

Identifying barriers to equitable biomarker testing in underserved patients with NSCLC: A mixed-methods study to inform quality improvement opportunities

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1. Association of Community Cancer Centers (ACCC)
2. LUNgevity Foundation
3. CE Outcomes, LLC
4. Thistle Editorial

Abstract #123

Introduction and purpose

In 2020, the American Association for Cancer Research called out the "imprecision of precision medicine" in a report focused on disparities inherent in the management of patients with cancer. While recent advances in precision medicine have substantially changed the management of lung cancer, care must be taken to ensure that expansion of the use of biomarker testing does not worsen health disparities. The purpose of this study was to utilize paired clinician and patient perspectives on the use of biomarker testing to identify barriers to equitable precision medicine access among underserved patients with non-small cell lung cancer (NSCLC).

Methodology

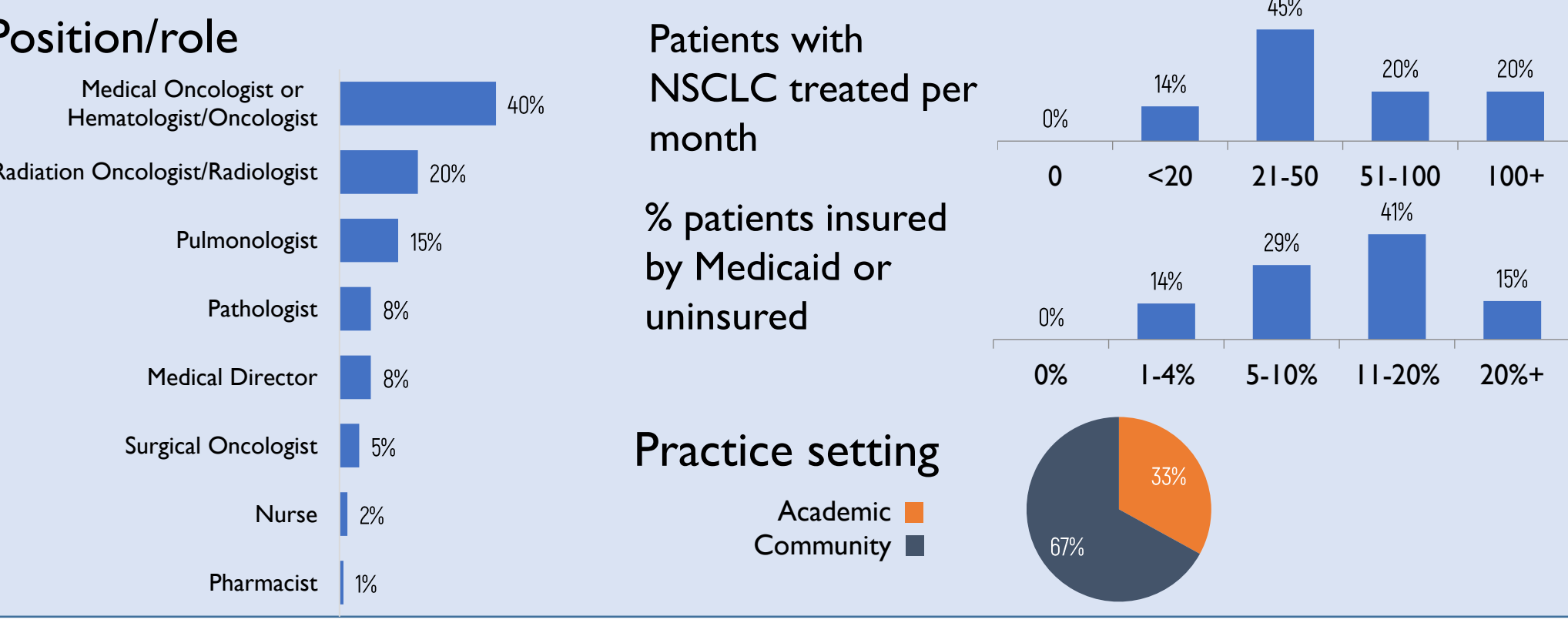
Paired national surveys (one clinician-facing and one patient-facing) were developed respectively by the Association of Community Cancer Centers (ACCC) and LUNgevity Foundation to understand key clinician patient perceptions in the biomarker testing process, including awareness of and attitudes toward testing, current practice patterns, and barriers to access. The study protocol was reviewed and approved by Advarra IRB.

The clinician survey was distributed online through ACCC member lists and the Sermo social network. Patients with NSCLC were recruited through two patient advocacy networks (LUNgevity Foundation and Patient Advocate Foundation) and a national research panel to identify patients with NSCLC from April-June 2020.

Descriptive analyses and subanalyses were used to observe overall trends in the clinician and patient data. Clinician and patient focus groups were conducted from October-November 2020 to better understand biomarker testing processes, confirm survey results, and explore solutions to identified barriers.

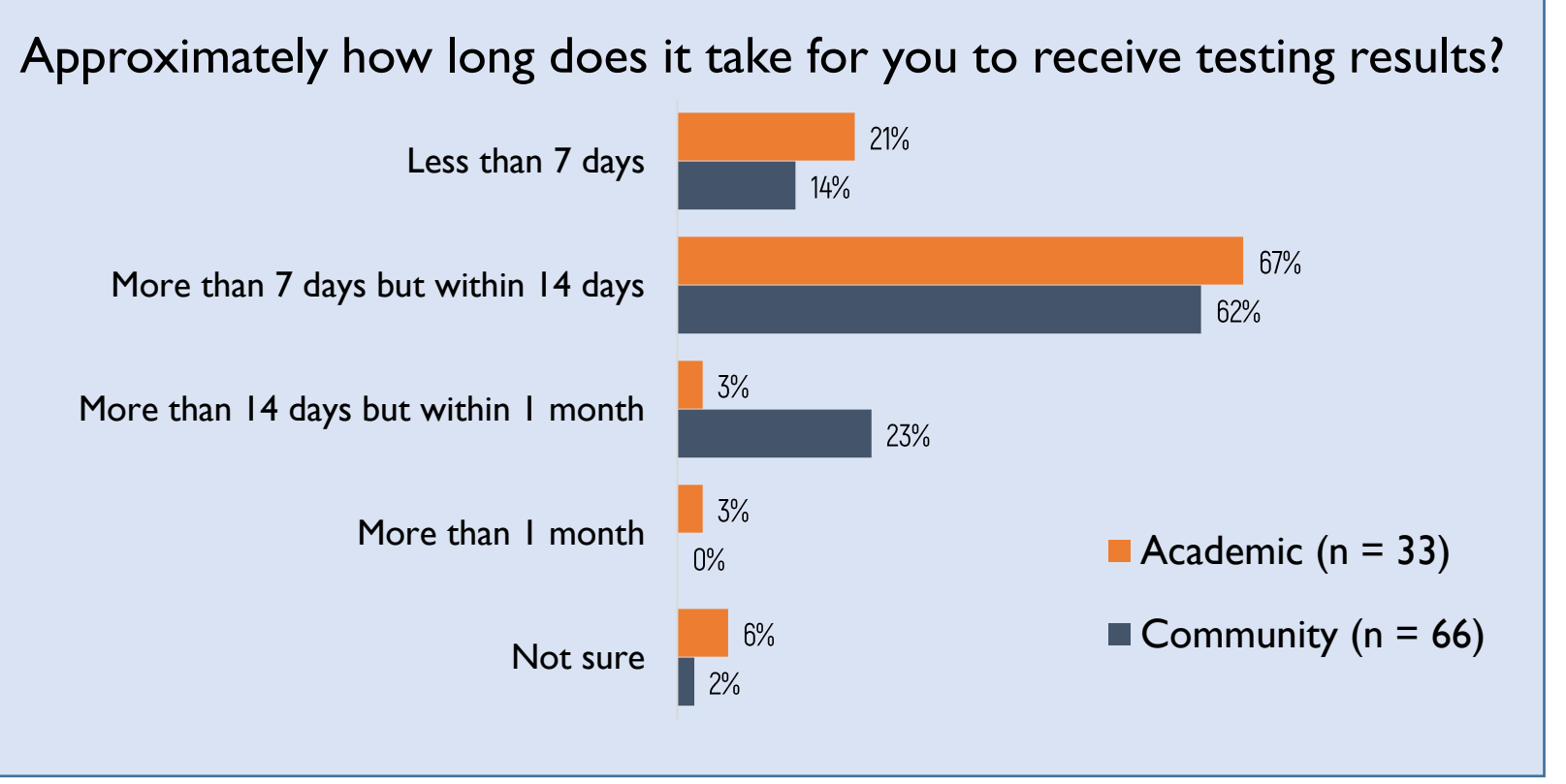
Clinician sample demographics

A total of 99 clinicians responded, with 67% (66/99) representing oncology clinicians from community cancer programs. To be included, oncology clinicians had to treat patients with NSCLC and have a non-zero percentage of their patients insured by Medicaid or uninsured.



Time to receive biomarker testing results

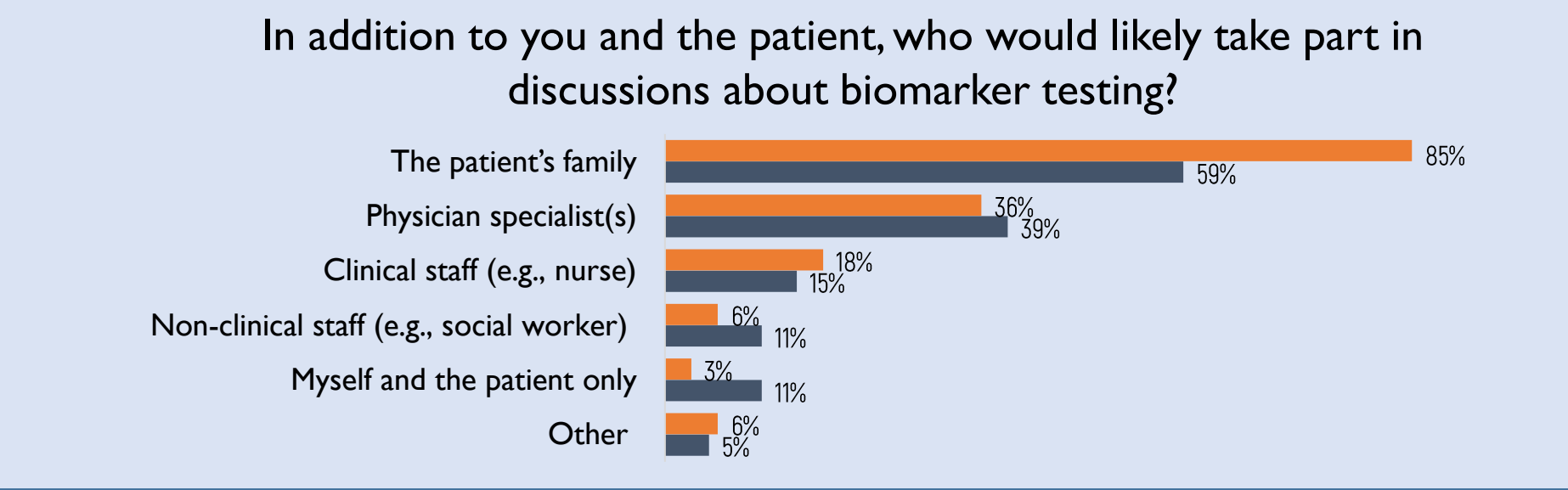
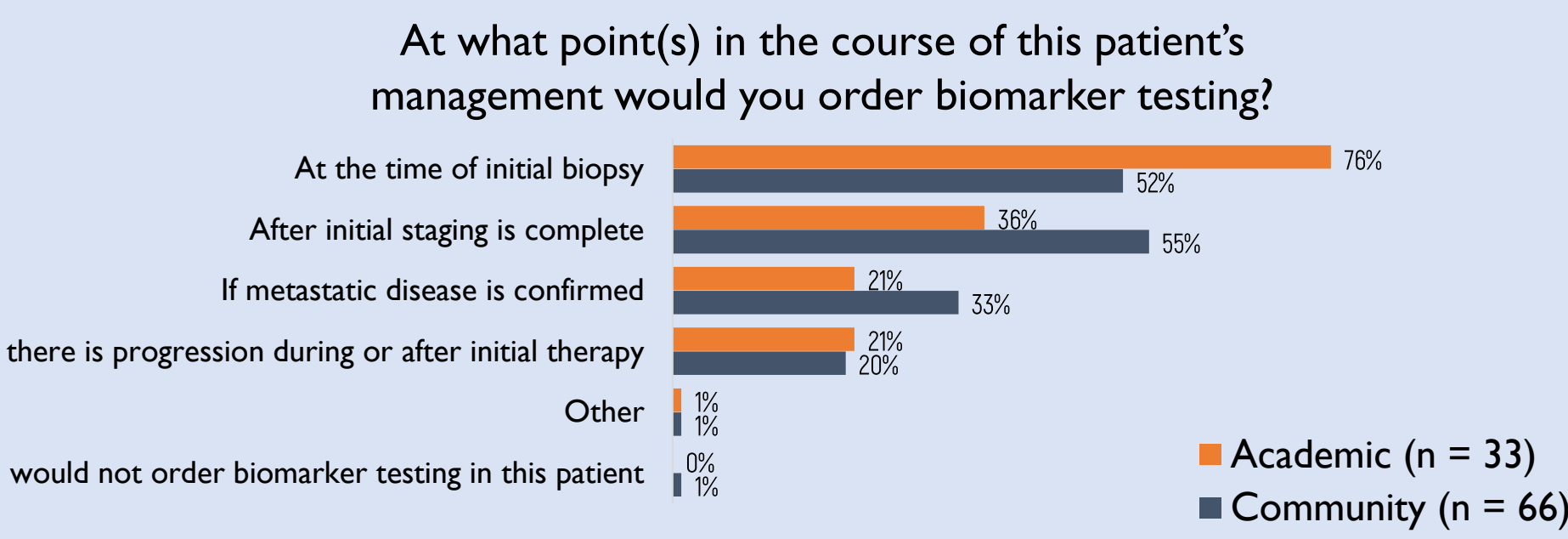
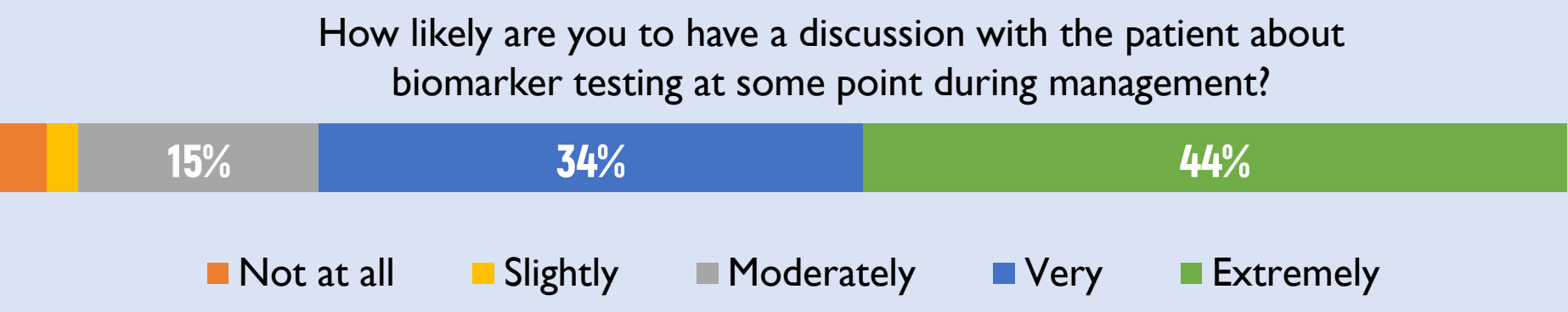
Most clinicians receive testing results in 7-14 days, but for 23% of community and 6% of academic clinicians the process can take over 2 weeks.



Timing of biomarker testing

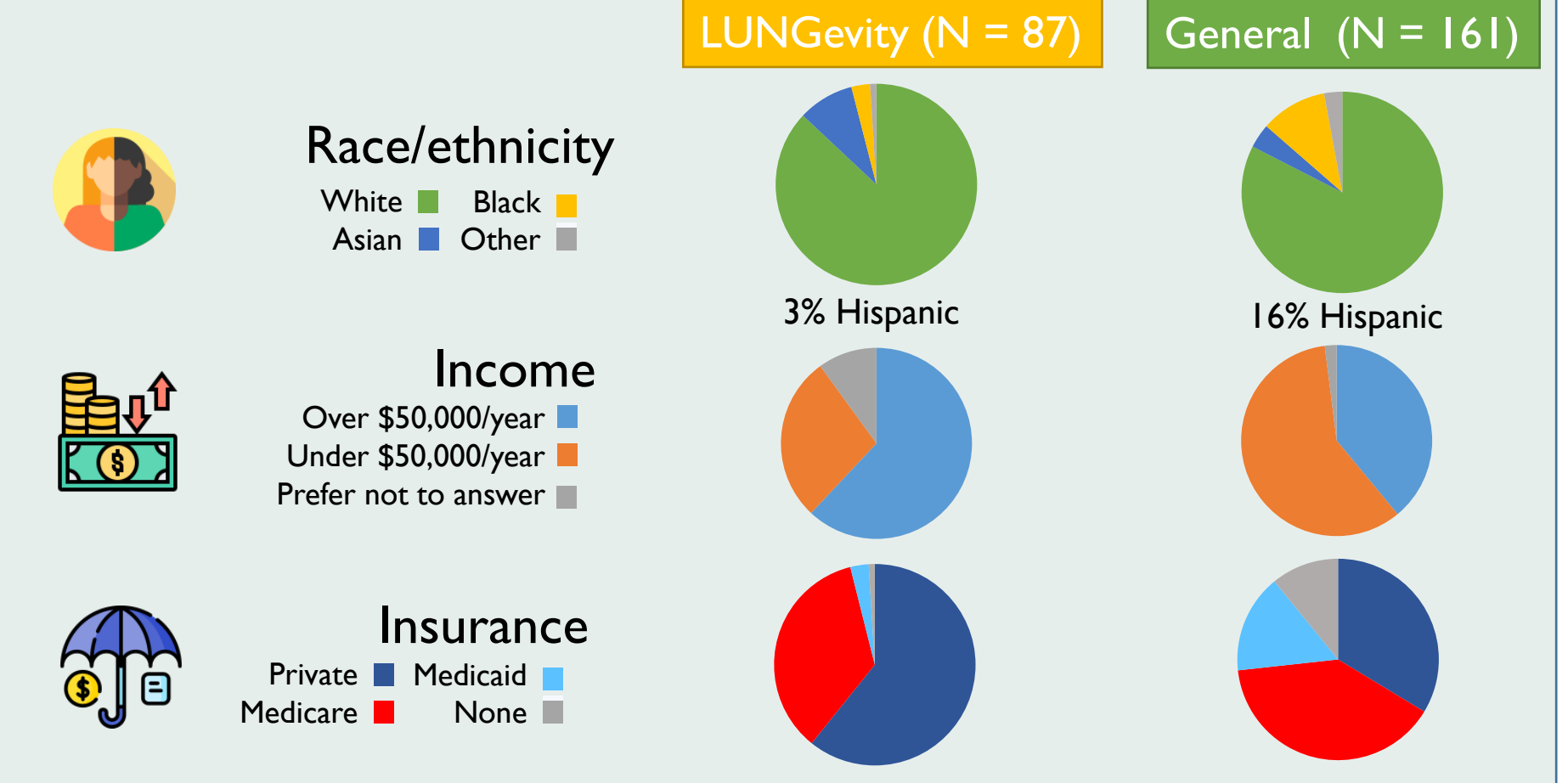
When presented a typical patient with NSCLC, most clinicians indicated that they were "very" or "extremely" likely to discuss biomarker testing. Academic clinicians were more likely than community clinicians to order testing at the time of initial biopsy and involve the patient's family in biomarker testing discussions.

BL is a 64-year-old Caucasian female with a 30-year history of "social" smoking and recent onset of lethargy and cough. Her PCP ordered a chest X-ray, which showed a new right-sided focal lesion and possibly enlarged hilar lymph nodes. She denies bone pain, neurologic symptoms, or any other complaints. The patient is then referred to you for further work-up, and a chest CT reveals a peripheral right upper lobe mass with hilar lymphadenopathy consistent with lung cancer. You order a bronchoscopic lung biopsy for tissue diagnosis.



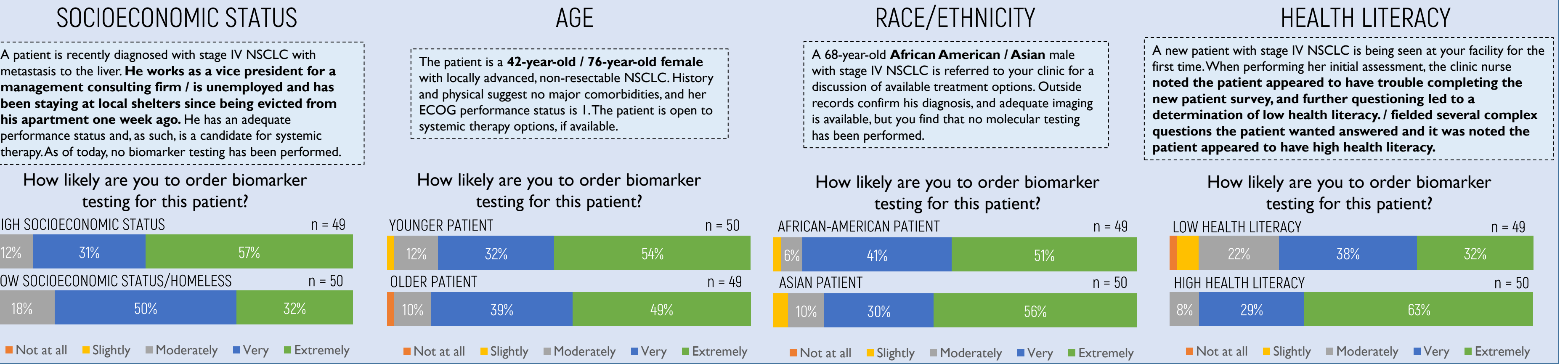
Patient sample demographics

Significant demographic differences were found in the two patient cohorts: the general panel included patients more racially diverse, with lower income and on Medicaid/uninsured.



Clinician case management

Clinicians were randomly split into two groups, with each one responding to slightly modified versions of patient cases to identify whether patient-specific factors (socioeconomic status, age, race/ethnicity, and health literacy) affected biomarker testing decisions. Little difference was seen in clinician response to a patient's age or race/ethnicity; respondents indicated high likelihood to order guideline-concordant biomarker testing with these cases. Differences were seen in how clinicians responded to socioeconomic status and health literacy.



Conclusions

While most clinicians surveyed discuss biomarker testing with their patients with lung cancer, the likelihood of ordering guideline-concordant testing decreased for patients with lower socioeconomic status and health literacy. LUNgevity-connected patients were significantly more likely to receive biomarker testing, suggesting a strong role for patient advocacy groups to help drive guideline-concordant testing. Professional organizations and advocacy groups should focus on developing collaborative educational tools, including those that improve the content and quality of patient-provider discussions about biomarker testing. Work has begun on an interventional project which will pilot a lung cancer biomarker testing care sequence plan to promote patient engagement and to offer a coordinated treatment approach.

ACKNOWLEDGEMENTS AND DISCLOSURES:
The authors would like to thank the ACCC committee members, as well as the clinician and patient survey panelists. This study was supported by Genentech, Foundation Medicine, Janssen, Merck, Amgen.
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