## **Supplementary Online Content**

Jensen EA, DeMauro SB, Kornhauser M, Aghai ZH, Greenspan JS, Dysart KC. Effects of multiple ventilation courses and duration of mechanical ventilation on respiratory outcomes in extremely low-birth-weight infants. *JAMA Pediatr*. Published online September 28, 2015. doi:10.1001/jamapediatrics.2015.2401.

**eTable.** Characteristics of All Infants Based on the Cumulative Duration of Mechanical Ventilation and the Number of Mechanical Ventilation Courses

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**eTable.** Characteristics of All Infants Based on the Cumulative Duration of Mechanical Ventilation and the Number of Mechanical Ventilation Courses

Characteristic	<b>≤ 7 days</b> No.=936	<b>8-21 days</b> No.=678	<b>22-35 days</b> No.=442	≥ <b>36 days</b> No.=1287
Demographics	110.=930	110.=070	110.=442	140.=1207
Gestational age, median	27 (25.9-28.3)	26.3 (25.3-	25.7 (24.9-	25 (24.1-26)
(IQR), weeks	21 (23.9-20.3)	27.4)	26.7)	23 (24.1-20)
Birth weight, median (IQR),	848 (720-930)	800 (680-890)	771 (665-880)	690 (600-790)
g	040 (720 330)	000 (000 030)	771 (003 000)	030 (000 730)
Male, No. (%)	421 (45.0)	342 (50.4)	226 (51.1)	689 (53.5)
SGA, No. (%)	323 (34.5)	171 (25.2)	102 (23.1)	335 (26.0)
5 minute Apgar score,	8 (6-8)	7 (6-8)	7 (6-8)	7 (6-8)
median (IQR)	3 (3 3)	. (0 0)	. (0 0)	. (0 0)
Treatments/Morbidities				
Surfactant, No. (%)	665 (71.1)	491 (72.4)	339 (76.6)	1011 (78.6)
PDA Treatment, No. (%)	339 (36.2)	349 (51.5)	277 (62.7)	885 (68.8)
NEC, No. (%)	36 (3.9)	60 (8.9)	30 (6.8)	175 (13.6)
Bacterial sepsis, No. (%)	184 (19.7)	240 (35.4)	193 (43.7)	773 (60.1)
Postnatal dexamethasone	42 (4.5)	86 (12.7)	81 (18.3)	577 (44.8)
treatment, No. (%)	,		, ,	,
Mechanical ventilation	3 (2-5)	14 (10-18)	29 (25-32)	59 (46-82)
duration, median (IQR), d	, ,	,	,	,
Mechanical ventilation	1 (1)	2 (1-3)	3 (2-4)	4 (3-6)
courses, median (IQR)	, ,		, ,	, ,
	1 course	2 courses	3 courses	≥ 4 courses
Characteristic	<b>1 course</b> No.=1083	<b>2 courses</b> No.=729	3 courses No.=573	≥ 4 courses No.=958
Characteristic Demographics	No.=1083	No.=729	No.=573	No.=958
Characteristic Demographics Gestational age, median			No.=573 25.7 (24.7-	
Characteristic  Demographics  Gestational age, median (IQR), weeks	No.=1083 26.7 (25.4-28)	No.=729 26 (25-27)	No.=573 25.7 (24.7- 26.9)	No.=958 25 (24.1-26.1)
Characteristic Demographics Gestational age, median	No.=1083	No.=729	No.=573 25.7 (24.7-	No.=958
Characteristic  Demographics Gestational age, median (IQR), weeks Birth weight, median (IQR), g	No.=1083 26.7 (25.4-28) 824 (700-920)	No.=729 26 (25-27) 800 (670-887)	No.=573 25.7 (24.7- 26.9) 745 (645-860)	No.=958 25 (24.1-26.1) 690 (600-801)
Characteristic  Demographics  Gestational age, median (IQR), weeks  Birth weight, median (IQR), g  Male, No. (%)	No.=1083  26.7 (25.4-28)  824 (700-920)  486 (44.9)	No.=729 26 (25-27) 800 (670-887) 367 (50.3)	No.=573  25.7 (24.7- 26.9)  745 (645-860)  293 (51.1)	No.=958  25 (24.1-26.1)  690 (600-801)  532 (55.5)
Characteristic  Demographics  Gestational age, median (IQR), weeks  Birth weight, median (IQR), g  Male, No. (%)  SGA, No. (%)	No.=1083  26.7 (25.4-28)  824 (700-920)  486 (44.9) 359 (33.2)	No.=729 26 (25-27) 800 (670-887) 367 (50.3) 174 (23.9)	No.=573  25.7 (24.7- 26.9)  745 (645-860)  293 (51.1)  132 (23.0)	No.=958  25 (24.1-26.1)  690 (600-801)  532 (55.5) 266 (27.8)
Characteristic  Demographics  Gestational age, median (IQR), weeks  Birth weight, median (IQR), g  Male, No. (%)  SGA, No. (%)  5 minute Apgar score,	No.=1083  26.7 (25.4-28)  824 (700-920)  486 (44.9)	No.=729 26 (25-27) 800 (670-887) 367 (50.3)	No.=573  25.7 (24.7- 26.9)  745 (645-860)  293 (51.1)	No.=958  25 (24.1-26.1)  690 (600-801)  532 (55.5)
Characteristic  Demographics  Gestational age, median (IQR), weeks  Birth weight, median (IQR), g  Male, No. (%)  SGA, No. (%)  5 minute Apgar score, median (IQR)	No.=1083  26.7 (25.4-28)  824 (700-920)  486 (44.9) 359 (33.2)	No.=729 26 (25-27) 800 (670-887) 367 (50.3) 174 (23.9)	No.=573  25.7 (24.7- 26.9)  745 (645-860)  293 (51.1)  132 (23.0)	No.=958  25 (24.1-26.1)  690 (600-801)  532 (55.5) 266 (27.8)
Characteristic  Demographics  Gestational age, median (IQR), weeks  Birth weight, median (IQR), g  Male, No. (%)  SGA, No. (%)  5 minute Apgar score, median (IQR)  Treatments/Morbidities	No.=1083  26.7 (25.4-28)  824 (700-920)  486 (44.9)  359 (33.2)  8 (6-8)	No.=729  26 (25-27)  800 (670-887)  367 (50.3)  174 (23.9)  7 (6-8)	No.=573  25.7 (24.7- 26.9)  745 (645-860)  293 (51.1)  132 (23.0)  7 (6-8)	No.=958  25 (24.1-26.1)  690 (600-801)  532 (55.5)  266 (27.8)  7 (6-8)
Characteristic  Demographics Gestational age, median (IQR), weeks Birth weight, median (IQR), g Male, No. (%) SGA, No. (%) 5 minute Apgar score, median (IQR) Treatments/Morbidities Surfactant, No. (%)	No.=1083  26.7 (25.4-28)  824 (700-920)  486 (44.9)  359 (33.2)  8 (6-8)	No.=729  26 (25-27)  800 (670-887)  367 (50.3)  174 (23.9)  7 (6-8)  542 (74.4)	No.=573  25.7 (24.7- 26.9)  745 (645-860)  293 (51.1)  132 (23.0)  7 (6-8)  460 (80.3)	No.=958  25 (24.1-26.1)  690 (600-801)  532 (55.5)  266 (27.8)  7 (6-8)
Characteristic  Demographics Gestational age, median (IQR), weeks Birth weight, median (IQR), g Male, No. (%) SGA, No. (%) 5 minute Apgar score, median (IQR) Treatments/Morbidities Surfactant, No. (%) PDA Treatment, No. (%)	No.=1083  26.7 (25.4-28)  824 (700-920)  486 (44.9)  359 (33.2)  8 (6-8)  747 (69)  443 (40.9)	No.=729  26 (25-27)  800 (670-887)  367 (50.3)  174 (23.9)  7 (6-8)  542 (74.4)  391 (53.6)	No.=573  25.7 (24.7- 26.9)  745 (645-860)  293 (51.1)  132 (23.0)  7 (6-8)  460 (80.3)  357 (62.3)	No.=958  25 (24.1-26.1)  690 (600-801)  532 (55.5)  266 (27.8)  7 (6-8)  757 (79.0)  659 (68.8)
Characteristic  Demographics Gestational age, median (IQR), weeks Birth weight, median (IQR), g Male, No. (%) SGA, No. (%) 5 minute Apgar score, median (IQR) Treatments/Morbidities Surfactant, No. (%) PDA Treatment, No. (%) NEC, No. (%)	No.=1083  26.7 (25.4-28)  824 (700-920)  486 (44.9)  359 (33.2)  8 (6-8)  747 (69)  443 (40.9)  36 (3.3)	No.=729  26 (25-27)  800 (670-887)  367 (50.3)  174 (23.9)  7 (6-8)  542 (74.4)  391 (53.6)  61 (8.4)	No.=573  25.7 (24.7- 26.9)  745 (645-860)  293 (51.1)  132 (23.0)  7 (6-8)  460 (80.3)  357 (62.3)  50 (8.7)	No.=958  25 (24.1-26.1)  690 (600-801)  532 (55.5)  266 (27.8)  7 (6-8)  757 (79.0)  659 (68.8)  154 (16.1)
Characteristic  Demographics  Gestational age, median (IQR), weeks  Birth weight, median (IQR), g  Male, No. (%)  SGA, No. (%)  5 minute Apgar score, median (IQR)  Treatments/Morbidities  Surfactant, No. (%)  PDA Treatment, No. (%)  NEC, No. (%)  Bacterial sepsis, No. (%)	No.=1083  26.7 (25.4-28)  824 (700-920)  486 (44.9)  359 (33.2)  8 (6-8)  747 (69)  443 (40.9)  36 (3.3)  238 (22.0)	No.=729  26 (25-27)  800 (670-887)  367 (50.3)  174 (23.9)  7 (6-8)  542 (74.4)  391 (53.6)  61 (8.4)  277 (38.0)	No.=573  25.7 (24.7-26.9)  745 (645-860)  293 (51.1)  132 (23.0)  7 (6-8)  460 (80.3)  357 (62.3)  50 (8.7)  272 (47.5)	No.=958  25 (24.1-26.1)  690 (600-801)  532 (55.5) 266 (27.8) 7 (6-8)  757 (79.0) 659 (68.8) 154 (16.1) 603 (62.9)
Characteristic  Demographics  Gestational age, median (IQR), weeks  Birth weight, median (IQR), g  Male, No. (%)  SGA, No. (%)  5 minute Apgar score, median (IQR)  Treatments/Morbidities  Surfactant, No. (%)  PDA Treatment, No. (%)  NEC, No. (%)  Bacterial sepsis, No. (%)  Postnatal dexamethasone	No.=1083  26.7 (25.4-28)  824 (700-920)  486 (44.9)  359 (33.2)  8 (6-8)  747 (69)  443 (40.9)  36 (3.3)	No.=729  26 (25-27)  800 (670-887)  367 (50.3)  174 (23.9)  7 (6-8)  542 (74.4)  391 (53.6)  61 (8.4)	No.=573  25.7 (24.7- 26.9)  745 (645-860)  293 (51.1)  132 (23.0)  7 (6-8)  460 (80.3)  357 (62.3)  50 (8.7)	No.=958  25 (24.1-26.1)  690 (600-801)  532 (55.5)  266 (27.8)  7 (6-8)  757 (79.0)  659 (68.8)  154 (16.1)
Characteristic  Demographics  Gestational age, median (IQR), weeks  Birth weight, median (IQR), g  Male, No. (%)  SGA, No. (%)  5 minute Apgar score, median (IQR)  Treatments/Morbidities  Surfactant, No. (%)  PDA Treatment, No. (%)  NEC, No. (%)  Bacterial sepsis, No. (%)  Postnatal dexamethasone treatment, No. (%)	No.=1083  26.7 (25.4-28)  824 (700-920)  486 (44.9)  359 (33.2)  8 (6-8)  747 (69)  443 (40.9)  36 (3.3)  238 (22.0)  80 (7.4)	No.=729  26 (25-27)  800 (670-887)  367 (50.3)  174 (23.9)  7 (6-8)  542 (74.4)  391 (53.6)  61 (8.4)  277 (38.0)  127 (17.4)	No.=573  25.7 (24.7-26.9)  745 (645-860)  293 (51.1)  132 (23.0)  7 (6-8)  460 (80.3)  357 (62.3)  50 (8.7)  272 (47.5)  150 (26.2)	No.=958  25 (24.1-26.1)  690 (600-801)  532 (55.5) 266 (27.8) 7 (6-8)  757 (79.0) 659 (68.8) 154 (16.1) 603 (62.9) 429 (44.8)
Characteristic  Demographics Gestational age, median (IQR), weeks Birth weight, median (IQR), g Male, No. (%) SGA, No. (%) 5 minute Apgar score, median (IQR) Treatments/Morbidities Surfactant, No. (%) PDA Treatment, No. (%) NEC, No. (%) Bacterial sepsis, No. (%) Postnatal dexamethasone treatment, No. (%) Mechanical ventilation	No.=1083  26.7 (25.4-28)  824 (700-920)  486 (44.9)  359 (33.2)  8 (6-8)  747 (69)  443 (40.9)  36 (3.3)  238 (22.0)	No.=729  26 (25-27)  800 (670-887)  367 (50.3)  174 (23.9)  7 (6-8)  542 (74.4)  391 (53.6)  61 (8.4)  277 (38.0)	No.=573  25.7 (24.7-26.9)  745 (645-860)  293 (51.1)  132 (23.0)  7 (6-8)  460 (80.3)  357 (62.3)  50 (8.7)  272 (47.5)	No.=958  25 (24.1-26.1)  690 (600-801)  532 (55.5) 266 (27.8) 7 (6-8)  757 (79.0) 659 (68.8) 154 (16.1) 603 (62.9)
Characteristic  Demographics  Gestational age, median (IQR), weeks  Birth weight, median (IQR), g  Male, No. (%)  SGA, No. (%)  5 minute Apgar score, median (IQR)  Treatments/Morbidities  Surfactant, No. (%)  PDA Treatment, No. (%)  NEC, No. (%)  Bacterial sepsis, No. (%)  Postnatal dexamethasone treatment, No. (%)  Mechanical ventilation duration, median (IQR), d	No.=1083  26.7 (25.4-28)  824 (700-920)  486 (44.9)  359 (33.2)  8 (6-8)  747 (69)  443 (40.9)  36 (3.3)  238 (22.0)  80 (7.4)  4 (2-11)	No.=729  26 (25-27)  800 (670-887)  367 (50.3)  174 (23.9)  7 (6-8)  542 (74.4)  391 (53.6)  61 (8.4)  277 (38.0)  127 (17.4)  17 (8-35)	No.=573  25.7 (24.7-26.9)  745 (645-860)  293 (51.1)  132 (23.0)  7 (6-8)  460 (80.3)  357 (62.3)  50 (8.7)  272 (47.5)  150 (26.2)  32 (17-53)	No.=958  25 (24.1-26.1)  690 (600-801)  532 (55.5)  266 (27.8)  7 (6-8)  757 (79.0)  659 (68.8)  154 (16.1)  603 (62.9)  429 (44.8)  59 (39-88)
Characteristic  Demographics Gestational age, median (IQR), weeks Birth weight, median (IQR), g Male, No. (%) SGA, No. (%) 5 minute Apgar score, median (IQR) Treatments/Morbidities Surfactant, No. (%) PDA Treatment, No. (%) NEC, No. (%) Bacterial sepsis, No. (%) Postnatal dexamethasone treatment, No. (%) Mechanical ventilation	No.=1083  26.7 (25.4-28)  824 (700-920)  486 (44.9)  359 (33.2)  8 (6-8)  747 (69)  443 (40.9)  36 (3.3)  238 (22.0)  80 (7.4)	No.=729  26 (25-27)  800 (670-887)  367 (50.3)  174 (23.9)  7 (6-8)  542 (74.4)  391 (53.6)  61 (8.4)  277 (38.0)  127 (17.4)	No.=573  25.7 (24.7-26.9)  745 (645-860)  293 (51.1)  132 (23.0)  7 (6-8)  460 (80.3)  357 (62.3)  50 (8.7)  272 (47.5)  150 (26.2)	No.=958  25 (24.1-26.1)  690 (600-801)  532 (55.5) 266 (27.8) 7 (6-8)  757 (79.0) 659 (68.8) 154 (16.1) 603 (62.9) 429 (44.8)

BPD, bronchopulmonary dysplasia, IQR, inter-quartile range; NEC, necrotizing enterocolitis; PDA, patent ductus arteriosus; SGA, small for gestational age.

Differences between ventilation courses and ventilation duration categories for all patient characteristics are statistically significant with a p<0.001.

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