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Attitudes regarding overuse of inpatient laboratory testing vary according to provider type

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Introduction

Routine hospital laboratory testing is common and unnecessary tests can harm patients¹. Multiple professional societies have recommended against routine laboratory testing in hospitalized patients.²

Advanced practice providers (APP), including nurse practitioners (NP) and physician assistants (PA), increasingly care for hospitalized patients and order tests³; registered nurses (RN) may also influence ordering. No studies have evaluated attitudes of non-physician providers toward inpatient laboratory testing.

We performed a cross-sectional survey among diverse inpatient providers to describe differences in attitudes and beliefs regarding laboratory testing.

Methods

The study was conducted at Memorial Sloan Kettering Cancer Center (New York City). The survey was adapted from a previously administered survey.⁴ All NPs, PAs, RNs, and medical doctors (MDs) with inpatient duties during the 2-week survey period in 2015 received emails linking to the anonymous survey. Survey completers received a free coffee. The study was deemed exempt by the Institutional Review Board.

Survey items included provider type (RN, NP, PA, resident, fellow, attending physician), gender, the extent of unnecessary laboratory testing, and attitudes toward testing. Most responses utilized a 4-point likert scale (Strongly agree, Somewhat agree, Somewhat disagree, Strongly disagree).

We used univariate descriptive statistics, dichotomized attitude/belief responses (strongly/somewhat agree vs. strongly/somewhat disagree), and used the chi-square statistic to

evaluate differences by provider type. We grouped trainees (residents and fellows) and APPs (NPs and PAs) for all analyses. Analyses utilized SAS statistical software, version 9.4.

Results

Among 1580 eligible participants, 837 (53%) completed surveys; 41% were RNs, 24% were attending physicians, 17% were trainees, and 19% were APPs. Most were female (73%), particularly APPs and RNs (>90%). Response rates ranged from 46% (RNs) to 73% (attendings).

Overall, 65% reported unnecessary laboratory testing on their unit, while 37% reported requesting unnecessary laboratory testing themselves in the last 6 months, with differences by provider type (testing on unit: trainees 62%, APPs 59%, attendings 43%, RNs 14%; requesting testing themselves: trainees 79%, APPs 59%, attendings 72%, RNs 46%). Respondents most commonly reported attendings (54%) as those who would be uncomfortable with less testing and that unnecessary lab testing was intended to satisfy primary attendings (37%).

Attitudes toward laboratory testing varied by provider type (Table); RNs were more likely than others to value routine testing across multiple items. More physicians than APPs and RNs reported comfort with less testing.

Discussion

We found broad recognition of laboratory testing overuse among inpatient clinical providers and attitudinal differences across provider types. RNs were most likely to endorse the importance of daily testing and fear consequences of less testing, physicians were least likely, and APPs were intermediate.

Our finding that RNs and APPs value laboratory testing more than physicians is novel. The literature comparing APP and MD practice is mixed^{5,6}; we found attitudinal differences that may drive important practice differences. Further, RNs are important care team members despite not placing orders; little evidence describes their influence on the ordering process. We found that RNs generally favored more testing than other providers; the impact on test ordering is unclear.

Our findings regarding the role of attending physicians are notable. Non-attendings believed attendings would be uncomfortable with less testing, but attendings themselves overwhelmingly endorsed it. Misperceptions of attendings' beliefs may drive unnecessary testing, particularly in settings where APPs place orders. Improved communication within the care team could reduce lab testing and perhaps other excessive services.

Limitations to our study include its performance at a single center focused on the care of cancer patients. Our response rate was modest though comparable to that of similar studies⁴.

In conclusion, attitudes towards inpatient laboratory testing differ across provider types, highlighting the importance of studying overused services across care teams to optimize interventions.

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Table

Attitudes toward laboratory testing by provider type

	Strongly Agree or Somewhat Agree ^a , No. (%)					P value
	All (n=837)	Attending MD (n=197)	Trainee MD (n=139)	APP (n=154)	RN (n=347)	
<i>Hospitalized patients should have daily laboratory testing</i>	491 (59)	55 (28)	63 (46)	97 (63)	276 (80)	<.001
<i>Hospitalized patients should have laboratory testing on discharge day</i>	434 (52)	62 (32)	52 (37)	73 (47)	247 (71)	<.001
<i>Daily laboratory testing generally enhances patient safety</i>	459 (55)	50 (26)	51 (37)	84 (55)	274 (79)	<.001
<i>Daily laboratory testing generally helps avoid malpractice litigation</i>	400 (48)	54 (27)	56 (41)	66 (43)	224 (65)	<.001
<i>Asking for laboratory testing protects me from criticism</i>	281 (34)	47 (24)	56 (41)	54 (35)	124 (36)	.007
<i>I would be comfortable if my hospitalized patients received LESS laboratory testing</i>	566 (68)	166 (84)	119 (86)	106 (69)	175 (51)	<.001

MD = Doctor of medicine; APP = Advanced practice provider; RN = Registered nurse

^aAgreement was measured on a 4-point scale; sample sizes vary slightly for each statement because of missing data