National perceptions of EHR adoption: Barriers, impacts, and federal policies

National Center for Health Statistics

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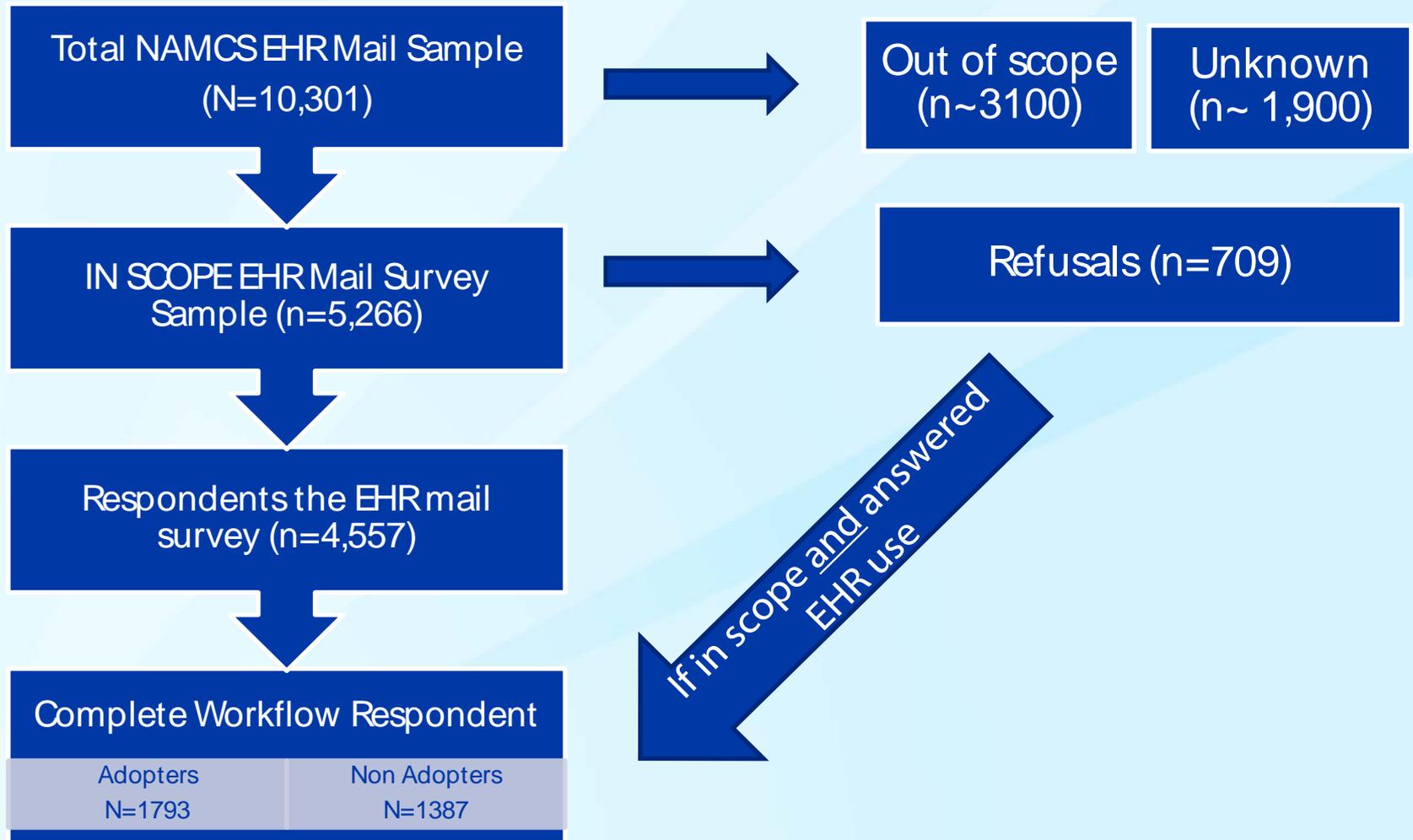National Conference on Health Statistics

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Objectives

❑ To describe differences between adopters and nonadopters regarding barriers, beliefs about benefits of EHR use, and familiarity with policies available to facilitate EHR adoption.

❑ To identify what physician and practice characteristics are associated with different policies to support EHR adoption.

Background

- EHR barriers and physician experiences of EHR use
  - DesRoches et al., 2008
- HITECH Act
- The Physician Workflow Survey – 2011
  - Expert panel
  - Barriers associated with EHR adoption
  - Impacts associated with using EHRs
  - Policies influencing EHR adoption

2011 Workflow Study Flow Chart

Total NAMCS EHR Mail Sample
(N=10,301)

→ Out of scope (n~3100) | Unknown (n~ 1,900)

IN SCOPE EHR Mail Survey Sample (n=5,266)

→ Refusals (n=709)

Respondents the EHR mail survey (n=4,557)

Complete Workflow Respondent

| Adopters N=1793 | Non Adopters N=1387 |

If in scope <u>and</u> answered EHR use

Workflow Respondent Characteristics

Characteristics	Overall	Non-adopter	EHR Adopter
Age: ≥50 years	63%	70%*	57%*
Gender: Male	74%	74%	73%
Race: White	77%	78%	77%
Asian	10%	9%	11%
Black	4%	4%	4%
Ethnicity: Hispanic	5%	4%	7%
In an MSA: Yes	88%	88%	87%
Size^ 1-2 (small)	34%	46%*	24%*
3-10 (medium)	40%	34%*	45%*
≥ 11 (large)	13%	4%*	21%*
Ownership^: MD owned	56%	62%*	50%*

Source: Physician Workflow Survey, 2011

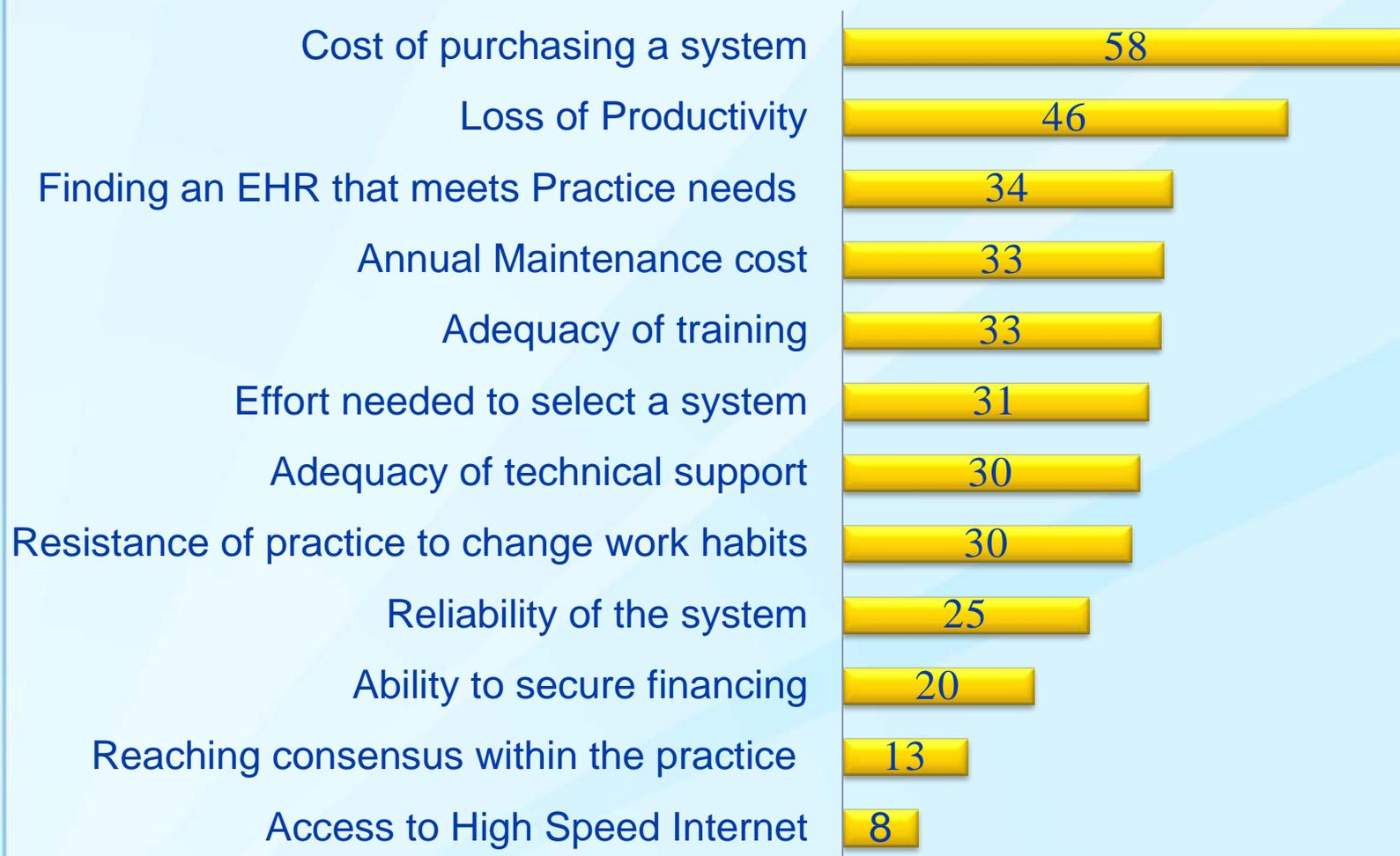*Differences between adopters and nonadopters presented were significant (p<0.01)

^ ~13% of practice size and ownership data are missing due to refusal to EMR mail survey,

RESULTS:
Barriers to EHR adoption

Major barriers to EHR adoption

Barrier	Value
Cost of purchasing a system	58
Loss of Productivity	46
Finding an EHR that meets Practice needs	34
Annual Maintenance cost	33
Adequacy of training	33
Effort needed to select a system	31
Adequacy of technical support	30
Resistance of practice to change work habits	30
Reliability of the system	25
Ability to secure financing	20
Reaching consensus within the practice	13
Access to High Speed Internet	8

Source: NCHS/Physician Workflow Survey

Top 5 Major barriers

- Nonadopters:
  1. Purchase cost (74%)
  2. Productivity loss (59%)
  3. Maintenance cost (49%)
  4. Finding an EHR (45%)
  5. Adequate training (41%)

- Adopter:
  1. Purchase Cost (51%)
  2. Productivity loss (37%)
  3. Effort to select EHR (27%)
  4. Adequate training (26%)
  5. Finding an EHR (26%)

*Major barrier differences were significantly different between adopters and nonadopters (p<0.01)

Source: NCHS/Physician Workflow Survey

Quotes (qualitative)

- Cost to Purchase:

  "I have become an employed physician, [cost of purchasing an EHR system] is a large reason for this"

  "We are on our 2nd EHR. The first one not certified for MU. We installed new EHR 2011."

- Productivity Loss:

  – "I tried to use an EMR and due to sense of slowing of the workflow caused by the EMR, I have abandoned it for now."

More quotes

- Resistance to change:
    - "I'll be closing my practice, along with a lot of my colleagues, when EHR becomes necessary to continue practice"

    - "…after 50 years in solo practice, do you actually think I would change?"

Quotes are not representative.
Source: NCHS/Physician Workflow Survey

Not all negative…

- Accessibility to the EHR record

    "I really like our EHR. I can access information at any time/any place. I can field phone calls at home at night…"

- More organized information

    "EHR has eliminated paper charts making results more organized and allow for more easy work from home."

Quotes are not representative.
Source: NCHS/Physician Workflow Survey

Mixed quotes

"EHR is exceptionally valuable for clarity, ease of access, communication, [and] prescribing. It does not save me money. It does not save time. It may or may not improve outcomes. I enjoy having an EHR, but it slows us down and costs us more money."
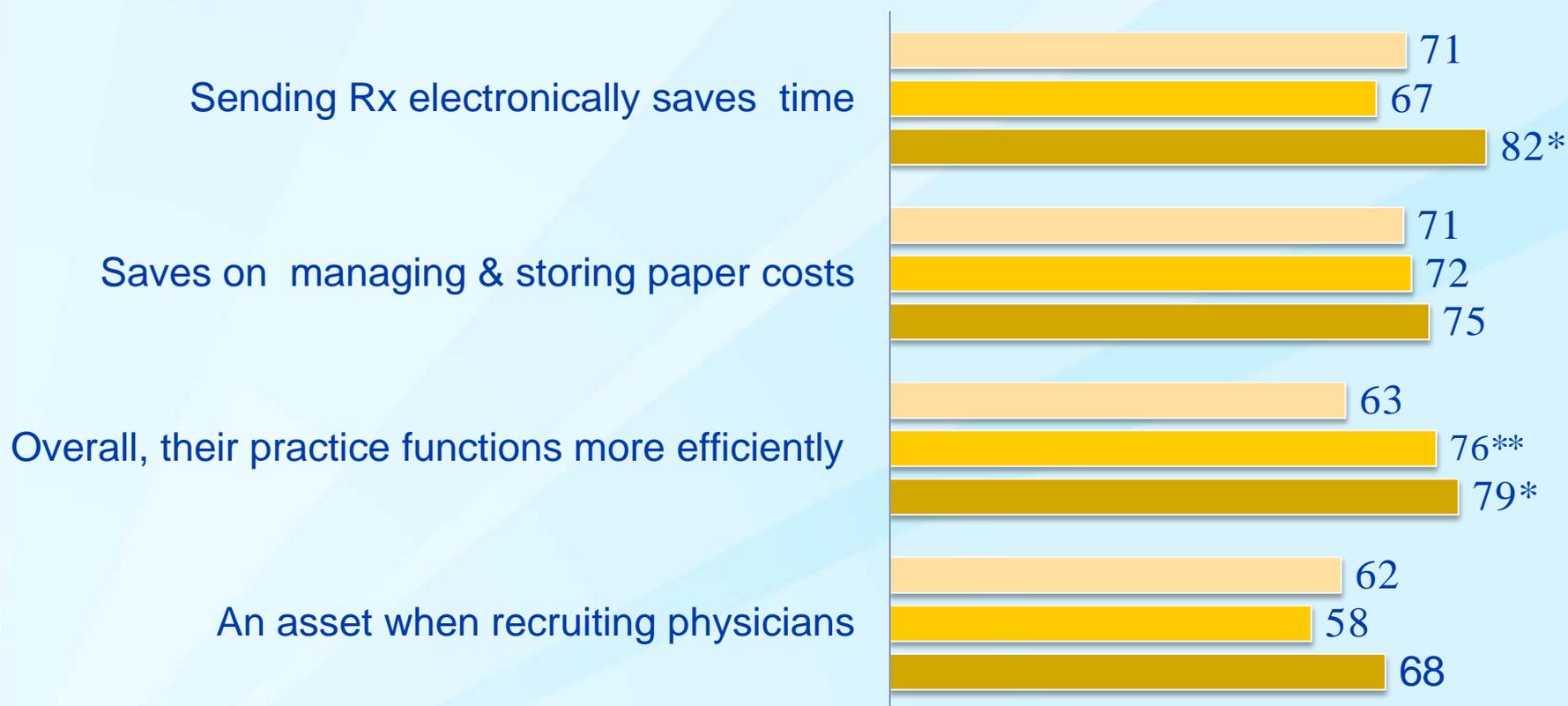
RESULTS:

Impacts of EHR use

Positive EHR impacts on efficiency/operations

■ Nonadopters ■ Adopter Not MU ready ■ Adopter MU ready

Sending Rx electronically saves time
- 71
- 67
- 82*

Saves on managing & storing paper costs
- 71
- 72
- 75

Overall, their practice functions more efficiently
- 63
- 76**
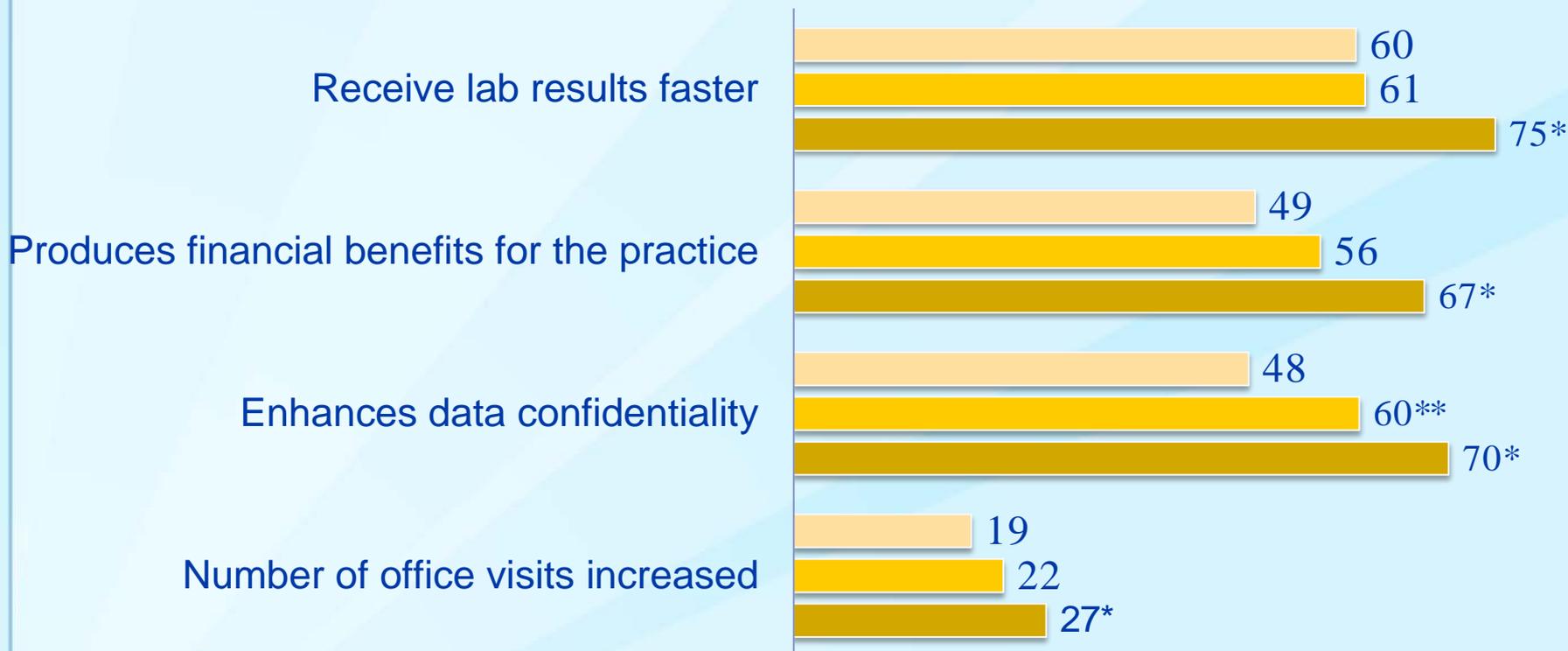- 79*

An asset when recruiting physicians
- 62
- 58
- 68

*Significant differences between Adopters MU ready and Nonadopters (p<0.05)
** Significant differences between Adopters not MU ready and Nonadopters (p<0.05)
Source: NCHS/Physician Workflow Survey

Positive EHR impacts on efficiency/operations (Cont.)

- ■ Nonadopters
- ■ Adopter Not MU ready
- ■ Adopter MU ready

Receive lab results faster
- Nonadopters: 60
- Adopter Not MU ready: 61
- Adopter MU ready: 75*

Produces financial benefits for the practice
- Nonadopters: 49
- Adopter Not MU ready: 56
- Adopter MU ready: 67*

Enhances data confidentiality
- Nonadopters: 48
- Adopter Not MU ready: 60**
- Adopter MU ready: 70*

Number of office visits increased
- Nonadopters: 19
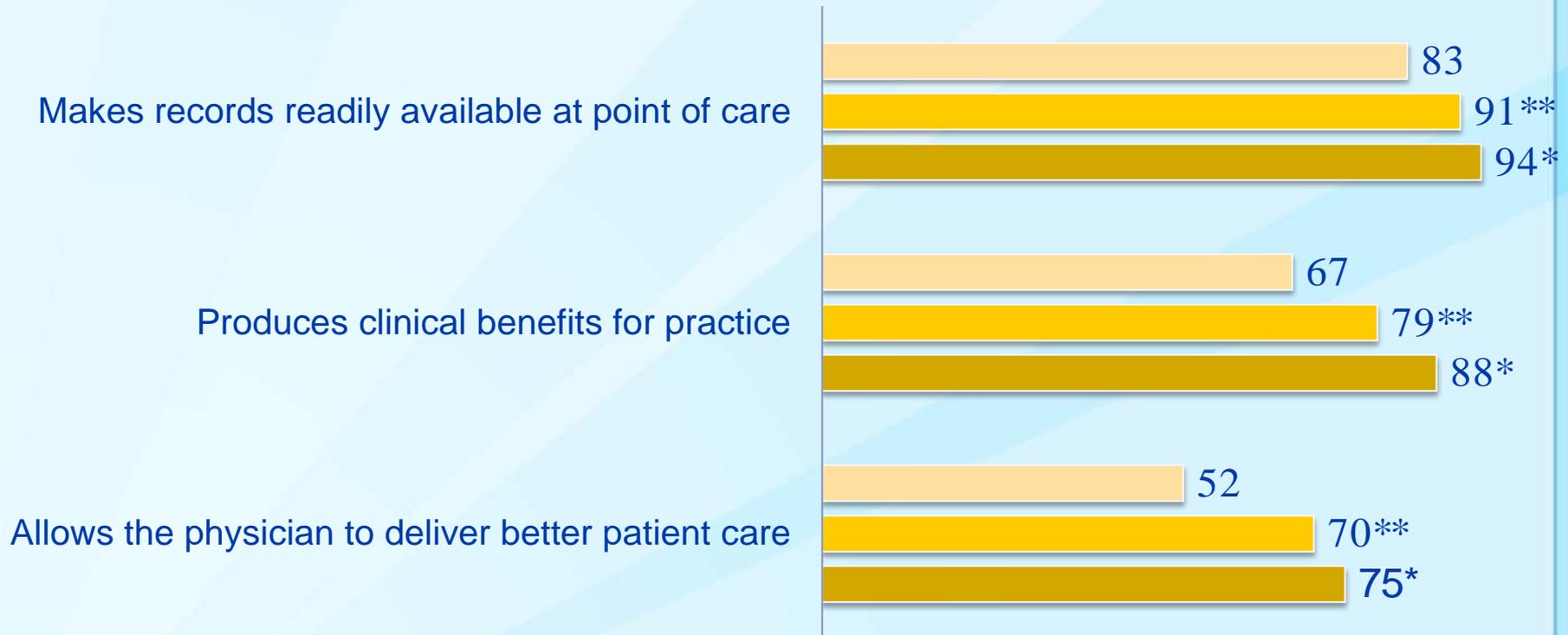- Adopter Not MU ready: 22
- Adopter MU ready: 27*

*Significant differences between Adopters MU ready and Nonadopters ($p<0.05$)
** Significant differences between Adopters not MU ready and Nonadopters ($p<0.05$)
Source: NCHS/Physician Workflow Survey

Positive EHR impacts on clinical care

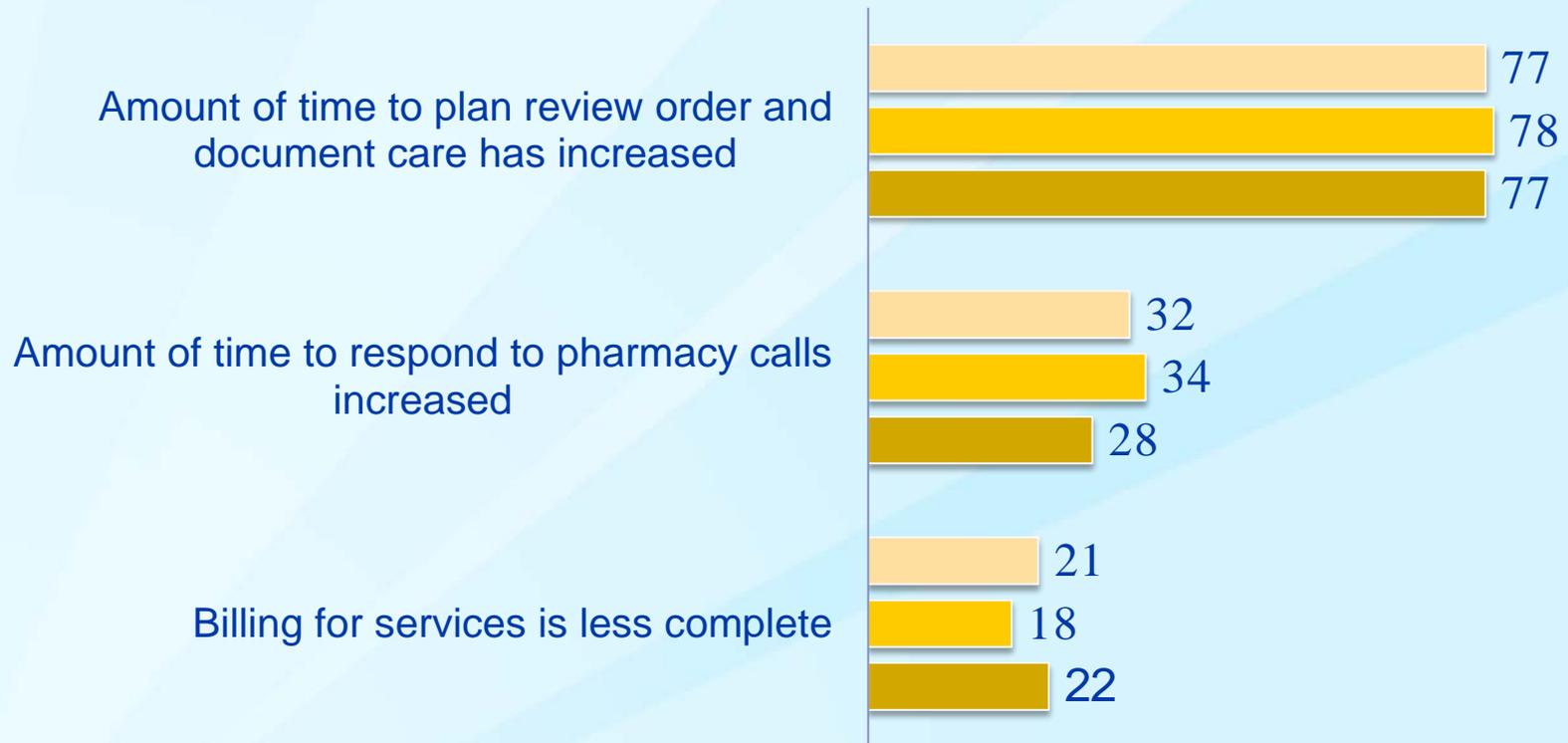■ Nonadopters ■ Adopters not MU ready ■ Adopters MU ready

Makes records readily available at point of care
- 83
- 91**
- 94*

Produces clinical benefits for practice
- 67
- 79**
- 88*

Allows the physician to deliver better patient care
- 52
- 70**
- 75*

*Significant differences between Adopters MU ready and Nonadopters (p<0.01)
** Significant differences between Adopters not MU ready and Nonadopters (p<0.01)
Source: NCHS/Physician Workflow Survey

Negative EHR impacts on efficiency/operations

■ Nonadopters   ■ Adopters not MU ready   ■ Adopters MU ready

Amount of time to plan review order and document care has increased
- 77
- 78
- 77

Amount of time to respond to pharmacy calls increased
- 32
- 34
- 28

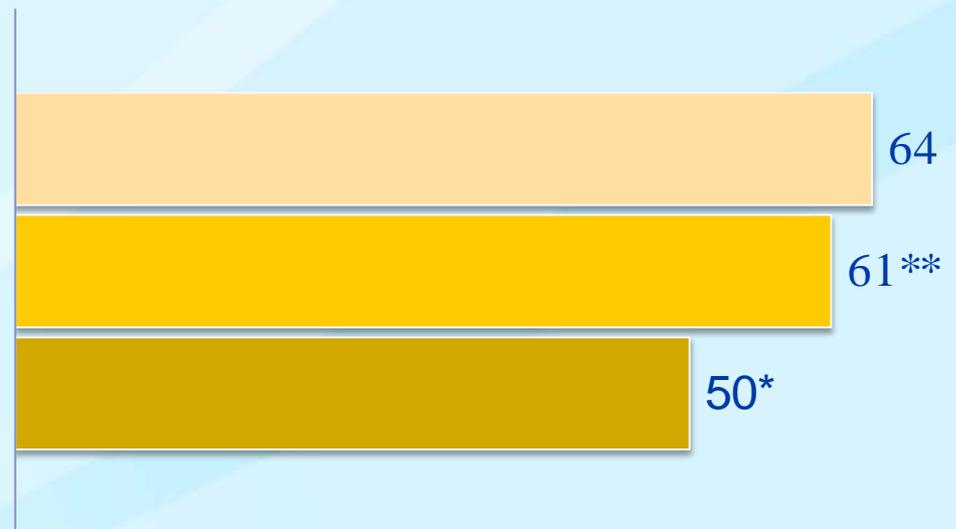**Billing for services is less complete**
- 21
- 18
- 22

Source: NCHS/Physician Workflow Survey

EHR Negative impacts on clinical care

■ Nonadopters   ■ Adopters not MU ready   ■ Adopters MU ready

EHR disrupts the way physicians interact with their patients

64

61**

50*

*Significant differences between Adopters MU ready and Nonadopters (p<0.01)
** Significant differences between MU ready and not MU ready Adopters(p<0.01)
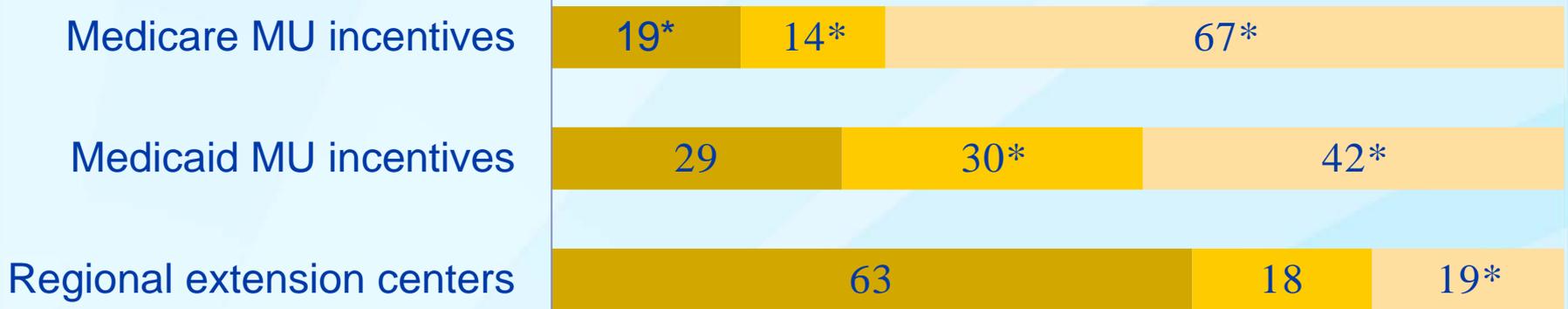Source: NCHS/Physician Workflow Survey
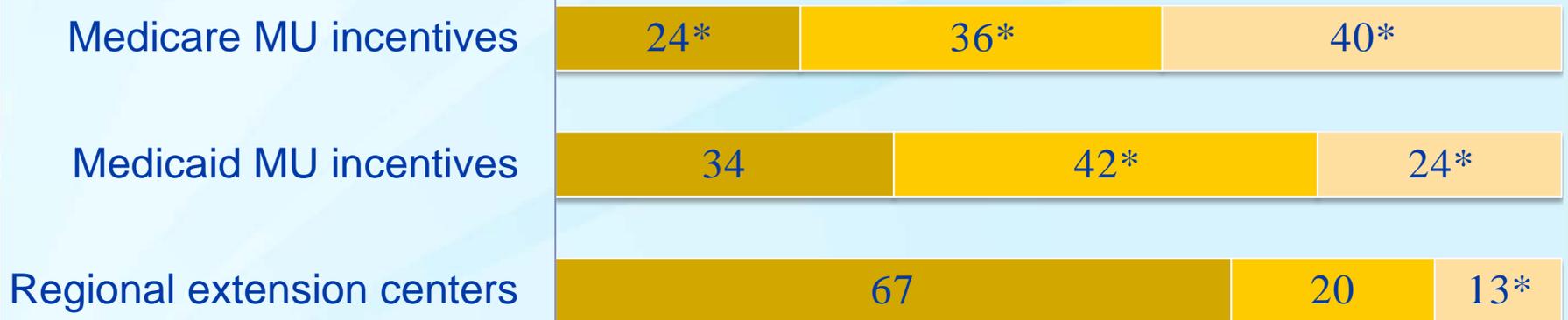
RESULTS:

Policies and the influence of policies on EHR adoption

Familiarity with ONC Programs

■ Not familiar ■ Do not participate ■ Plan to or already participate
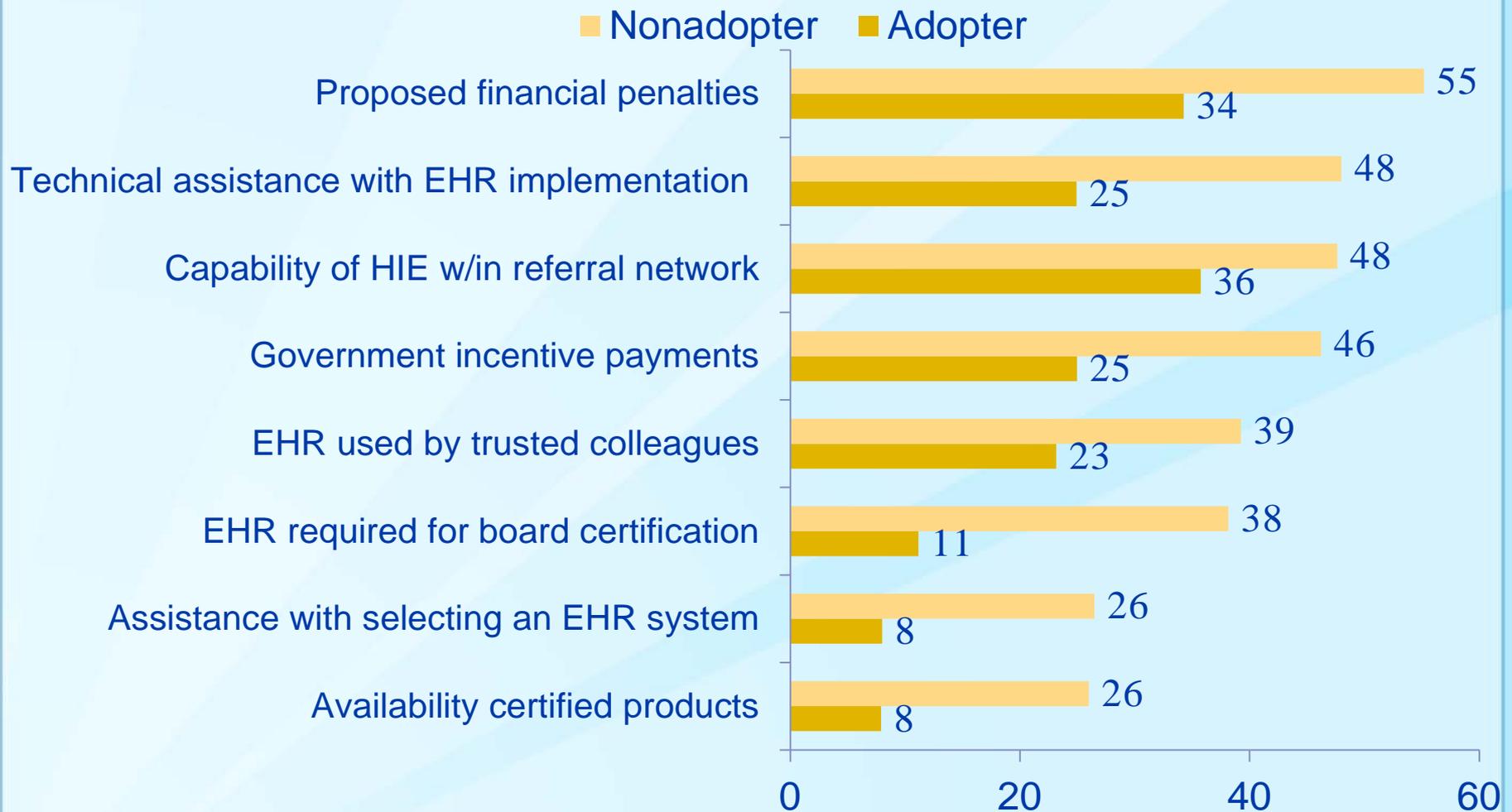
EHR Adopters

Program	Not familiar	Do not participate	Plan to or already participate
Medicare MU incentives	19*	14*	67*
Medicaid MU incentives	29	30*	42*
Regional extension centers	63	18	19*

EHR nonadopters

Program	Not familiar	Do not participate	Plan to or already participate
Medicare MU incentives	24*	36*	40*
Medicaid MU incentives	34	42*	24*
Regional extension centers	67	20	13*

* Significant (difference between adopters and nonadopters (p<0.01)

Source: NCHS/Physician Workflow Survey

Major influence to adopt EHR*

Legend: ■ Nonadopter ■ Adopter

Category	Nonadopter	Adopter
Proposed financial penalties	55	34
Technical assistance with EHR implementation	48	25
Capability of HIE w/in referral network	48	36
Government incentive payments	46	25
EHR used by trusted colleagues	39	23
EHR required for board certification	38	11
Assistance with selecting an EHR system	26	8
Availability certified products	26	8

*All differences are significant between adopters and nonadopters (p<0.01)

Source: NCHS/Physician Workflow Survey

Results

- Factors associated w/ policies reported as having a major influence on decision to adopt an EHR:
  - Available certified products, EHR use by trusted colleagues, & technical assistance:
    - Adoption status
  - Incentive payments, financial penalties, capability for HIE w/in network, req. board certification:
    - Adoption status, size
  - EHR selection assistance
    - Adoption status, specialty, ownership

Results (cont.)

- Factors associated with major barriers
  - Productivity loss, maintenance cost, finding an EHR that meets needs,
    - Adoption status, size, ownership
  - Reaching consensus, reliability of system
    - Adoption status, size
  - Purchase cost, effort to select a system, secure financing, adequate training
    - Adoption status, ownership
  - Resistance to change work habits
    - Adoption status, size, and region
  - Tech support – adoption status only
  - High speed internet – no significant associations

Satisfaction & Productivity

- Purchase EHR system again:
  - Yes: 71%
  - No: 29%

- EHR Satisfaction:
  - Very satisfied: 38%
  - Somewhat satisfied: 47%
  - Somewhat dissatisfied: 10%
  - Very dissatisfied: 5%

- EHR adversely affect productivity
  - Yes: 63%   No: 37%

- If yes, did you recover?
  - Recovered   74%
    - <3 months   34%
    - 3-6 months 16%
    - > 6 months   24%
  - Not recovered   22%
  - MISSING   4%

Source: NCHS/Physician Workflow Survey

Discussion

- Major Barriers: Cost and Productivity loss
- EHR Workflow impact:
  - MU ready adopters experienced :
    - financial benefits, faster lab results, & e-Rx saves time
  - Both adopter groups experienced:
    - Overall more efficient practice, clinical benefits, better patient care, enhanced data confidentiality, & availability of records at POC.
  - All groups disagreed EHR use leads to:
    - Increased office visits, less complete billing, & increased time responding to Rx calls.

Discussion (cont.)

- – All groups agree:
  - Increase in time spent planning, reviewing, ordering, and documenting care
- EHR policy facilitators-
  - – Not familiar with RECs
  - – Nonadopters sensitive to most policies as major influence on EHR adoption
    - Financial penalties

The Physician Workflow Study

Q&A:

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The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention or the Office of the National Coordinator for Health Information Technology.