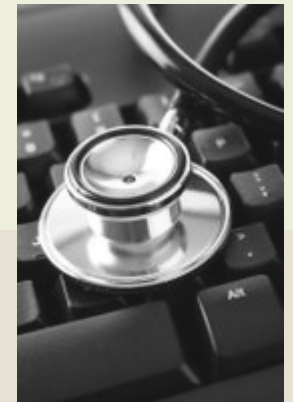


# The Use of Electronic Medical Records and Physicians' Attitudes toward a Health Information Exchange



August 2008: Third Interim Report

William G. Johnson, PhD

CHIR



Sponsored by and Prepared for the  
Arizona Health Care Cost Containment System  
by the Center for Health Information & Research

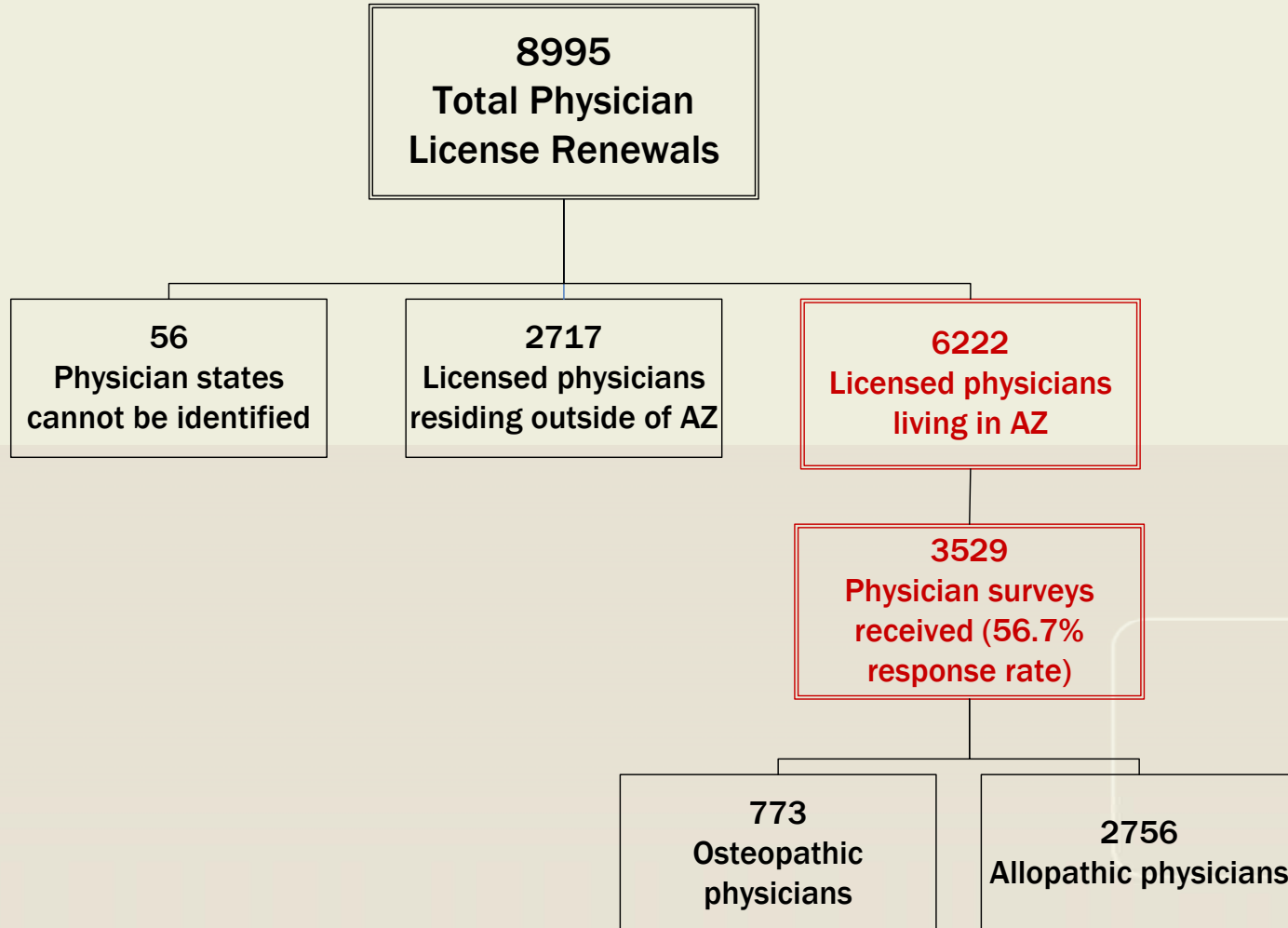
# Highlights

- 44% of physicians use some form of EMR.
- Use of EMRs ranges from 68% in government organizations to 25% among solo practitioners.
- Only a little more than half (55%) of EMR users exchange information with other health related organizations.

## Methodology

- Survey questions added to license renewal applications
- Survey responses merged with licensing data to create individual physician records
- Complete renewal cycle for osteopathic physicians plus approximately one-half of allopathic physicians (7/1707-5/31/08)
- Respondents are similar to non-respondents in terms of age, gender, location, primary care and specialty care

# Data Collection July 17, 2007 – May 31, 2008



# Methods of Storing Medical Records (N= 3,151)

<i>Variable</i>	<i>Number Yes</i>	<i>% of total</i>
Paper Files Only	1,491	47.3%
EMR Only	387	12.3%
Scanned Images Only	97	3.1%
EMR + Paper Only	250	7.9%
Paper + Scanned Images Only	168	5.3%
EMR + Scanned Images Only	359	11.4%
Paper + Scanned Images + EMR	399	12.7%
<i>EMR alone or in combination*</i>	<i>1,395</i>	<i>44.3%</i>

**Paper files remain the dominant form of medical records**

Source: AMB, ABOE Survey Data, July 17, 2007 - May 30, 2008.

Note: 235 respondents did not identify a method of storing medical records (missing).

\*Data on "EMR alone or in combination" is not mutually exclusive from other categories.

# Methods of Transmitting Medical Records (N=1,395)

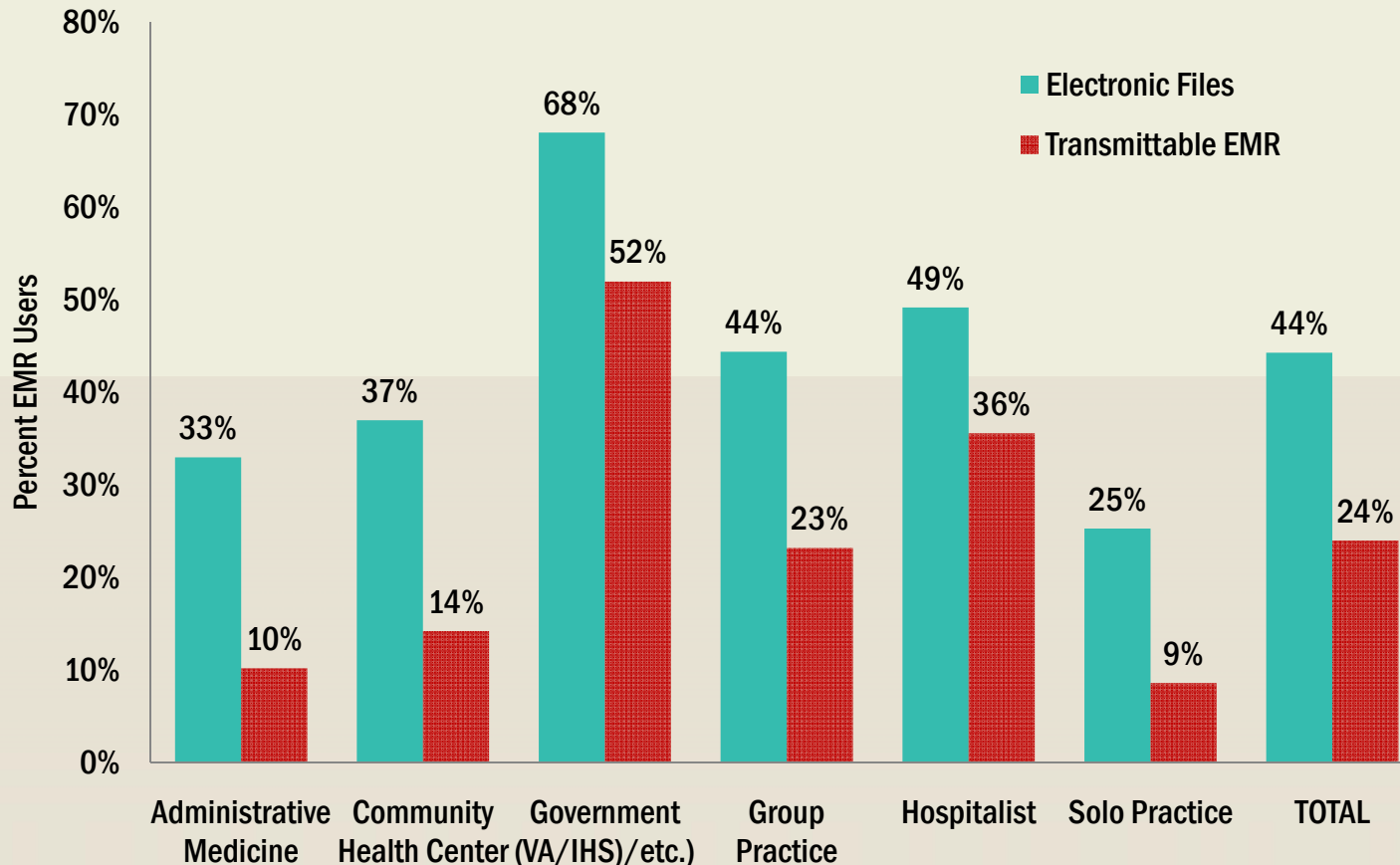
<i>Variable</i>	<i>N</i>	<i>% of Connected EMR Users</i>	<i>% of EMR Users</i>	<i>% of All Eligible Physicians</i>
Electronic File	1,395	-	100.0%	44.3%
Connected EMR System	761	100.0%	54.6%	24.2%
EMR System Connected to Hospital*	534	70.2%	38.3%	16.9%
EMR System Connected to Pharmacy*	413	54.3%	29.6%	13.1%
EMR System Connected to Lab*	569	74.8%	40.8%	18.1%
EMR System Connected to Radiology*	445	58.5%	31.9%	14.1%
“Fully Functional” EMR*	320	42.0%	22.3%	10.2%

**55% of  
 EMR users  
 are  
 connected  
 to other  
 parts of the  
 health care  
 system**

Source: AMB, ABOE Survey Data, July 17, 2007 - May 30, 2008.

Note: \*These percentages are not mutually exclusive. A “fully functional” EMR is one that can exchange information with each of these segments of the health care system: pharmacy, lab and radiology.

# Distribution of Users and Non-Users of EMRs by Type of Practice: Arizona Physicians



EMR use is highest in government settings, followed by hospitalists

Source: AMB, ABOE Survey Data, July 17, 2007 - May 30, 2008.

Note: 15 physicians with EMRs did not specify a type of practice, but are included in the total for consistency.

# Physician Characteristics Associated with EMR Use

- **Age** is one of the critical variables in determining the likelihood of EMR use.
  - The odds that a physician will use an EMR consistently and significantly increases as one moves from age 65+ to each of the younger age categories.
  - One can speculate that differences in culture, facility with computerized applications, and training experiences follow a similar distribution among ages.
  - The development of strategies for the promulgation of EMRs is, however, better served by investigation than speculation and we shall pursue the topic further as this project progresses.

# Physician Characteristics Associated with EMR Use

(cont.)

- Physicians in **government settings** are , all else equal, significantly more likely to utilize EMR than physicians in group practice, solo practice, and community health centers.
- **Female** physicians are less likely than males to utilize an EMR (although they are not less likely exchange information if they use an EMR).
- **DOs** with EMRS are more likely than MDs with EMRs to utilize a connected EMR.
- Little difference among Maricopa, Pima and more rural **counties**

## Who is the Decision Maker?

<i>Decision maker for purchase of EMR system</i>	<i>Number of EMR Users</i>	<i>% of EMR Users</i>	<i>Number of non-EMR Users</i>	<i>% of non-EMR Users</i>
Respondent was/would be decision maker	148	12.8%	421	27.3%
Shared decision	213	18.4%	452	29.3%
Decided by others	795	68.8%	668	43.4%
<b>Total</b>	<b>1,156</b>	<b>100%</b>	<b>1,541</b>	<b>100%</b>

Source: AMB, ABOE Survey Data, July 17, 2007 - May 30, 2008.

Note: There were 239 missing responses among EMR users and 215 missing responses among non-users.

## Who would you trust to manage an HIE? (N=600)

<i>Rank</i>	<i>Type of Organization</i>	<i>Percent</i>
1	hospital system	43.2%
2	commercial vendor	38.2%
3	regional health information organization	34.6%
4	state of Arizona (AHCCCS)	32.8%
5	other	16.8%
6	health insurer/managed care plan	13.5%

Source: AMB, ABOE Survey Data, July 17, 2007 - May 30, 2008.

Note: 89 of the 600 physicians without EMRs did not answer this question (missing). To have their responses included in this question, physicians must be non-EMR users and said they would “consider an internet-based system rather than one where the records are stored in your office PC or server.” *Percentages reflect non-missing responses only.*

## Summary of Results

- Paper records remain the dominant form in which medical records are stored, whether as the sole medium of storage or in combination with EMRs or scanned files.
- Approximately 44% of physicians surveyed use some form of an EMR in their practice.
- EMR use is most prevalent in government practice settings and least prevalent in private solo practices.
- The probability of EMR use, controlling for all other influences, is significantly related to physician age. The probability of use declines as physicians' ages increase.

## Summary (cont.)

- There is little difference in the prevalence of EMR use between the two most urban counties and other parts of Arizona.
- The adoption of EMRs is not synonymous with the exchange of information among health care organizations.
- Physicians who use EMRs place a higher value on them than do physicians who have yet to adopt EMRs.

## Conclusion

- Percentage of physicians with EMRs is higher than national studies suggest
- Creation of target group requires distinguishing between users and decision makers
- Use of EMRs is generally limited to intra-office use with little exchange capability
- Use of EMRs is much higher the larger the organization
- Use of EMRs is inversely related to age
- Variance among counties is very large with some rural counties having utilization rates nearly as high as Maricopa and Pima
- Acceptance of concept of an HIE with a state government home is