Family Ruptures, Stress, and the Mental Health of the Next Generation: Reply
ONLINE APPENDIX

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Table A1: Effects of Relative Death *In Utero* on Birth Outcomes: Control Group Width 300 days

	(1) Birwt	(2) LBW	(3) VLBW	(4) HBW	(5) Pret.
Panel A: All Relative Deaths					
Death During Pregnancy	-1.501	0.00128*	0.000393	-0.00173	0.00170*
	[2.320]	[0.000663]	[0.000295]	[0.00152]	[0.000895]
Mean, dept. var	3540.6	0.0336	0.00561	0.186	0.0521
Obs.	259303	259303	259303	259303	259994
Panel B: Close Relative Deaths					
Death During Pregnancy	1.858	0.000388	-0.000339	-0.000833	0.0000512
	[3.702]	[0.00141]	[0.000558]	[0.00261]	[0.00153]
Mean, dept. var	3516.4	0.0391	0.00663	0.177	0.0541
Obs.	75618	75618	75618	75618	75831
Panel C: Maternal Parent/Sibling Deaths					
Death During Pregnancy	0.516	0.00129	0.000255	-0.000656	0.000562
	[3.891]	[0.00146]	[0.000548]	[0.00269]	[0.00158]
Mean, dept. var	3519.4	0.0382	0.00631	0.178	0.0532
Obs.	72476	72476	72476	72476	72677

The sample includes all children whose mother loses a family member—a sibling, a parent, a grandparent, the child's father, or an own (older) child—within 580 (280+300) days of the child's estimated date of conception. To assign exposure to treatment, we first calculate each child's estimated date of conception, c, by subtracting the number of gestation days from the date of birth. We then define the set of treated individuals as those experiencing the death of a relative in the time interval $[c, c + 280]$. Each column in each panel is a separate regression. Panel A uses the entire sample of analysis. In Panel B, we drop children of mothers who experience the death of a grandparent. In Panel C, we only include children of mothers who experience the death of a parent or a sibling. All regressions include controls for the mother's age at conception (five categories: < 20, $20 - 24$, $25 - 34$, > 35), maternal education in the year prior to conception (four categories: <HS, HS diploma, some college, college+), indicator variables for the mother being born outside of Sweden and being married in the year prior to conception year, dummies for parity (three categories: 1, 2, 3+), and the relative's age at death and age squared. Additionally, all regressions control for fixed effects for the year and month of conception, as well as the mother's municipality of residence during the year prior to conception. Robust standard errors are clustered on the mother's municipality of residence in the year prior to conception. Significance levels: * p<0.1 ** p<0.05 *** p<0.01

Table A2: Effects of Relative Death *In Utero* on Hospitalizations by Age 1: Control Group Width 300 days

	(1) Any Hosp	(2) Tot Hosp	(3) Any Hosp-Peri.	(4) Tot Hosp-Peri.
Panel A: All Relative Deaths				
Death During Pregnancy	0.000327	-0.000839	0.00160*	0.000502
	[0.000964]	[0.00193]	[0.000917]	[0.00112]
Mean, dept. var	0.0747	0.103	0.0587	0.0661
Obs.	259547	259547	208577	208577
Panel B: Close Relative Deaths				
Death During Pregnancy	-0.000369	-0.00252	0.00134	0.000381
	[0.00183]	[0.00321]	[0.00203]	[0.00266]
Mean, dept. var	0.0669	0.0928	0.0611	0.0697
Obs.	75702	75702	41756	41756
Panel C: Maternal Parent/Sibling Deaths				
Death During Pregnancy	-0.0000873	-0.00227	0.00139	0.000490
	[0.00190]	[0.00323]	[0.00207]	[0.00274]
Mean, dept. var	0.0669	0.0922	0.0611	0.0696
Obs.	72548	72548	40130	40130

See table A1 for more information on the sample and controls. "Any Hosp-Peri." refers to an indicator for ever being hospitalized for a condition originating in the perinatal period. "Tot Hosp-Peri." refers to the total number of hospitalizations for conditions originating in the perinatal period. The sample in columns (3) and (4) is limited to cohorts born in 1987 or later (as the definition of perinatal conditions is not comparable with earlier years). Robust standard errors are clustered on the mother's municipality of residence in the year prior to conception. Significance levels: * $p<0.1$ ** $p<0.05$ *** $p<0.01$

Table A3: Effects of Relative Death *In Utero* on Prescription Use for Mental Health Conditions at Ages 9-11 and 34-36: Control Group Width 300 days

	ADHD,9-11		Anx,34-36		Dep,34-36	
	(1)	(2)	(3)	(4)	(5)	(6)
	Any RX	Avg. dose	Any RX	Avg. dose	Any RX	Avg. dose
Panel A: All Relative Deaths						
Death During Pregnancy	0.000737	0.0301	0.00504	0.0243	0.00629	0.435*
	[0.000967]	[0.0349]	[0.00331]	[0.0215]	[0.00393]	[0.248]
Mean, dept. var	0.0230	0.673	0.0687	0.215	0.113	4.659
Obs.	103185	103185	24557	24557	24557	24557
Panel B: Close Relative Deaths						
Death During Pregnancy	0.00620***	0.161**	0.00691*	0.0317	0.00841*	0.479*
	[0.00210]	[0.0803]	[0.00386]	[0.0243]	[0.00454]	[0.264]
Mean, dept. var	0.0246	0.726	0.0679	0.206	0.112	4.572
Obs.	18262	18262	20318	20318	20318	20318
Panel C: Maternal Parent/Sibling Deaths						
Death During Pregnancy	0.00633***	0.157*	0.00823**	0.0423*	0.00998**	0.547**
	[0.00214]	[0.0841]	[0.00395]	[0.0256]	[0.00459]	[0.275]
Mean, dept. var	0.0241	0.715	0.0673	0.204	0.111	4.569
Obs.	17582	17582	19330	19330	19330	19330

See table A1 for more information on the sample and controls. Robust standard errors are clustered on the mother's municipality of residence in the year prior to conception. Exact definitions of the prescription drug categories are given in Persson and Rossin-Slater (Forthcoming) Online Appendix E. Significance levels: * p<0.1 ** p<0.05 *** p<0.01

Table A4: Effects of Relative Death *In Utero* on Physical and Mental Health Indices: Control Group Width 300 days

	Physical Health Index			Mental Health Index		
	(1) All	(2) Close	(3) Mom Par/Sib	(4) All	(5) Close	(6) Mom Par/Sib
Death During Pregnancy	-0.00175 [0.00184]	0.000603 [0.00310]	-0.000687 [0.00317]	0.000950 [0.00194]	-0.00767** [0.00382]	-0.00940** [0.00382]
Mean, dept. var	-0.00585	-0.0162	-0.0142	-0.00125	0.00233	0.00398
Obs.	259994	75831	72677	251747	74621	71505

See table A1 for more information on the sample and controls. The physical health index consists of the 28 outcomes analyzed in Tables 2, 3, A3, A5, A9, and A10 in Persson and Rossin-Slater (Forthcoming): continuous birth weight, low-birth-weight indicator, very-low-birth-weight indicator, high-birth-weight indicator, pre-term indicator, stillbirth indicator, perinatal death indicator, SGA indicator, LGA indicator, birth length, head circumference, c-section indicator, induced labor indicator, any hospitalizations by age 1, total hospitalizations by age 1, any hospitalizations for perinatal causes by age 1, total hospitalizations for perinatal causes by age 1, 7 indicators for ever purchasing a physical health prescription at any of the age categories we consider (4-6, 9-11, 14-16, 19-21, 24-26, 29-31, 34-36), and indicators for any hospitalizations by ages 5, 10, 18, and 27. The mental health index consists of 7 indicators for ever purchasing a mental health drug at any of the main age categories we consider in Figure 2 in Persson and Rossin-Slater (Forthcoming) (4-6, 9-11, 14-16, 19-21, 24-26, 29-31, 34-36), as well as $2 \times 3 \times 7 = 42$ other outcomes comprised of our two measures—an indicator for ever purchasing the drug and the average daily dose—per condition (ADHD, anxiety, depression) and per age group (4-6, 9-11, 14-16, 19-21, 24-26, 29-31, 34-36). See text in Section IV of Persson and Rossin-Slater (Forthcoming) for more information on how the indices are constructed. Robust standard errors are clustered on the mother's municipality of residence in the year prior to conception. Significance levels: * $p<0.1$ ** $p<0.05$ *** $p<0.01$

Table A5: Effects of Relative Death *In Utero* on Birth Outcomes: Control Group Width 280 days

	(1) Birwt	(2) LBW	(3) VLBW	(4) HBW	(5) Pret.
Panel A: All Relative Deaths					
Death During Pregnancy	-1.079	0.00122*	0.000174	-0.00175	0.00194**
	[2.327]	[0.000686]	[0.000308]	[0.00153]	[0.000884]
Mean, dept. var	3540.4	0.0336	0.00573	0.186	0.0520
Obs.	250317	250317	250317	250317	250985
Panel B: Close Relative Deaths					
Death During Pregnancy	1.924	0.000369	-0.000541	-0.00139	0.000221
	[3.826]	[0.00139]	[0.000586]	[0.00265]	[0.00158]
Mean, dept. var	3516.3	0.0391	0.00673	0.177	0.0540
Obs.	72838	72838	72838	72838	73046
Panel C: Maternal Parent/Sibling Deaths					
Death During Pregnancy	0.402	0.00137	0.0000845	-0.00132	0.000838
	[4.028]	[0.00144]	[0.000569]	[0.00274]	[0.00163]
Mean, dept. var	3519.3	0.0382	0.00640	0.178	0.0532
Obs.	69827	69827	69827	69827	70024

The sample includes all children whose mother loses a family member—a sibling, a parent, a grandparent, the child's father, or an own (older) child—within 560 (280+280) days of the child's estimated date of conception. To assign exposure to treatment, we first calculate each child's estimated date of conception, c, by subtracting the number of gestation days from the date of birth. We then define the set of treated individuals as those experiencing the death of a relative in the time interval $[c, c + 280]$. Each column in each panel is a separate regression. Panel A uses the entire sample of analysis. In Panel B, we drop children of mothers who experience the death of a grandparent. In Panel C, we only include children of mothers who experience the death of a parent or a sibling. All regressions include controls for the mother's age at conception (five categories: < 20, $20 - 24$, $25 - 34$, > 35), maternal education in the year prior to conception (four categories: <HS, HS diploma, some college, college+), indicator variables for the mother being born outside of Sweden and being married in the year prior to conception year, dummies for parity (three categories: 1, 2, 3+), and the relative's age at death and age squared. Additionally, all regressions control for fixed effects for the year and month of conception, as well as the mother's municipality of residence during the year prior to conception. Robust standard errors are clustered on the mother's municipality of residence in the year prior to conception. Significance levels: * p<0.1 ** p<0.05 *** p<0.01

Table A6: Effects of Relative Death *In Utero* on Hospitalizations by Age 1: Control Group Width 280 days

	(1) Any Hosp	(2) Tot Hosp	(3) Any Hosp-Peri.	(4) Tot Hosp-Peri.
Panel A: All Relative Deaths				
Death During Pregnancy	0.000530	-0.000753	0.00198**	0.000847
	[0.00102]	[0.00201]	[0.000970]	[0.00117]
Mean, dept. var	0.0746	0.103	0.0586	0.0659
Obs.	250550	250550	201382	201382
Panel B: Close Relative Deaths				
Death During Pregnancy	-0.000472	-0.00290	0.00136	-0.0000950
	[0.00187]	[0.00329]	[0.00204]	[0.00271]
Mean, dept. var	0.0670	0.0930	0.0611	0.0700
Obs.	72925	72925	40202	40202
Panel C: Maternal Parent/Sibling Deaths				
Death During Pregnancy	-0.000108	-0.00245	0.00139	0.00000558
	[0.00194]	[0.00333]	[0.00208]	[0.00279]
Mean, dept. var	0.0668	0.0922	0.0611	0.0699
Obs.	69903	69903	38641	38641

See table A5 for more information on the sample and controls. "Any Hosp-Peri." refers to an indicator for ever being hospitalized for a condition originating in the perinatal period. "Tot Hosp-Peri." refers to the total number of hospitalizations for conditions originating in the perinatal period. The sample in columns (3) and (4) is limited to cohorts born in 1987 or later (as the definition of perinatal conditions is not comparable with earlier years). Robust standard errors are clustered on the mother's municipality of residence in the year prior to conception. Significance levels: * p<0.1 ** p<0.05 *** p<0.01

Table A7: Effects of Relative Death *In Utero* on Prescription Use for Mental Health Conditions at Ages 9-11 and 34-36: Control Group Width 280 days

	ADHD,9-11		Anx,34-36		Dep,34-36	
	(1) Any RX	(2) Avg. dose	(3) Any RX	(4) Avg. dose	(5) Any RX	(6) Avg. dose
Panel A: All Relative Deaths						
Death During Pregnancy	0.000886	0.0398	0.00474	0.0238	0.00777*	0.554**
	[0.00102]	[0.0374]	[0.00322]	[0.0213]	[0.00398]	[0.256]
Mean, dept. var	0.0229	0.668	0.0689	0.215	0.113	4.603
Obs.	99551	99551	23678	23678	23678	23678
Panel B: Close Relative Deaths						
Death During Pregnancy	0.00626***	0.159*	0.00620	0.0298	0.00948**	0.584**
	[0.00219]	[0.0841]	[0.00382]	[0.0243]	[0.00463]	[0.271]
Mean, dept. var	0.0248	0.730	0.0683	0.206	0.111	4.525
Obs.	17588	17588	19584	19584	19584	19584
Panel C: Maternal Parent/Sibling Deaths						
Death During Pregnancy	0.00633***	0.155*	0.00758*	0.0403	0.0106**	0.648**
	[0.00225]	[0.0887]	[0.00389]	[0.0255]	[0.00471]	[0.280]
Mean, dept. var	0.0243	0.719	0.0677	0.205	0.111	4.527
Obs.	16935	16935	18637	18637	18637	18637

See table A5 for more information on the sample and controls. Robust standard errors are clustered on the mother's municipality of residence in the year prior to conception. Exact definitions of the prescription drug categories are given in Persson and Rossin-Slater (Forthcoming) Online Appendix E. Significance levels: * p<0.1 ** p<0.05 *** p<0.01

Table A8: Effects of Relative Death *In Utero* on Physical and Mental Health Indices: Control Group Width 280 days

	Physical Health Index			Mental Health Index		
	(1) All	(2) Close	(3) Mom Par/Sib	(4) All	(5) Close	(6) Mom Par/Sib
Death During Pregnancy	-0.00155	0.000591	-0.000947	0.000577	-0.00800**	-0.00967**
	[0.00190]	[0.00323]	[0.00330]	[0.00204]	[0.00401]	[0.00399]
Mean, dept. var	-0.00598	-0.0162	-0.0141	-0.00118	0.00212	0.00371
Obs.	250985	73046	70024	242818	71852	68868

See table A5 for more information on the sample and controls. The physical health index consists of the 28 outcomes analyzed in Tables 2, 3, A3, A5, A9, and A10 in Persson and Rossin-Slater (Forthcoming): continuous birth weight, low-birth-weight indicator, very-low-birth-weight indicator, high-birth-weight indicator, pre-term indicator, stillbirth indicator, perinatal death indicator, SGA indicator, LGA indicator, birth length, head circumference, c-section indicator, induced labor indicator, any hospitalizations by age 1, total hospitalizations by age 1, any hospitalizations for perinatal causes by age 1, total hospitalizations for perinatal causes by age 1, 7 indicators for ever purchasing a physical health prescription at any of the age categories we consider (4-6, 9-11, 14-16, 19-21, 24-26, 29-31, 34-36), and indicators for any hospitalizations by ages 5, 10, 18, and 27. The mental health index consists of 7 indicators for ever purchasing a mental health drug at any of the main age categories we consider in Figure 2 in Persson and Rossin-Slater (Forthcoming) (4-6, 9-11, 14-16, 19-21, 24-26, 29-31, 34-36), as well as $2 \times 3 \times 7 = 42$ other outcomes comprised of our two measures—an indicator for ever purchasing the drug and the average daily dose—per condition (ADHD, anxiety, depression) and per age group (4-6, 9-11, 14-16, 19-21, 24-26, 29-31, 34-36). See text in Section IV of Persson and Rossin-Slater (Forthcoming) for more information on how the indices are constructed. Robust standard errors are clustered on the mother's municipality of residence in the year prior to conception. Significance levels: * $p<0.1$ ** $p<0.05$ *** $p<0.01$