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Have the “black clouds” cleared with new residency program regulations?

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Brief Report

Achieving comparable clinical experiences and workload for all trainees is a desirable goal for residency programs. Perhaps inevitably, though, there are some house officers who are perceived to work harder during their requisite training. For at least the last few decades, these residents with more work have been referred to as having a “black cloud.” More colourful terms have been used as well to describe such house staff perceived to “magnetically” attract bad luck.

At least three publications have explored the basis for this categorization. The first, published by Tanz and Charrow in 1993, showed that in a pediatric residency program some interns with the reputation of having a “black cloud” (n=5 of 17 total interns studied) appeared to sleep less, perceive that they worked harder and potentially had more difficult on-call experiences.^[1] The second study published in 2004 included 19 internal medicine interns at a community-based program.^[2] In this publication, Walling demonstrated that “black cloud” interns (n=7 of 19 total interns studied) admitted approximately 24% more patients than did those labeled as having “white clouds.” A third study followed 6 podiatric surgical residents at an urban trauma center for a period of one year (July 1, 2009 to July 1, 2010) and asked them to record workload on a nightly basis in terms of 3 variables: pages/telephone calls, consultations, and hospital admissions. In this small cohort, Meyr and colleagues found that all residents shared a similar workload, but there was a perception that some residents were “black clouds.”^[3]

Prompted by a 2008 report from the Institute of Medicine (IOM),^[4] the Accreditation Council for Graduate Medical Education (ACGME) in the United State began introducing rules with the aim to better protect patients against fatigue-related errors and to enhance the learning environment in residency programs. The new policies were also intended to better distribute workload and ensure comparable clinical experiences for all trainees. Specifically, the ACGME introduced rules in 2009 that stated interns must not be responsible for the ongoing care of more than 10 patients at any given time.^[5] They also stipulated that interns must not be assigned more than 5 new patients per admitting day and no more than 8 new

patients in a 48-hour period.^[5] The ACGME subsequently introduced new duty hour standards that went into effect in July 2011. These limit interns to working in the hospital for a maximum of 80 hours per week; interns must not work shifts that exceed 16 hours in during.^[6]

The present study was designed to assess for the ongoing presence of “black cloud” residents in the era of more restrictive ACGME policies. It further aims to determine if these residents deemed by their peers to have “black clouds” have a greater workload when compared to all other interns. The study was conducted at the Columbia University Medical Center, a busy urban academic hospital in New York City. It was approved by the Columbia Institutional Review Board and informed consent was obtained from participating residents.

In the summer of 2015, all Columbia University Medical Center internal medicine trainees who had just completed internship and who continued in the program for internal medicine residency were surveyed. Participants anonymously and subjectively evaluated themselves and their peers (i.e. a gestalt assessment) and categorized themselves and each peer as having either a “black,” “gray,” or “white” cloud during the first year of training. Interns were said to have a “black cloud” if most respondents rated this peer as such.

Workload was retrospectively determined by number of notes written by each resident in the electronic medical record during their first year of training. Notes were categorized as “ward” and “intensive care unit (ICU)” admission and follow-up, discharge, event, death, and ambulatory visit notes. Total number of ICU, ward and discharge notes was normalized for the number of ward and ICU rotations.

The normalized number of notes between those residents said to have a “black cloud” and all others was compared using two-tailed Wilcoxon rank-sum tests applying the Bonferroni-Holm correction for multiple comparisons. Sensitivity analyses were performed using self-perceived cloud status instead of peer-evaluated cloud status. A *P* value of less than 0.05 was considered to be statistically significant. All statistical analyses were performed using Stata version 13 (StataCorp, College Station, Texas).

All 42 residents recruited completed the survey (n=42, 100% participation). A total of 5 interns (11.9%) were determined to have a “black cloud.” These interns, when compared to their peers, did not admit significantly more patients to the wards or ICU (*P*=0.55 and *P*=0.088, respectively). Additionally, there were no significant differences in the number of discharge summaries, outpatient clinic visit notes, inpatient follow-up notes, or death notes written (*P*=1.00 for all). See Figure 1 for a visual summary of these results. Sensitivity analyses using self-instead of peer-perceived cloud status showed no significant change in our results. It is important to note that interns did not have the authority to refuse an admission to the floor or the ICU. Interns further had limited control over their outpatient clinic schedules.

It is interesting that in the era of the newest ACGME restrictions, some residents are still believed to have a “black cloud.” While it is difficult to accurately assess workload, the number of notes written seems to be a reasonable surrogate measurement. There does not appear to be a significant difference in the amount of work between those residents thought

to have “black clouds” and everyone else. There are limitations to our approach. This exploratory study is limited by the small sample size (only 5 of the subjects were classified as having a “black cloud”). Furthermore, the strict caseload restrictions introduced in 2009 make it difficult to have gross imbalances in service size.^[5] To make any definitive conclusions, future studies should include a larger cohort and review other metrics of workload such as patient complexity and complications.

It would also be worth exploring further what factors influence cloud designation, if not workload. Higher levels of depressive symptoms may contribute to darker cloud status. In this scenario, the depressive symptoms themselves may be perceived by others as feeling overworked. It is also conceivable that these trainees are making more errors that create extra work.^[1] Ultimately, it will be important to identify residents designated by peers to have a “black cloud” so that program leadership can intervene, if this designation indeed reflects depressive symptoms.

In conclusion there was no significant difference in the amount of work between those residents thought to have “black clouds” and everyone else in this exploratory study. It is nonetheless notable that some residents continue to carry this stormy designation. Further research should explore what factors influence cloud designation to help clear the skies of medical training.

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References

1. Tanz RR, Charrow J. Black clouds. Work load, sleep, and resident reputation. *Am J Dis Child*. 1993 May; 147(5):579–84. [PubMed: 8488808]
2. Walling HW. Actual versus perceived workload for house officers: black cloud looming? *Ann Intern Med*. 2004 May 18; 140(10):847–8. [PubMed: 15148083]
3. Meyr AJ, Gonzalez O, Mayer A. Quantification and perception of on-call podiatric surgical resident workload. *J Foot Ankle Surg*. 2011 Sep-Oct;50(5):535–6. Epub 2011 Jun 11. DOI: 10.1053/j.jfas.2011.04.035 [PubMed: 21652228]
4. Institute of Medicine. [Accessed October 1, 2015] Resident Duty Hours: Enhancing Sleep, Supervision, and Safety. <http://www.iom.edu/Reports/2008/Resident-Duty-Hours-Enhancing-Sleep-Supervision-and-Safety.aspx>
5. Accreditation Council for Graduate Medical Education. [Accessed October 28, 2015] ACGME program requirements for graduate medical education in internal medicine: effective July 1, 2009. https://www.acgme.org/acgmeweb/Portals/0/PFAssets/2013-PR-FAQ-PIF/140_internal_medicine_07012013.pdf
6. Accreditation Council for Graduate Medical Education. [Accessed October 28, 2015] ACGME Duty Hours that went into effect. Jul. 2011 <https://www.acgme.org/acgmeweb/tabid/271/GraduateMedicalEducation/DutyHours.aspx>

Figure 1.

Workload comparison between interns with and without “black cloud.” Histograms of number of notes (by type, normalized) written by residents with “white” or “gray” clouds with superimposed histograms of number of notes (normalized) written by “black cloud” residents. Reported *P* values adjusted using Bonferroni-Holm correction.