

Using Public Health Workforce Surveillance Data to Prioritize Retention Efforts for Younger Staff



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Introduction: The public health enterprise has a people problem. An aging workforce coupled with a sustained, strong economy and healthcare sector has made the recruitment and retention of young, educated staff challenging. Approximately one third of public health staff aged 33 years and younger are considering leaving their organization in the next year. Their reasons for leaving, and considerations for staying, are not well characterized within public health.

Methods: Data were drawn from the Public Health Workforce Interests and Needs Survey, a nationally representative survey of state and local governmental public health employees across the U.S. In 2017, a total of 43,701 staff responded. Descriptive statistics across age groups were examined, and reasons for leaving were characterized. A latent class model and an intent-to-leave logit model were fit in 2019.

Results: Pay and lack of opportunities for advancement were most frequently selected as reasons for considering leaving. Results of a logit model showed that being somewhat or very dissatisfied (versus somewhat or very satisfied) was associated with higher odds of intending to leave (AOR=4.4, $p<0.0001$), as was pay dissatisfaction (AOR=2.0, $p<0.0001$). Scoring higher than the agency median on a construct measuring perceived lack of organizational support (AOR=1.8, $p<0.0001$) and on a scale measuring burnout (AOR=2.6, $p<0.0001$) was also associated with higher odds of intending to leave.

Conclusions: Many factors associated with an increased intent to leave are present among all age groups. However, support is needed for managers as they attempt to develop and implement solutions that seek to retain the younger workforce in particular. Creating paths for promotion, competitive pay practices, organizational support, and engagement are all critical for retention in this group.

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INTRODUCTION

The public health system is responsible for the vast majority of gains in life expectancy made during the 20th century.^{1,2} The median return on investment is quite substantial for a broad range of public health interventions including bike and pedestrian infrastructure, tobacco cessation, and injury prevention programs—one recent systematic review places return on investment at \$14.30 per dollar spent.³ Despite this, the governmental public health workforce may be “threatened by mass extinction” because of high rates of

retirement and competition from the private sector.⁴ A concerted, nationwide effort to recruit, retain, and

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develop a diverse, well-trained, and inspired governmental public health workforce is needed if previous gains are to be at least maintained.⁵

The government workforce has been aging as the Baby Boomers approach retirement. Between 1980 and 2005, the mean age of state and local government workers increased by 5.5 and 4.6 years, respectively.⁶ In state and local health agencies, specifically, employees are about 6 years older than their private sector counterparts, with median ages of 45 and 39 years, respectively.⁷ Potential loss from an aging workforce is compounded by significant losses of positions because of budget reductions and a fifth of the workforce considering leaving their positions in the next year.^{4,8} Although turnover rates appear to be lower in local health departments than in state health agencies, both state and local public health systems are threatened by these potential losses.⁹ Of course, the ultimate retirement of aging workers is inevitable; thus, the retention of younger workers is increasingly important and is an area ripe for additional research.

Recent analyses have shown that younger workers in a health agency, especially those aged younger than 33 years, are typically among the most likely to leave the health agency.¹⁰ Salary is a commonly cited reason for seeking a new job. Aggregate data from the Current Population Survey suggest that workers aged younger than 33 years in state and local government earn about the same as their peers in the private sector (state government mean=\$32,000, median=\$30,000; local government mean=\$36,000, median=\$35,000; private sector mean=\$32,000, median \$24,000).⁹ Government workers have significantly higher levels of education, however, such that a worker with a bachelor's or advanced degree may actually earn less in the public sector than that same worker could earn in a private organization.⁹ Previous research has shown that although younger federal workers were more likely to be considering leaving than their older counterparts, they did not show substantially different motivations for work or reasons for considering leaving.¹¹ The authors are not aware of any similar research specifically on the state and local public health workforce. Given the centrality of the state and local public health system in protecting and improving the public's health, strategies to develop and maintain a robust and skilled public health workforce must be informed by current and relevant research.

This study focuses on public health workers aged younger than 33 years, working in state and local health agencies in the U.S., who are considering leaving their organization. The study examines their motivations for considering leaving the agency (including pay and other reasons), analyzes differences among groups of workers

in their interests and reasons for leaving, and makes recommendations about what health agencies can do to increase their retention of these early career employees.

METHODS

Study Sample

This manuscript used data from the Public Health Workforce Interests and Needs Survey (PH WINS).¹² In the fall and winter of 2017, all 50 state health agencies (SHAs), the 30 large local health departments (LHDs) that are members of the Big Cities Health Coalition (BCHC), and a random sample of mid-sized LHDs were invited to participate in PH WINS. A total of 47 state agencies, 26 BCHC health agencies, and 71 mid-sized LHDs participated by fielding the survey to all of their public health agency employees. Balanced repeated replication weights were used to adjust for complex sample design and nonresponse. In total, 102,000 staff were invited to participate in the survey, and 47,604 did. After adjusting for staff who had left the agency and bad e-mail addresses, the response rate was 48%.

Measures

The PH WINS instrument covers 4 primary domains: workplace environment, training needs, awareness of emerging concepts in public health, and demographics. This manuscript focuses primarily on questions about staff intent to leave and demographics. Staff were asked whether they were planning to leave and for what reasons they were considering leaving. Moreover, staff were asked which alternative setting they were considering. Options included government and nongovernment employers, inside and outside of public health, for retirement, and an *other* option. Staff were also asked whether they were planning to retire in any of the next 5 years. Workplace environment variables included job satisfaction; pay satisfaction; and constructs measuring supervisor satisfaction, organizational support, employee engagement, and burnout using the Oldenburg Burnout Inventory.^{13,14} Demographic variables, including sex, educational attainment, supervisory status, and race/ethnicity were also collected in PH WINS.

Statistical Analysis

Descriptive and bivariate analyses were conducted with demographics and intent to leave as the primary focus, using Rao–Scott adjusted chi-square test for inferential comparisons. Focusing on workers aged <33 years, latent class analysis was conducted to examine reasons for leaving as the primary covariates of interest. Akaike information criterion and Bayesian information criterion statistics were used for goodness of fit, and marginal means were examined by class membership to view how well classes were delineated from each other. After examining goodness of fit and delineation tests, 3 classes were selected.

Finally, logistic regression was conducted to examine predictors of intent to leave among those aged <33 years ($n=5,575$). The independent variables were job satisfaction; pay satisfaction; and constructs measuring supervisor satisfaction, organizational support, employee engagement, and burnout. Demographic variables and setting were also controlled for. Variance inflation factor analysis was used to assess collinearity. The web-based survey was conducted using Qualtrics survey software, version 2017, and data

were cleaned and analyzed in Stata, version 15.1 in 2018 and 2019.

This study was determined to be exempt by NORC at the University of Chicago IRB.

RESULTS

The governmental public health workforce in the U.S. is composed of 50,000 SHA–Central Office (CO) staff, 30,000 BCHC LHD staff, and 120,000 other local or regional health agency staff. PH WINS does not include 20,000 staff who were not captured by PH WINS 2017 because they work in the smallest LHDs, which were not eligible to participate. Among all 180,000 represented by PH WINS, 15% are aged <33 years, 54% are aged 33–54 years, and 31% are aged ≥55 years (Table 1). This

differs somewhat across setting, with those <33 years constituting 13% of the SHA-CO workforce (95% CI=12%, 14%), 16% of the BCHC LHD workforce (95% CI=13%, 19%), and 15% of the other LHD/regional health department workforce (95% CI=14%, 16%) ($p=0.0369$).

Of the staff aged <33 years, 88% are nonsupervisors (95% CI=86%, 90%), compared with 69% of those aged ≥33 years (95% CI=67%, 71%, $p<0.0001$). Of the staff aged <33 years, 81% are women (95% CI=78%, 83%) versus 78% (95% CI=75%, 80%, $p=0.19$), 46% are people of color (95% CI=40%, 52%) versus 40% (95% CI=36%, 44%, $p=0.0373$), 75% have at least a bachelors (95% CI=72%, 78%) versus 66% (95% CI=62%, 69%, $p<0.0001$), and 58% make <\$45,000 a year (95%

Table 1. Demographics of Public Health Workforce, by Age

Demographics	Age, years			National total%
	<33 %	33–54 %	≥55 %	
Supervisory status				
Nonsupervisor	88	69	69	72
Supervisor	9	18	18	17
Manager	2	10	10	9
Executive	1	2	3	2
Sex				
Male	18	21	23	21
Female	81	79	77	78
Nonbinary/other	1	1	0	0
Race/ethnicity				
American Indian	0	0	0	0
Asian	5	6	4	5
Black/African American	13	17	16	16
Hispanic/Latino	18	14	8	13
Native Hawaiian/Pacific Islander	0	1	0	0
White	54	56	66	59
Two or more races	9	6	5	6
Highest degree				
No college degree	15	18	20	18
Associate's	10	15	16	15
Bachelor's	46	35	35	36
Master's	27	27	23	26
Doctoral	2	5	6	5
Has formal Public Health degree	24	14	9	14
Annualized earnings				
<\$45,000	28	19	17	20
\$45,000–\$74,999	68	60	58	60
≥\$75,000	4	21	26	20
Setting				
SHA-CO	26	30	31	30
BCHC LHD	18	17	14	16
Other LHD	56	54	55	54

BCHC, Big Cities Health Coalition; LHD, local health department; SHA-CO, state health agency—Central Office.

CI=53%, 63%) compared with 34% of those aged ≥ 33 years (95% CI=32%, 36%, $p<0.0001$). Compared with 12% (95% CI=11%, 14%, $p<0.0001$) of their older colleagues, 24% of staff <33 years have formal training in public health at some level (95% CI=21%, 26%). Among those who work in the public health sciences, 48% have formal education in public health (95% CI=45%, 51%) compared with 25% of those aged ≥ 33 years (95% CI=20%, 30%, $p<0.0001$).

Overall, 24% of staff said they are considering leaving their organization in the next year for reasons other than retirement (95% CI=22%, 26%). Among staff aged <33 years, 33% are considering leaving (95% CI=29%, 36%) compared with 22% of other staff (95% CI=20%, 25%, $p<0.0001$). This varied somewhat by setting, with 38% of SHA-CO staff aged <33 years indicating they are considering leaving (95% CI=36%, 40%), 39% of BCHC LHD staff (95% CI=33%, 44%), and 28% of other LHD/regional health department staff (95% CI=23%, 33%, $p=0.0006$).

Staff who reported that they were considering leaving their organization in the next year were asked to indicate the most important reason(s) for their leaving their organization (Table 2). Nationally, 59% indicated that pay was a top reason for leaving (95% CI=56%, 62%). This was selected by 66% of staff aged <33 years who said they were considering leaving (95% CI=63%, 69%) and 56% of older staff considering leaving (95% CI=53%, 60%, $p<0.0001$). Lack of opportunities for advancement was selected by 53% (95% CI=49%, 58%) of staff aged <33 years versus 51% of older staff (95% CI=49%, 52%, $p=0.23$). Job satisfaction was selected as a reason for potentially leaving by 37% of staff aged

<33 years (95% CI=34%, 40%) versus 30% of older staff (95% CI=29%, 32%, $p<0.0001$). Workplace environment was the next most frequently selected reason for leaving, with 36% of staff aged <33 years (95% CI=32%, 39%) and 39% of older staff (95% CI=37%, 41%, $p=0.0894$) indicating this was important. Other opportunities outside the agency were cited by 31% of staff aged <33 years (95% CI=28%, 35%) compared with 20% of older staff (95% CI=18%, 21%, $p<0.0001$). As shown in Appendix Figure 1, available online, reasons for leaving were generally multifactorial, with 87% of respondents indicating more than 1 reason. Pay was the most selected reason in general for those selecting 1 primary reason (55%), with the next most frequently selected being opportunities outside the agency (19%). As more reasons were selected, job satisfaction and workplace environment-related options grew substantially.

A latent class analysis was performed on the data. A 3-class model was selected owing to goodness of fit and class delineation metrics (Figure 1). Class 1 were staff characterized as seeking greener pastures (proportion=36% of total), because they cited pay and lack of opportunities for advancement as their primary reasons for considering leaving. The second class was characterized as disappointed by trajectory, because they cited an absence of an internal career path, excessive stress, burnout, and pay considerations (proportion=46%). Finally, the third class consisted of those experiencing holistic organizational dissatisfaction, including with the support they receive, the workplace environment, their job, the lack of opportunities for advancement, their supervisor, excessive stress, and their pay (proportion=18%). Those aged <33 years were more

Table 2. Reasons Staff Are Considering Leaving, by Age

Reason	<33 years, %	Rank	≥ 33 years, %	Rank	Total, %	Rank	p-value
Pay	66	1	56	1	59	1	<0.0001
Lack of opportunities for advancement	53	2	51	2	51	2	0.2305
Job satisfaction	37	3	30	5	32	4	<0.0001
Workplace environment	36	4	39	3	38	3	0.0894
Other opportunities outside agency	31	5	20	11	22	11	<0.0001
Lack of acknowledgment/recognition	28	6	30	6	29	6	0.2058
Lack of support	26	7	32	4	31	5	0.0002
Work overload/burnout	26	8	28	7	28	7	0.1715
Stress	25	9	27	8	27	8	0.0486
Other	24	10	23	10	23	10	0.352
Satisfaction with your supervisor	21	11	23	9	23	9	0.2448
Lack of flexibility (flex hours/telework)	17	12	17	13	17	12	0.8569
Lack of training	16	13	15	14	16	14	0.4574
Weakening of benefits (e.g., retirement contributions/pensions)	13	14	15	15	14	15	0.1669
Leadership changeover	12	15	18	12	17	13	<0.0001

Note: Boldface indicates statistical significance ($p<0.05$).

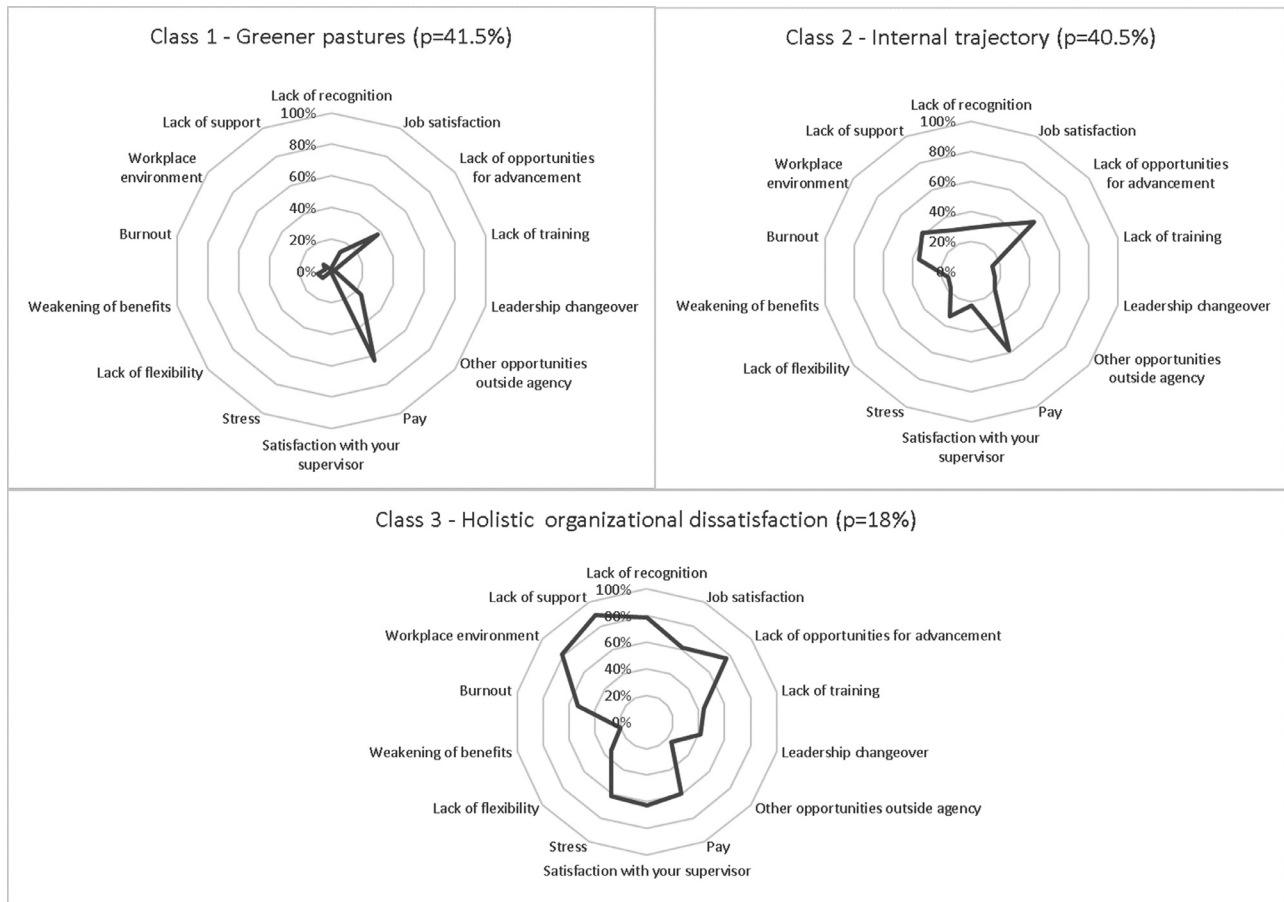


Figure 1. Latent class analysis for reasons for leaving among public health staff <33 years old indicating they are considering leaving in 2017. p=proportion of respondents in this latent class.

likely to be in Class 1 (greener pastures), less likely to be in Class 2 (disappointed by trajectory), and equally likely to be in Class 3 (holistic organizational dissatisfaction) compared with their older counterparts ([Appendix Table 1](#), available online).

[Table 3](#) shows bivariate comparisons and results of a logistic regression, with intent to leave among staff aged <33 years as the dependent variable. Among staff somewhat or very dissatisfied with their job, 73% were considering leaving and had an AOR of 4.4 of intending to leave, compared with those somewhat or very satisfied with their job ($p<0.0001$). Similarly, low levels of pay satisfaction had an AOR of 2.0 (95% CI=1.5, 2.6, $p<0.0001$). Having lower-than-median levels of perceived organizational support and employee engagement were statistically significantly associated with higher intent to leave, although low supervisor satisfaction was not. Having higher than agency median levels of burnout was associated with 2.6 times higher odds of leaving (95% CI=1.9, 3.7, $p<0.0001$). Sex and race/ethnicity were not statistically significantly different in terms of

intent to leave, although educational attainment and setting were.

DISCUSSION

In the public health workforce, 15% of workers are aged younger than 33 years. Of this group, one third report an intent to leave in the next year, which is 50% greater than the remainder of the workforce. These numbers paint a bleak picture for the future public health workforce. Recruiting new Master of Public Health graduates into the public sector is increasingly challenging given competition from the nonprofit and for-profit sectors.^{15,16} This places an increasing premium on retaining those aged younger than 33 years who choose government service, especially given that this age group has higher levels of education than their older colleagues.

Pay satisfaction, lack of opportunities for advancement, job satisfaction, and workplace environment were among the top 5 cited reasons for leaving regardless of age. Although the frequency of individual reasons cited

Table 3. Bivariate and Logit Modeling for Intent to Leave Among Staff <33 Years Old

Variable	Bivariate comparison			
	Percent considering leaving (95% CI)	p-value	AOR (95% CI)	p-value
Job satisfaction				
Somewhat/Very satisfied	24 (21, 28)	<0.0001	Ref	
Somewhat/Very dissatisfied	73 (70, 77)		4.4 (3.5, 5.5)	<0.0001
Pay satisfaction				
Somewhat/Very satisfied	21 (19, 24)	<0.0001	Ref	
Somewhat/Very dissatisfied	42 (35, 49)		2.0 (1.5, 2.6)	<0.0001
Supervisor satisfaction ^a				
Higher than agency median	29 (26, 32)	0.026	Ref	
Lower than agency median	37 (30, 44)		1.0 (0.8, 1.4)	0.791
Organizational support ^a				
Higher than agency median	22 (18, 27)	<0.0001	Ref	
Lower than agency median	47 (44, 50)		1.8 (1.4, 2.3)	<0.0001
Employee engagement ^a				
Higher than agency median	23 (18, 28)	<0.0001	Ref	
Lower than agency median	41 (38, 44)		1.4 (1.1, 1.7)	0.009
Burnout ^b				
Lower than agency median	15 (12, 19)	<0.0001	Ref	
Higher than agency median	45 (42, 49)		2.6 (1.9, 3.7)	<0.0001
Sex				
Men	36 (32, 41)	0.160	Ref	
Women	32 (28, 36)		0.9 (0.7, 1.3)	0.559
Highest degree attained				
Less than bachelors	28 (24, 33)	0.031	Ref	
Bachelors	31 (25, 38)		1.4 (1, 2)	0.077
Graduate	39 (36, 42)		1.8 (1.2, 2.6)	0.003
Supervisory status				
Nonsupervisor	33 (29, 37)	0.166	Ref	
Supervisor or higher	28 (24, 34)		0.7 (0.5, 0.9)	0.013
Race/ethnicity				
White	32 (28, 35)	0.758	Ref	
Person of color	33 (27, 40)		1.2 (0.8, 1.6)	0.385
Setting				
SHA-CO	38 (36, 39)	0.001	Ref	
BCHC LHD	38 (33, 44)		1.1 (0.9, 1.4)	0.338
Other LHD/RHD	28 (23, 33)		0.8 (0.6, 1)	0.049
Constant			0.1 (0, 0.1)	<0.0001

Note: Boldface indicates statistical significance ($p < 0.05$).

^aDerived from a factor variable.

^bDerived from a composite variable.

BCHC, Big Cities Health Coalition; LHD, local health department; RHD, regional health department; SHA-CO, state health agency—Central Office.

among young employees was similar to those of older employees, lack of job satisfaction and other opportunities outside the agency ranked higher among reasons for young employees. Pay was identified as the most frequently reported primary reason for a young employee's intent to leave. However, pay is not the sole reason staff say they are considering leaving. The latent class analyses showed that certain combinations of reasons were relatively prevalent—those looking for greener pastures,

those disappointed with their internal trajectory, and those classified as holistically dissatisfied with their organization. Furthermore, the greener pasture phenomenon was more prevalent among the younger workers. This supports the conventional wisdom that younger workers are more mobile, more willing to change jobs, and still looking for the right fit in their career compared with older workers.¹¹ The latent class analysis also illuminates that the differences between younger and older workers

are more in the combination of reasons than in the individual reasons cited.

These findings should have significant meaning for governmental public health agency leaders interested in retention. This and previous studies have repeatedly found pay to be a major driver of intent to leave governmental public health agencies.^{10,17–23} This is challenging to address, as often individual agencies operating within a larger state or local government structure do not have the autonomy to authorize pay increases. However, improved job satisfaction and opportunities for advancement are factors that have equal and possibly greater influence than pay. Leaders within state and local governmental public health agencies have greater influence over these factors. In addition to the breadth of literature on strategies to improve workplace satisfaction, leaders within state and local governmental public health agencies need to consider how to encourage growth and development among employees and prepare them to successfully compete for internal opportunities when they become available.

These data show that pay, although often cited as a major driver for leaving, is not without peer. Concerns about pay are challenging as individual agencies may have little control over approving salary adjustments.¹⁷ Although it is difficult to address dissatisfaction with pay one person or agency at a time, federal legislation authorizing and expanding student debt reduction and forgiveness programs could help to address this potential threat to the nation's continued health.

Within one's own agency or team, other factors are within the control of governmental public health agency managers. How employees feel about their workplace and supervisors influence their intent to leave.^{24,25} Although opportunities for advancement may not be regularly or routinely available, opportunities for development and stretch assignments can be created and prioritized.²⁵ However, how a manager goes about creating a workplace that increases employee satisfaction or creating stretch assignments may be challenging to governmental public health agency managers, most of whom have little to no formal training in organizational or employee development.²⁶ Managers may want to make improvements but lack the necessary skills, knowledge, or support. Ensuring resources are available to managers is vital to retaining the governmental public health agency workforce aged younger than 33 years.

Limitations

This manuscript has several limitations. Although the PH WINS sample is nationally representative of state and local public health and has a high response rate, it does not capture respondents who work at health

departments that have fewer than 25 staff or served fewer than 25,000 people. Workers in these smaller health departments account for about 10% of the national state and local governmental public health workforce. Although other analyses have shown that staff from smaller health departments have similar inclinations as those from mid-sized LHDs,^{27,28} this is a limitation. PH WINS also does not include federal workers. Another consideration is the relationship between intent to leave and actually leaving. Recent research has shown that about half of those in public health who say they are thinking about leaving do so.^{10,20} Although intent to leave is the strongest indicator of actual separations, some uncertainty exists in the relationship between the strength of the reasons for leaving and types of reasons for leaving and doing so. Future research and additional rounds of PH WINS may be able to elucidate these issues.

CONCLUSIONS

There will be an eventual outflow of governmental public health agency workers because of retirement. If there is an insufficient inflow to replace them, the public health system that promotes and protects the health of the public is in jeopardy. Many factors associated with an increased intent to leave are present among all age groups. However, further research is needed to determine how best to increase job satisfaction specifically among governmental public health agency employees aged younger than 33 years. Support is also needed for managers as they attempt to develop and implement solutions that seek to retain this group within the workforce.²⁶ If those working to retain those aged younger than 33 years within the workforce are not supported, then their efforts are likely to be unsuccessful.

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KS, JPL, and LL conceptualized the study. KS created an initial draft of the manuscript. JPL conducted the data analysis. RL-L provided additional data analysis. All authors contributed to the interpretation of data, writing, and critical review of the article.

Lamprecht is employed by the Texas Department of State Health Services but conducted this study in her personal capacity.

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SUPPLEMENTAL MATERIAL

Supplemental materials associated with this article can be found in the online version at <https://doi.org/10.1016/j.amepre.2020.03.017>.

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