

Comparison of Neonatal Training Program Directors to Clinical Neonatologists

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BACKGROUND

- Although neonatal training program directors are key to fostering the next generation of neonatologists who will care for premature or ill newborns, we lack a comprehensive current description of their actual professional responsibilities.
- Such a description is critical to ensure that expectations are transparent in the course of recruiting future training directors.

OBJECTIVE

- To compare the professional work profiles of neonatal training program directors compared to neonatologists who self-identify their primary care path as 'clinical neonatologist'.

METHODS

- The AAP conducted a voluntary anonymous survey of all board-eligible and board-certified United States neonatologists from July through November 2021.
- 2113, or 30%, of surveyed individuals responded.
- The survey included questions about professional duties, social factors, and compensation.
- We analyzed the subset of respondents who were board-eligible or board-certified, held a full-time position, and self-identified as either a training director or as a clinical neonatologist (defined in the survey as a neonatologist focused on providing clinical care to patients, with or without supervision of students, residents or others).
- Statistical analyses, including t-test of means, Wilcoxon test of medians, and chi-square analysis of proportions, as appropriate, were performed using JMP 16.1.0 by SAS (Cary, NC).

We sought to achieve a more comprehensive understanding of the duties of Neonatology Training Program Directors. Compared to Clinical Neonatologists, Training Directors reported:

- Having less clinical time (1224 vs 1680 hours per year, p<0.001)
- Providing care to more critically ill infants (10 vs 5 for daily rounding census, p<0.001)
- Working more frequently in a Level 4 NICU (66% vs 28%, p<0.001)
- Engaging more often in research activities (72% vs 29%, p<0.001)
- Authoring more publications (6 vs 2 principal authorships, p<0.001)
- Holding a higher academic rank (p<0.001)
- Spending more time in administrative duties (11 vs 5.6 weeks, p<0.001)

Training directors have time for program duties, higher rank and patient acuity, but receive compensation that does not differ. A more granular understanding of the professional productivity of training directors will better inform institutional strategic planning and the development of clearer professional expectations.

Table 1: Respondent Characteristics

	All	Clinical Neonatologist	Training Director	p-value
Sample Size	n = 666	578 (87%)	88 (13%)	
On Academic Track (Yes)*	397 (60%)	317 (55%)	80 (91%)	<0.001
Gender Identity**				NS
Male	258 (40%)	227 (40%)	31 (37%)	
Female	383 (59%)	331 (58%)	52 (62%)	
Decline	12 (2%)	11 (2%)	1 (1%)	
Ethnic and Racial Identity*				NS
Hispanic/Latinx	52 (8%)	47 (8%)	5 (6%)	
Asian	120 (18%)	108 (19%)	12 (14%)	
Native Hawaiian/Pacific Islander	2 (0%)	2 (0%)	0 (0%)	
Black/African American	24 (4%)	22 (4%)	2 (2%)	
Middle Eastern/North African	14 (2%)	12 (2%)	2 (2%)	
American Indian/Alaska Native	3 (0%)	2 (0%)	1 (1%)	
White	443 (68%)	381 (67%)	62 (74%)	
Other	22 (3%)	19 (3%)	3 (4%)	
Declined	33 (5%)	29 (5%)	4 (5%)	
Sexual Identity**				NS
Lesbian or gay	15 (2%)	13 (2%)	2 (2%)	
Straight, that is, not lesbian or gay	592 (91%)	516 (91%)	76 (90%)	
Bisexual	6 (1%)	5 (1%)	1 (1%)	
Something else	1 (0%)	1 (0%)	0 (0%)	
I don't know	0 (0%)	0 (0%)	0 (0%)	
Decline to respond	35 (5%)	30 (5%)	5 (6%)	
Age**				NS
31-35	35 (5%)	32 (6%)	3 (4%)	
36-40	97 (15%)	88 (16%)	9 (11%)	
41-45	105 (16%)	91 (16%)	14 (17%)	
46-50	98 (15%)	77 (14%)	21 (25%)	
51-55	80 (13%)	68 (12%)	12 (14%)	
56-60	80 (13%)	74 (13%)	6 (7%)	
61-65	69 (11%)	59 (11%)	10 (12%)	
66-70	50 (8%)	46 (8%)	4 (5%)	
71 years or older	26 (4%)	22 (4%)	4 (5%)	
Medical School**				NS
United States	491 (75%)	421 (74%)	70 (83%)	
Canada	2 (0%)	2 (0%)	0 (0%)	
Caribbean	23 (4%)	18 (3%)	5 (6%)	
Other	135 (21%)	126 (22%)	9 (11%)	
AAP Membership**				NS
AAP only	72 (11%)	67 (12%)	5 (6%)	
Both AAP and SONPM	507 (76%)	433 (75%)	74 (85%)	
Neither the AAP nor SONPM	86 (13%)	78 (13%)	8 (9%)	
AAP District Location**				NS
District I (CT, ME, MA, NH, RI, VT)	29 (5%)	23 (4%)	6 (7%)	
District II (NY)	38 (6%)	31 (6%)	7 (9%)	
District III (DE, DC, MD, NJ, PA, WV)	70 (11%)	58 (10%)	12 (15%)	
District IV (KY, NC, SC, TN, VA)	66 (10%)	56 (10%)	10 (12%)	
District V (IN, MI, OH)	62 (10%)	55 (10%)	7 (9%)	
District VI (IL, IA, KA, MN, MO, NE, ND, SD, WI)	49 (8%)	40 (7%)	9 (11%)	
District VII (AR, LA, MS, OK, TX)	97 (15%)	85 (15%)	12 (15%)	
District VIII (AK, AZ, CO, HI, ID, MN, NV, NM, OR, UT, WA, WY)	95 (15%)	88 (16%)	7 (9%)	
District IX (CA)	70 (11%)	64 (11%)	6 (7%)	
District X (AL, FL, GA, PR)	64 (10%)	59 (11%)	5 (6%)	

We used *t-tests to compare means of normally distributed data and **chi-square analysis for categorical data

Table 2: Professional Duties and Expectations – Training Directors and Clinical Neonatologists

	All	Clinical Neonatologist	Training Director	p-value
	n = 666	578 (87%)	88 (13%)	
Clinical Work				
Weekday (Monday through Friday)*	84 (50 - 120)	87 (50 - 120)	75 (50 - 95)	0.02
Weeknight (night of Monday through Friday)*	30 (15 - 50)	32 (18 - 52)	25 (12 - 40)	0.017
Weekend day (Saturday or Sunday)*	24 (14 - 30)	24 (14 - 34)	21 (12 - 28)	NS
Weekend nights* (night of Saturday or Sunday)*	14 (10 - 24)	15 (10 - 24)	12 (8.25 - 18)	0.016
Clinical Hours*	1624.5 (1025.5 - 2271.5)	1680 (1054.5 - 2304)	1224 (877.5 - 1842)	0.001
Average Daily Census*				
Critical Care	6 (4 - 10)	5 (3 - 10)	10 (5 - 15)	<0.001
Intensive Care	10 (5 - 12)	10 (5 - 12)	10 (5.25 - 15)	NS
Non-Critical Care	0 (0 - 4)	0 (0 - 4)	0 (0 - 4)	NS
Normal Newborn	0 (0 - 5)	0 (0 - 5)	0 (0 - 0)	0.001
Total Rounding Census	20 (15 - 28)	20 (15 - 26.25)	22.5 (18 - 30)	0.005
Level nursery where most time spent**				
Level 4	219 (33%)	162 (28%)	57 (66%)	<0.001
Level 3	378 (57%)	348 (60%)	30 (34%)	NA
Level 2	63 (9%)	63 (11%)	0 (0%)	NA
Level 1	4 (1%)	4 (1%)	0 (0%)	
Have Outpatient Duties				
Yes**	120 (18%)	100 (17%)	20 (23%)	NS
Outpatient Days*	12 (6 - 28)	12 (6 - 27.25)	13.5 (7 - 29.5)	NS
Scholarly Work				
Engage in Research				
Yes**	231 (35%)	168 (29%)	63 (72%)	<0.001
Annual Funding*	\$0 (\$0 - \$50,000)	\$0 (\$0 - \$10,000)	\$25,000 (\$0 - \$200,000)	<0.001
Scholarly Productivity*				
Paper submissions	2 (1 - 4)	2 (1 - 3)	3 (2 - 6)	<0.001
Publications in Past Year	2 (1 - 3)	1 (1 - 3)	2 (1 - 5)	<0.001
Principal Authorship	3 (1 - 7)	2 (1 - 5)	6 (2 - 20)	<0.001
Presentations	4 (2 - 6)	3 (2 - 5)	5 (3 - 10)	<0.001
Academic Appointment***				
No	250 (38%)	244 (42%)	6 (7%)	
Yes (not tenure)	352 (53%)	295 (51%)	57 (65%)	<0.001
Yes (tenure track)	45 (7%)	22 (4%)	23 (26%)	
Academic Rank***				
Instructor	34 (9%)	34 (11%)	0 (0%)	
Assistant professor	176 (44%)	157 (50%)	19 (24%)	
Associate professor	104 (26%)	75 (24%)	29 (36%)	<0.001
Full professor	54 (14%)	26 (8%)	28 (35%)	
Adjunct	16 (4%)	13 (4%)	3 (4%)	
Administrative Time*				
Weeks	6 (3 - 15)	5.6 (2 - 12)	11 (6 - 20)	<0.001
Internal Roles**				
Chair, Institutional Committee	46 (7%)	36 (6%)	10 (11%)	NS
Medical Director	228 (34%)	198 (34%)	31 (35%)	NS
Division Chief	44 (7%)	29 (5%)	15 (17%)	0.005
Department Chair	26 (4%)	23 (4%)	3 (3%)	NS
None	255 (38%)	255 (44%)	0 (0%)	<0.001
External Roles**				
State Committee Chair	12 (2%)	9 (2%)	3 (4%)	NS
National Committee Chair	18 (3%)	8 (1%)	10 (13%)	0.004
Inter-Institutional Collab Director	9 (1%)	6 (1%)	3 (4%)	NS
International Collab Chair	0 (0%)	0 (0%)	0 (0%)	NS
None	441 (70%)	410 (74%)	31 (39%)	<0.001
Compensation				
Cash Compensation*				
Base Compensation	\$250,000 (\$220,000 - \$305,000)	\$250,000 (\$220,000 - \$310,000)	\$250,000 (\$210,000 - \$288,000)	NS
Administrative stipend	\$15,000 (\$5,000 - \$32,000)	\$15,000 (\$5,000 - \$30,000)	\$20,000 (\$5,750 - \$40,000)	NS
Extra duty earnings	\$20,000 (\$10,000 - \$50,000)	\$20,000 (\$10,000 - \$50,000)	\$20,000 (\$5,750 - \$38,000)	NS
Productivity incentive	\$25,000 (\$10,000 - \$80,000)	\$30,000 (\$10,000 - \$81,250)	\$15,000 (\$4,750 - \$81,250)	NS
Quality incentive	\$14,000 (\$7,000 - \$24,450)	\$15,000 (\$8,000 - \$25,000)	\$10,000 (\$5,000 - \$15,000)	NS
Research incentive	\$14,649 (\$4,375 - \$20,000)	\$15,000 (\$10,000 - \$20,000)	\$12,149 (\$3,125 - \$19,825)	NS
Calculated Total Cash Compensation	\$294,334 (\$233,625 - \$357,395)	\$295,500 (\$230,250 - \$360,000)	\$281,000 (\$239,625 - \$338,000)	NS
Employment Status**				
Employee	553 (83%)	472 (82%)	81 (92%)	0.002
Full/Part owner	44 (7%)	40 (7%)	4 (5%)	NS
Contractor	70 (11%)	67 (12%)	3 (3%)	<0.001
Other Employment Type	15 (2%)	15 (3%)	0 (0%)	<0.001
Benefits**				
Bonus	393 (60%)	346 (61%)	47 (53%)	NS
Health Insurance	608 (92%)	522 (92%)	86 (98%)	0.002
Malpractice	631 (96%)	544 (95%)	87 (99%)	0.018
Loan Repayment	8 (1%)	6 (1%)	2 (2%)	NS
Reimburse for Professional Expenses	563 (86%)	488 (86%)	75 (85%)	NS
Tuition Reimbursement	89 (14%)	63 (11%)	26 (30%)	<0.001
Paid Family Care Leave	179 (27%)	146 (26%)	33 (38%)	0.033
Paid Family Medical Leave	274 (42%)	222 (39%)	52 (59%)	<0.001
Dependent Care Leave	233 (35%)	199 (35%)	34 (39%)	NS
Life Insurance	496 (75%)	424 (74%)	72 (82%)	NS
Long-Term Disability Ins	433 (66%)	370 (65%)	63 (72%)	NS
Short-Term Disability Ins	408 (62%)	350 (61%)	58 (66%)	NS
Retirement	508 (77%)	437 (77%)	71 (81%)	NS
Other	18 (3%)	16 (3%)	2 (2%)	NS

We used *Wilcoxon test for medians of data with skewed distribution, **t-tests to compare means of normally distributed data, and ***chi-square analysis for categorical data.

