## LATEX template

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**Background**

Deaths of parents and grandparent caregivers threaten child wellbeing due to losses of financial support, housing, safety, family stability, and care globally, but are rarely recognised as a public health crisis. For some important causes, orphanhood is preventable – for example, prescription

drug overdose due to depression, as recent reports highlight. For all causes, evidence shows that long-term negative impacts of orphanhood and co-residing caregiver loss are preventable: with strong positive parenting, economic

and educational support for surviving caregivers, children’s outcomes can be equal to those of non-orphaned children. Little is known about the full burden, trends, and disparities in all-cause and cause-specific orphanhood and caregiver loss, beyond estimates from select causes.

**Main findings and limitations**

In the U.S., incidence and prevalence trends in orphanhood and co-residing primary and secondary grandparent caregiver loss increased in total by 49.5% and 7.9%, respectively from 2000-2021. By 2021, 2.38 million children (3.4% of children) experienced prevalent orphanhood, 217,000 (0.3%) primary grandparent caregiver loss (providing most basicneeds), and 342,000 (0.5%) secondary grandparent caregiver loss (providing housing but not most other basic needs). Evidence shows that co-residing grandparents also provide salient nurturing and practical care. We found 66.8% of orphaned children lost their father in their lifetime, and 33.2% lost their mother. Populations disproportionately affected by orphanhood included 5.2% of all adolescents; 6.4%, 4.7%, and 3.9% respectively of non-Hispanic American Indian/Alaska Native, non-Hispanic Black, and non-Hispanic White children. By 2021, prevalent orphanhood of 3% or greater was pervasive across states, and highest (approximately 5%) in West Virginia, New Mexico, Mississippi, Louisiana, and Kentucky. By 2021, parental death due to drug overdose increased to historic levels surpassing COVID-19 as the leading

cause of incident and prevalent orphanhood nationally during the COVID-19 pandemic. However, the highest cause of orphanhood in 2021 for

every minoritized subgroup was not drug overdose but varied for

paternally orphaned children from heart disease to COVID-19, for non-Hispanic American Indian or Alaska Native, non-Hispanic Black, Hispanic

children, and non-Hispanic Asian children. Variations in leading causes of maternal orphanhood included cirrhosis, COVID-19 and cancer in these minoritized subgroups. Our state-specific analyses showed that orphanhood due to fatal injuries – drug overdose, suicide,homicide, and unintentional injuries – exceeded those linked to leading chronic diseases and were among the top two causes of orphanhood in 46 states. A key limitation

is that our estimates for the number of children affected by orphanhood and caregiver death may be underestimated for causes associated

with erroneous or incomplete reporting; underreporting of caregiver loss is also likely due to unavailability of data on the numbers of children

in the care of coresident grandparents.

**Policy implications**

Policies and programs that provide healing and support for 3 million children in the U.S. who have experienced orphanhood and caregiver loss may contribute to reducing acute and long-term negative effects of this adverse childhood experience. Globally, caregiver loss prevalences

are likely above 4% among children in countries where fertility rates and parental death rates are higher than in the U.S.

Evidence highlights three essential components of orphanhood prevention and response that effectively promote their recovery and resilience and can guide policy investments for both all-cause and cause-specific orphanhood and caregivers: (1) prevent death

of parents/caregivers through timely prevention and treatment of leading causes of death and ensured access to health and

mental health care for all; (2) prepare families to provide safe and nurturing alternative care; and (3) protect children affected by orphanhood and vulnerabilities, through grief and mental health counselling, and parenting, economic, and educational support. Given the scope of orphanhood/caregiver loss and associated threats to the mental and physical health, and lifelong wellbeing of children, these strategies can be contextualised and prioritized.

# Table1: Policy summary

LATEX template

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**Before the COVID-19 pandemic**

**Since the COVID-19 pandemic**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | **2000** | **2019** | **2000-2019** | **2020** | **2021** | **2019-2021** | **2000-2021** |
| **(Number** | **(Number** | **changes** | **(Number** | **(Number** | **changes** | **changes** |
| **of Children)** | **of Children)** |  | **of Children)** | **of Children)** |  |  |
|  | |  |  |  |  |  |  |  |
| **Incidence (n, (95% uncertainty interval))** | |  |  |  |  |  |  |  |
| Total | | 330,413 | 368,892 | +11.7% | 448,894 | 494,036 | +33.9% | +49.5% |
|  | | (302,093, 362,310) | (338,918, 402,024) | (+11.0%, +12.3%) | (414,154, 487,052) | (457,957, 533,274) | (+32.6%, +35.0%) | (+47.2%, +51.5%) |
| Orphanhood | | 262,036 | 292,118 | +11.5% | 360,192 | 407,377 | +39.4% | +55.5% |
|  | | (237,122, 290,407) | (265,553, 321,908) | (+10.9%, +12.0%) | (329,378, 394,370) | (374,905, 442,874) | (+37.6%, +41.2%) | (+52.5%, +58.1%) |
| Primary Grandparent Caregiver Loss | | 31,574 | 29,976 | -5.1% | 34,014 | 32,738 | +9.2% | +3.7% |
|  | | (30,112, 33,202) | (28,741, 31,292) | (-6.3%, -3.8%) | (32,652, 35,388) | (31,419, 34,111) | (+7.9%, +10.7%) | (+2.3%, +5.2%) |
| Secondary Grandparent Caregiver Loss | | 40,106 | 50,404 | +25.6% | 58,938 | 57,914 | +14.9% | +44.4% |
|  | | (38,123, 42,349) | (48,142, 52,813) | (+24.1%, +27.1%) | (56,441, 61,500) | (55,404, 60,587) | (+14.1%, +15.9%) | (+42.5%, +46.1%) |
| **Incidence rate per 100 children (rate, (95% uncertainty interval))** | | | | | | | | |
| Total |  | 0.46 | 0.50 | +10.6% | 0.62 | 0.71 | +41.0% | +56.0% |
|  |  | (0.42, 0.50) | (0.46, 0.55) | (+9.9%, +11.2%) | (0.57, 0.67) | (0.66, 0.77) | (+39.6%, +42.2%) | (+53.5%, +58.0%) |
|  | Orphanhood | 0.36 | 0.40 | +10.4% | 0.49 | 0.59 | +46.9% | +62.1% |
|  |  | (0.33, 0.40) | (0.36, 0.44) | (+9.8%, +10.9%) | (0.45, 0.54) | (0.54, 0.64) | (+44.9%, +48.7%) | (+59.1%, +64.9%) |
|  | Primary Grandparent Caregiver Loss | 0.04 | 0.04 | -6.0% | 0.05 | 0.05 | +15.0% | +8.2% |
|  |  | (0.04, 0.05) | (0.04, 0.04) | (-7.2%, -4.7%) | (0.04, 0.05) | (0.05, 0.05) | (+13.6%, +16.6%) | (+6.7%, +9.7%) |
|  | Secondary Grandparent Caregiver Loss | 0.06 | 0.07 | +24.3% | 0.08 | 0.08 | +21.1% | +50.6% |
|  |  | (0.05, 0.06) | (0.07, 0.07) | (+22.8%, +25.9%) | (0.08, 0.08) | (0.08, 0.09) | (+20.2%, +22.0%) | (+48.7%, +52.4%) |
|  |  |  |  |  |  |  |  |  |
| **Prevalence (n, (95 uncertainty interval))** | | | | | | | | |
| Total | | 2,700,285 | 2,663,581 | -1.3% | 2,772,616 | 2,912,817 | +9.4% | +7.9% |
|  | | (2,450,266, 2,983,377) | (2,419,032, 2,940,459) | (-1.5%, -1.3%) | (2,521,580, 3,055,449) | (2,654,936, 3,202,040) | (+8.9%, +9.8%) | (+7.3%, +8.4%) |
| Orphanhood | | 2,220,606 | 2,159,537 | -2.7% | 2,251,322 | 2,378,250 | +10.1% | +7.1% |
|  | | (2,001,053, 2,472,064) | (1,941,498, 2,408,054) | (-3.0%, -2.6%) | (2,027,683, 2,505,227) | (2,148,223, 2,638,221) | (+9.6%, +10.6%) | (+6.7%, +7.4%) |
| Primary Grandparent Caregiver Loss | | 221,982 | 212,330 | -4.3% | 215,695 | 217,560 | +2.4% | -2.0% |
|  | | (208,916, 235,830) | (201,542, 223,777) | (-5.2%, -3.5%) | (204,853, 227,214) | (206,708, 228,924) | (+2.2%, +2.7%) | (-3.1%, -1.0%) |
| Secondary Grandparent Caregiver Loss | | 281,227 | 315,613 | +12.2% | 330,258 | 342,214 | +8.4% | +21.7% |
|  | | (262,509, 300,825) | (298,427, 333,736) | (+10.8%, +13.7%) | (312,383, 348,923) | (323,917, 361,420) | (+8.2%, +8.6%) | (+19.9%, +23.4%) |

**Prevalence rate per 100 children (rate, (95% uncertainty interval))**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Total |  | 3.73 | 3.64 | -2.3% | 3.81 | 4.20 | +15.2% | +12.5% |
|  |  | (3.39, 4.12) | (3.31, 4.02) | (-2.4%, -2.2%) | (3.46, 4.20) | (3.83, 4.61) | (+14.7%, +15.6%) | (+11.9%, +13.0%) |
|  | Orphanhood | 3.07 | 2.95 | -3.7% | 3.09 | 3.43 | +16.0% | +11.7% |
|  |  | (2.76, 3.42) | (2.66, 3.29) | (-3.9%, -3.5%) | (2.78, 3.44) | (3.10, 3.80) | (+15.4%, +16.5%) | (+11.3%, +12.0%) |
|  | Primary Grandparent Caregiver Loss | 0.31 | 0.29 | -5.3% | 0.30 | 0.31 | +7.9% | +2.2% |
|  |  | (0.29, 0.33) | (0.28, 0.31) | (-6.2%, -4.4%) | (0.28, 0.31) | (0.30, 0.33) | (+7.6%, +8.1%) | (+1.1%, +3.2%) |
|  | Secondary Grandparent Caregiver Loss | 0.39 | 0.43 | +11.1% | 0.45 | 0.49 | +14.2% | +26.9% |
|  |  | (0.36, 0.42) | (0.41, 0.46) | (+9.7%, +12.6%) | (0.43, 0.48) | (0.47, 0.52) | (+14.0%, +14.4%) | (+25.1%, +28.7%) |

# Table2: Trends in All-cause Orphanhood and Grandparent Caregiver (Primary and Secondary) Loss from 2000 to 2021, before and during the COVID-19 pandemic