Effectiveness of animal care and use program performance measurements

To the editor:

Performance measurement has been well recognized as an important tool for improving the quality of health care¹. However, whether it can also improve the quality of animal care and use programs is not clear. We analyzed performance metric data of the Department of Veterans Affairs research facility's animal care and use programs collected annually from 2011, the first year of our data collection, through 2016. The Department of Veterans Affairs health care system is the largest integrated health care system in the US with more than 70 facilities conducting research involving laboratory animals each year. As part of the quality assurance program, facilities were required to conduct regulatory audits of all active animal research protocols once every three years^{2,3}. As shown in **Table 1**, among a total of 14 animal care and use program performance metrics, nine showed improvements, ranging from 56% to 100%, five remained unchanged, and none deteriorated during the study period. The five performance metrics that showed no improvement from 2011 through 2016 were those with very small initial noncompliant rates, namely, less than 0.3% in 2011. On the other hand, those that showed

improvement were those with initial noncompliant rates of 0.89% to 5.57%. The majority of the improvement in these nine performance metrics occurred within the first two to three years of the study period. We conclude that performance measurement is an effective tool in improving the performance of animal care and use programs. The issue challenging us today is not whether we should continue to measure performance, but how to improve current performance measurements to maximize benefits. Our current performance metrics undoubtedly have not covered the full scope of the animal care and use program. In view of the encouraging results reported here, we plan to expand our animal care and use program performance measurements by adding additional metrics in the future.

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TABLE 1 | VA animal care and use program performance measurements

	2011	2012	2013	2014	2015	2016	P value ¹	Change (%) ²
Number of facilities	72	73	74	74	75	75		
IACUC³ and R&DC reviews								
Number of protocols audited	1,347	1,286	1,147	1,067	982	934		
Initiated before IACUC approval	2 (0.15%) ⁴	1 (0.08%)	2 (0.17%)	1 (0.09%)	0 (0.00%)	1 (0.11%)	0.5118	N/A
Completed without IACUC approval	0 (0.00%)	1 (0.08%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	0.4682	N/A
Initiated before R&DC approval	1 (0.07%)	2 (0.16%)	4 (0.35%)	2 (0.19%)	2 (0.20%)	16 (1.71%)	2.0000	N/A
Completed without R&DC approval	12 (0.89%)	1 (0.08%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	0.0000	100
Lapsed in IACUC continuing review	75 (5.57%)	53 (4.12%)	23 (2.01%)	46 (4.31%)	27 (2.75%)	23 (2.46%)	0.0001	56
Continued research during lapse	- ⁵	25 (1.94%)	6 (0.52%)	12 (1.12%)	2 (0.20%)	3 (0.32%)	0.0000	84
For-cause suspension/termination								
Number of active protocols	-	-	3,203	3,119	3,087	2,837		
Number of protocols suspended	-	-	41 (1.28%)	30 (0.96%)	22 (0.71%)	11 (0.39%)	0.0001	70
Due to animal welfare concerns	-	-	7 (0.22%)	11 (0.35%)	7 (0.23%)	6 (0.21%)	0.7455	N/A
Due to administrative issues	-	-	34 (1.06%)	19 (0.61%)	15 (0.49%)	5 (0.18%)	0.0000	83
Research personnel scope of practice and training requirements								
Number of research personnel audited	4,926	4,604	5,064	4,838	4,639	4,068		
Without scope of practice	170 (3.45%)	276 (5.99%)	61 (1.20%)	23 (0.48%)	59 (1.27%)	13 (0.32%)	0.0000	91
Working outside of scope of practice	1 (0.02%)	1 (0.02%)	1 (0.02%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	0.1403	N/A
Lapse in required training	276 (5.60%)	186 (4.04%)	119 (2.35%)	138 (2.85%)	175 (3.77%)	55 (1.35%)	0.0000	76
Without initial training	93 (1.89%)	26 (0.56%)	19 (0.38%)	24 (0.50%)	16 (0.34%)	14 (0.34%)	0.0000	82
Lapse in annual continuing training	183 (3.71%)	160 (3.48%)	100 (1.97%)	114 (2.36%)	159 (3.43%)	41 (1.01%)	0.0000	73

¹Determined using analysis of ordinal categories [ref. 4] for the trend of changes from 2011 through 2016. ²Percent change from 2011 (2012 or 2013) to 2016. ³Abbreviations used: IACUC, institutional animal care and use committee; R&DC, research and development committee. ⁴The numbers in parentheses were the percentages of the total number of protocols or research personnel audited. ⁵Data not collected. N/A denotes not applicable.