
| Poor self-rated health | 2·24 (1·97–2·54) |  | Violence victimisation | 7·51 (5·60–10·08) |
| Cancer | 2·31 (1·82–2·95) |  | Violence perpetration | 8·10 (5·87–11·18) |
| Smoking | 2·82 (2·38–3·34) |  | Problematic drug use | 10·22 (7·62–13·71) |
| Respiratory disease | 3·05 (2·47–3·77) |  | Suicide attempt | 30·14 (14·73–61·67) |

Table Three: **(supplemental online)** Kings Fund Recommendations from “Bringing together physical and mental health A new frontier for integrated care”

Source: <https://www.kingsfund.org.uk/publications/physical-and-mental-health>