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Biomedical burnout

Stress, long hours and low morale threaten to scar the activities and careers of US life-sciences researchers, argue **Warren Holleman** and **Ellen R. Gritz**.

Studies suggest that burnout among medical doctors has reached epidemic proportions around the world, accompanied by alarmingly high levels of clinical depression, suicidal thoughts, job dissatisfaction and unhappiness with work-life balance¹. The data are so compelling that some health organizations and physician groups are exploring ways to tackle these problems².

Almost nothing is known, however, about stress, burnout and morale among biomedical scientists. To take a closer look, we interviewed the chairs of the science departments

at MD Anderson Cancer Center in Houston, Texas, between July 2011 and February 2012. We asked them to assess changes in faculty morale, to identify major sources of stress and to discuss their feelings of optimism or pessimism about the future. We found that many faculty members are struggling in the face of funding pressures, bureaucracy, administrative burdens and faculty-administration conflict.

Without realizing it, we had captured the mood of an institution about to experience a difficult period that accentuated such pressures. A few months after we collected our results,

MD Anderson leadership came under fire, and the centre's faculty senate conducted a separate survey to assess faculty concerns (see go.nature.com/jcmgv2). The survey results themselves, which suggested high clinical workload, dismay over the departure of valued leaders and displeasure with top leadership over charges of nepotism and conflicts of interest, further upset faculty members.

In addition to conducting our own survey, we have talked to people at other institutions, and examined relevant publications^{3,4}. As a result, we conclude that the discontent at ►

► MD Anderson is emblematic of distressingly low morale at centres around the country. The effects of this year's federal budget sequester have only added to the gloom (see *Nature* **498**, 527–528; 2013). Ours is a pilot effort that we hope will be the basis for wider exploration and study into burnout among biomedical scientists — already, we have had preliminary discussions about a multi-centre study.

Financial and other pressures are certainly not unprecedented at academic institutions. But in recent years, our findings suggest, they have intensified and exacerbated each other, making research environments particularly stressful.

A MEASURE OF MORALE

In our survey, we approached 21 department chairs. We interviewed 19; three focused on conditions unique to their own departments, but the remaining 16 shared their observations, opinions and feelings about morale in general. The responses reflect pressing issues at one institution, but suggest struggles throughout the biomedical-research community.

Most of the chairs said that the morale of faculty scientists has worsened in recent years. Seven said that it had worsened significantly. As one interviewee put it, “Many faculty are deflated, unsettled and depressed. There is a sense of hopelessness; they’ve given up. There is some resentment; they’ve spent a long time establishing their careers and now there doesn’t seem to be a way to continue doing what they like to do.” Another alluded to the uncertain future of young investigators: “When I was a postdoc, the sense was that if you’re good, you’ll find a job. I can’t say that any more.”

The main stressors seem similar across different departments. Not surprisingly, funding was a big one. Several of the chairs described academic scientists as caught in a “perfect storm”: at a time when funding rates at the US National Institutes of Health have dropped drastically, some institutions are requiring faculty members to raise higher percentages of their salaries through grants. Productive scientists at middle and even senior levels are struggling to keep their careers afloat. “These are solid scientists, not marginal scientists. I don’t remember it ever being like that in the past. This hurts morale,” said one respondent.

The department chairs felt that institutions see ever-increasing productivity as a major goal. Executive leaders expect faculty members to seek and obtain more grant funding continuously, achieve higher-quality publications (as measured by metrics such as journal impact factors) and generally meet higher standards for academic excellence in areas such as teaching and collaboration. Although these are admirable goals, respondents noted that constantly raising the bar for high-functioning faculty members intensifies levels of comparison and implicit competition.

There is also the pressure to be continually

innovative in terms of research proposals, findings, publications and, in some cases, commercialization potential. Several respondents expressed concern that this relentless pressure might cause stress and burnout, and one said that department heads worry about extreme responses such as suicide or research misconduct aimed at gaming the system.

Some chairs discussed a downward spiral in which a scientist loses funding, and as a result has to reduce lab space and personnel, which in turn makes it more difficult to obtain funding. This dooms the scientist's chances as an independent investigator. Even when a career is salvaged, the researcher often suffers ongoing emotional strain as a result of losing valuable time and resources, and experiences guilt and shame about the adverse impact on the lives and careers of lab personnel.

Administrative duties are another stressor. Ten interviewees complained that reports,

“Financial and other pressures have intensified and exacerbated each another, making research environments stressful.”

paperwork, personnel evaluations, grant procedures, training requirements, business meetings and daily e-mail minutiae have become much more cumbersome than in the past, distracting scientists from research and sapping energy, creativity and productivity. “There are more administrative and reporting demands, to the point where they seem repetitive, overlapping and always on a high-demand time schedule,” said one respondent. Another said that they “spend much more time jumping through hoops”.

A NEW APPROACH

This all paints a rather bleak picture. But we think that MD Anderson has made inroads towards addressing the problem as an institution, even in light of recent challenges. Twelve years ago, in response to the suicide of a colleague, a group of concerned faculty members and executive leaders formed a Faculty Health Committee (with E.R.G. as the founding chair) to develop a crisis-response protocol and to consider other ways to preserve and promote faculty welfare. The committee developed the Faculty Health & Well-Being programme, of which W.H. is the director.

Many of the programme's activities, such as lectures and departmental seminars, are educational. Others are designed to enhance peer support as a buffer against stress and burnout. Several are outside the realm of academic medicine: social gatherings, dance lessons, parenting support groups, opera performances, a faculty art show, meditation, yoga and t'ai chi. We launched a Faculty Assistance Program to enhance access to mental health care. We also facilitated panel discussions on work–life balance, dialogues with executive leaders and a three-day working conference on faculty

health and well-being, the result of which was a book, *Faculty Health in Academic Medicine: Physicians, Scientists, and the Pressures of Success*⁵. Our survey results show that we still have work to do, but we have a framework in place to address problems and offer faculty support.

Our faculty senate collects input from MD Anderson scientists and maintains communication with institutional leaders through multiple channels, raising morale-related issues and proposing solutions. In the case of concerns and controversies about the centre's financial decision-making, clinical operations and conflict-of-interest policies in the past few years, the faculty senate organized meetings with executive leaders to improve communication, trust, transparency and shared decision-making.

At such meetings, leaders learned about the sources of faculty stress, and helped to brainstorm ways to mitigate them. We have implemented initiatives to reduce paperwork through a task force and an information-technology overhaul. And we have bolstered institutional mechanisms to provide extra financial support through bridge funding, seed funding and departmental-chair funds.

Through exchanges with leaders, faculty members have learned about the financial and regulatory realities of an institution. Progress has sometimes been slow — and we cannot remove every obstacle. But the more dialogue we have and the more effectively we collaborate, the better faculty members will understand challenges, appreciate efforts, engage in the process of negotiating change and finding compromises, and stay hopeful about future progress.

Could other institutions implement similar strategies? Yes, with sustained support from leaders. It sometimes takes a dramatic event, such as a financial or organizational crisis, to overcome institutional inertia and to bring executive and faculty leaders together to address their common interests. It also helps to have data. The MD Anderson faculty senate's morale survey has documented the need for the Faculty Health & Well-Being programme, and has provided our leadership with incentives and directions for cultural change.

These efforts are just a start, but we think a good one. It is crucial that we try to make a difference — now more than ever. ■

Warren Holleman is professor and **Ellen R. Gritz** is chair of the department of behavioural science at the University of Texas MD Anderson Cancer Center in Houston.

1. Shanafelt, T. D. et al. *Arch. Intern. Med.* **172**, 1377–1385 (2012).
2. Kuerer, H. M. & Holleman, W. L. *Ann. Surg.* **255**, 634–636 (2012).
3. National Research Council *Research Universities and the Future of America* (National Academies Press, 2012).
4. Ginsberg, B. *The Fall of the Faculty* (Oxford Univ. Press, 2011).
5. Cole, T. R., Goodrich, T. J. & Gritz, E. R. (eds) *Faculty Health in Academic Medicine* (Humana, 2009).